

FERMI 2 NUCLEAR POWER PLANT
DETROIT EDISON COMPANY
OPERATING LICENSE NO. NPF - 43

**Fermi 2 - 2007 Annual
Radioactive Effluent Release and
Radiological Environmental Operating Report**

**for the period of
January 1, 2007 through December 31, 2007**

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Fermi 2
Radiological Engineering

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Executive Summary

This report is published to provide information regarding radioactive effluent and environmental monitoring at the Fermi 2 Nuclear Power Plant. The 2007 Annual Radioactive Effluent Release and Radiological Environmental Operating Report covers the period from January 1, 2007 through December 31, 2007.

The Radioactive Effluent Release and Radiological Environmental Operating Report is produced annually, as required by the Nuclear Regulatory Commission, to present detailed results of extensive monitoring of plant releases and measuring of radiation in the environment around the plant. This report also includes details of the independent oversight incorporated into the Radiological Effluent and Environmental Monitoring Programs to ensure program accuracy.

This report describes both the continual environmental radiation monitoring and effluent monitoring of plant systems. Both types of monitoring indicate that the operation of Fermi 2 does not result in significant radiation exposure of people or the environment surrounding Fermi 2 and is well below the applicable levels set by the Nuclear Regulatory Commission (NRC) and the Environmental Protection Agency (EPA).

There were no releases of liquid radioactive effluents from Fermi 2 in 2007. In fact, there has not been a liquid radioactive discharge from Fermi 2 since 1994.

The highest potential single organ dose to a person living offsite due to iodines, particulates, and tritium released from the plant was calculated to be 0.08 mrem, which is 0.5% of the applicable limit found in 10 CFR 50, Appendix I.

Also during 2007, there was no measurable direct radiation dose due to Fermi 2 beyond the site boundary as shown by offsite thermoluminescent dosimeters (TLD) readings. The offsite dose due to effluents is an extremely small fraction of the 40 CFR 190 limits. Therefore, the combined direct radiation and effluent dose due to Fermi 2 was in compliance with 40 CFR 190 in 2007.

Radiological Environmental Monitoring Program samples collected in 2007 showed no radioactivity attributable to the operation of Fermi 2. The results of this sampling show that radioactivity levels have not increased from the background radioactivity detected prior to the operation of Fermi 2. The operation of Fermi 2 continues to have no measurable radiological impact upon the environment outside the Fermi 2 Protected Area.

Introduction

During the normal operation of a nuclear power plant, most of the fission products are retained within the fuel and fuel cladding. However, small amounts of radioactive fission products and trace amounts of the component and structure surfaces which have been activated are present in the primary coolant water. The four types of radioactive material released are noble gases, iodine, particulates, and tritium.

Noble Gases

Some of the fission products released in airborne effluents are radioactive radionuclides of noble gases, such as xenon and krypton. These noble gases are released continuously at low levels while the reactor is operating, and releases may be increased when the reactor is depressurized or when there are leaks in the fuel cladding. Noble gas releases to the environment are reduced by plant systems which delay release of these gases from the plant, which allows a portion of the noble gas activity to decay within plant systems after it is released from the fuel.

Noble gases are biologically and chemically nonreactive. They do not concentrate in humans or other organisms. They contribute to human radiation dose by being an external source of radiation exposure to the body. They are readily dispersed in the atmosphere.

Iodines and Particulates

Fermi 2 is required to calculate offsite dose due to releases of iodine-131 and iodine-133, which are radioisotopes of iodine with half lives of 8 days and 1 day, respectively, and particulates with half-lives greater than 8 days in gaseous and liquid effluents, and tritium. The principal radioactive particulates released are fission products (e.g., yttrium-91m and barium-139) and activation products (e.g., cobalt-58 and cobalt-60). Annual releases of these radionuclides are small. Factors such as their high chemical reactivity and solubility in water, combined with the high efficiency of gaseous and liquid processing and radwaste systems, minimize their discharge.

The main contribution of radioactive iodine to human radiation dose is to the thyroid gland, where the body concentrates iodine. This exposure results from inhalation or ingestion of these iodines. Radioactive cesiums and cobalts, when ingested or inhaled, contribute to radiation exposure of tissues such as the muscle, liver, and intestines. These iodines and particulates are also a source of external radiation exposure if deposited on the ground.

Tritium

Tritium, a radioactive isotope of hydrogen, is the predominant radionuclide in radioactive liquid effluents. Fermi 2 has not conducted liquid radiological waste discharges since 1994. It is also the predominant radionuclide in gaseous effluents, and is detected at Fermi 2 in ventilation exhaust samples. Plant personnel are also alert for evidence of unmonitored tritium releases, but no such releases have been detected. Tritium is produced in the reactor coolant as a result of neutron interaction with deuterium (also a hydrogen isotope) present in the water, and it is also a fission product.

Plant Effluent Monitoring

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

The radioactive waste treatment systems at Fermi 2 are designed to collect, process, and/or delay the release of liquid and gaseous wastes which contain radioactivity. For example, the 2.0 and 2.2 minute holdup pipes delay the release of radioactive gases so that radioactive decay can occur prior to release. The offgas system provides additional delay for such gases.

Radioactivity monitoring systems are used to ensure that all releases are below regulatory limits. These instruments provide a continuous indication of the radioactivity present at the release points. Each instrument is equipped with alarms and indicators in the control room. The alarm setpoints are low enough to ensure that applicable limits will not be exceeded. In some cases, these alarms restrict the release. For example, if the liquid radwaste effluent monitor alarms, a release in progress is automatically stopped. Also, several alarms cause building ventilation systems to be shut down and/or gaseous releases to be diverted to the standby gas treatment system.

All wastes are evaluated to identify the specific concentrations of radionuclides being released. Sampling and analysis provide a more sensitive and precise method of determining effluent composition than monitoring instruments.

A meteorological tower is located on the Fermi 2 site. It is linked to computers which record the meteorological data. This data is used in calculating dispersion and deposition factors, which are essentially dilution factors between plant release points and points offsite. Coupled with the effluent release data, these factors are used to calculate dose to the public.

Beyond the plant, devices maintained in conjunction with the Radiological Environmental Monitoring Program constantly sample the air in the surrounding environment. Frequent samples of other environmental media, such as water and vegetation, are also taken to determine if buildup of deposited radioactive material has occurred in the area.

Exposure Pathways to People

Radiological exposure pathways define the methods by which people may become exposed to radioactive material. The major pathways of concern are those which could cause the highest calculated radiation dose. These projected pathways are determined from the type and amount of radioactive material released, the environmental transport mechanism, and the use of the environment. The environmental transport mechanism includes consideration of physical factors, such as the hydrological (water) and meteorological (weather) characteristics of the area.

An important factor in evaluating the exposure pathways is the use of the environment. This is evaluated in the annual Land Use Census. Many factors are considered, such as the locations of homes, gardens, and milk or meat animals in the area.

The release of radioactive gaseous effluents involves pathways such as external whole body exposure, deposition of radioactive material on plants, deposition on soil, inhalation and ingestion by animals raised for human consumption, and inhalation by humans. The release of radioactive material in liquid effluents involves pathways such as drinking water and fish consumption.

Although radionuclides can reach humans by many different pathways, some result in greater dose than others. The most significant pathway is the exposure pathway which will provide the greatest dose to a population, or to a specific individual. Identification of the most significant pathway depends on the radionuclides involved, the age and diet of the individual, and the location of the individual's residence. The doses calculated may be delivered to the whole body or to a specific organ. The organ receiving the greatest fraction of the dose is important in determining compliance with dose limits.

Dose Assessment

Dose is energy deposited by radiation in an exposed individual. Whole body exposure to radiation involves the exposure of all organs. Most exposures due to external sources of radiation are of this type. Both non-radioactive and radioactive elements can enter the body through inhalation or ingestion. When they do, they are usually not distributed evenly. For example, iodine concentrates in the thyroid gland, cesium collects in muscle and liver tissue, and strontium collects in bone tissue.

The total dose to organs from a given radionuclide depends on the amount of radioactive material present in the organ and the amount of time that the radionuclide remains in the organ. Some radionuclides remain for very short times due to their rapid radioactive decay and/or elimination rate from the body, while other radionuclides may remain in the body for longer periods of time. Also the form of the radionuclide (soluble vs. insoluble) and the method of uptake also influence residence times in the body.

The dose to the general public in the area surrounding Fermi 2 is calculated for periods of gaseous release and for each liquid release. The dose due to radioactive material released in gaseous effluents is calculated using factors such as the amount of radioactive material released, the concentration beyond the site boundary, the locations of exposure pathways (cow milk, goat milk, vegetable gardens and residences), and usage factors (inhalation and food consumption). The dose due to radioactive material released in liquid effluents is calculated using factors such as the total volume of liquid, the total volume of dilution water, near field dilution, and usage factors (water and fish consumption). These calculations produce a conservative estimation of the dose.

The **Radiological Environmental Monitoring Program (REMP)** was established at Fermi 2 for several reasons: to provide a supplementary check on the effluent controls, to assess the radiological impact of the plant's operation on the surrounding area, and to determine compliance with applicable radiation protection guides and standards. The REMP was established in 1978, seven years before the plant became operational. This **preoperational surveillance program** was established to describe and quantify the

radioactivity, and its variability, in the area prior to the operation of Fermi 2. After Fermi 2 became operational in 1985, the **operational surveillance program** continued to measure radiation and radioactivity in the surrounding areas.

A variety of environmental samples are collected as part of the REMP at Fermi 2. The selection of sample types is based on the established pathways for the transfer of radionuclides through the environment to humans. The selection of sampling locations is based on sample availability, local meteorological and hydrological characteristics, local population characteristics, and land usage in the area of interest. The selection of sampling frequencies for the various environmental media is based on the radionuclides of interest, their respective half-lives, and their behavior in both the biological and physical environment.

Preoperational Surveillance Program

The federal government requires nuclear facilities to conduct radiological environmental monitoring prior to constructing the facility. This preoperational surveillance program is aimed at collecting the data needed to identify pathways, including selection of the radioisotope and sample media combinations to be included in the environmental surveillance program conducted after facility operation begins. Radiochemical analyses performed on the environmental samples should include not only those nuclides expected to be released during facility operation, but should also include typical radionuclides from nuclear weapons testing and natural background radioactivity. All environmental media with a potential to be affected by facility operation, as well as those media directly in the major pathways, should be sampled on at least an annual basis during the preoperational phase of the environmental surveillance program.

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

Fermi 2 began its preoperational environmental surveillance program seven years before the plant began operating in 1985. Data accumulated during those early years provide an extensive database from which environmental monitoring personnel are able to identify trends in the radiological characteristics of the local environment. The environmental surveillance program at Fermi 2 will continue after the plant has reached the end of its economically useful life and decommissioning has begun.

Operational Surveillance Program Objectives

The operational phase of the environmental surveillance program at Fermi 2 was designed with the following objectives in mind:

- to determine whether any significant increase occurs in the concentration of radionuclides in major pathways;
- to identify and evaluate the buildup, if any, of radionuclides in the local environment, or any changes in normal background radiation levels;
- to verify the adequacy of the plant's controls for the release of radioactive materials;
- to fulfill the obligations of the radiological surveillance sections of Fermi 2's Offsite Dose Calculation Manual.

Program Overview

The Radiological Environmental Monitoring Program (REMP) at Fermi 2 is conducted in accordance with Title 10, Code of Federal Regulations, Part 50; NRC Regulatory Guide 4.8; the Fermi 2 Offsite Dose Calculation Manual (ODCM); and plant operating procedures. Samples are collected either weekly, monthly, quarterly, semiannually, or annually, depending upon the sample type and nature of the radionuclides of interest. Environmental samples collected by Fermi 2 personnel are divided into four general types:

- **direct radiation** -- measured by thermoluminescent dosimeters (TLDs).
- **atmospheric** -- including samples of airborne particulates and airborne radioiodine.
- **terrestrial** -- including samples of milk, groundwater, and broad leaf vegetation.
- **aquatic** -- including samples of drinking water, surface water, fish, and shoreline and bottom sediments.

REMP samples are collected onsite and offsite up to 20 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 the effects caused by the operation of Fermi 2. Generally, they are located within ten miles of the plant. Control locations are those which should be unaffected by plant operations. Typically, these are more than ten miles away from the plant. Data obtained from the indicator locations are compared with data from the control locations. This comparison allows REMP personnel to take into account naturally occurring background radiation or fallout from weapons testing in evaluating any radiological impact Fermi 2 has on the surrounding environment. Data from indicator and control locations are also compared with preoperational data to determine whether significant variations or trends exist.

Sample Analysis

When environmental samples are analyzed, several types of measurements may be performed to provide information about the radionuclides present. The major analyses that are performed on environmental samples collected for the Fermi 2 REMP include:

Gross beta analysis measures the total amount of beta emitting radioactive material present in a sample. Beta radiation may be released by many different radionuclides. Since beta decay gives a continuous energy spectrum rather than the discrete lines 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 radionuclides; it does not identify specific radionuclides. Gross beta analysis merely 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 gamma emitting radionuclide present in the sample, and the amount of each nuclide present. Each radionuclide has a very specific "fingerprint" that allows for swift and accurate identification. For example, gamma spectral analysis can be used to identify the presence and amount of iodine-131 in a sample. Iodine-131 is a man-made radioactive isotope of iodine that may be present in the environment as a result of fallout from nuclear weapons testing, routine medical, or routine releases from nuclear power stations.

Tritium analysis indicates whether a sample contains the radionuclide tritium (H-3) and the amount present. Tritium is an isotope of hydrogen that emits low energy beta particles.

Strontium analysis identifies the presence and amount of strontium-89 and strontium-90 in a sample. These man-made radionuclides are found in the environment mainly as a result of fallout from nuclear weapons testing. Strontium is usually incorporated into the calcium pool of the biosphere. In other words, strontium tends to replace calcium in living organisms and becomes incorporated in bone tissue. The principle strontium exposure pathway is via milk produced by cattle grazed on pastures exposed to deposition from airborne releases.

Gamma Doses measured by thermoluminescent dosimeters while in the field are determined by a special laboratory procedure.

Often samples will contain little radioactivity, and may be below the lower limit of detection for the particular type of analysis used. The lower limit of detection (LLD) is the smallest amount of sample activity which can be detected with a reasonable degree of confidence, at a predetermined level. When a measurement of radioactivity is reported as less than LLD (<LLD), it means that the radioactivity is so low that it cannot be accurately measured with any degree of confidence by that particular method for an individual analysis.

Many radionuclides are present in the environment due to sources such as cosmic radiation and fallout from nuclear weapons testing. Some of the radionuclides present are:

- **tritium**, present as a result of the interaction of cosmic radiation with the upper atmosphere, as a result of routine release from nuclear facilities, and due to fallout from past atmospheric nuclear weapons testing.
- **beryllium-7**, present as a result of the interaction of cosmic radiation with the upper atmosphere.

- **cesium-137**, a man-made radionuclide which has been deposited in the environment, (for example, in surface soils) as a result of fallout from nuclear weapons testing and routine releases from nuclear facilities.
- **potassium-40**, a naturally occurring radionuclide normally found throughout the environment (including humans).
- **fallout radionuclides** from nuclear weapons testing, including strontium-89, strontium-90, cesium-137, cerium-141, cerium-144, and ruthenium-106. These radionuclides may also be released in minute amounts from nuclear facilities.

The radionuclides listed above are expected to be present in many of the environmental samples collected in the vicinity of the Fermi 2. The contribution of radionuclides from the operation of Fermi 2 is assessed by comparing sample results with preoperational data, operational data from previous years, control location data, and the types and amounts of radioactivity normally released from the Fermi 2 in liquid and gaseous effluents.

Quality Assurance

An important part of the environmental monitoring program at Fermi 2 is the **Quality Assurance (QA)** program. It is conducted in accordance with the guidelines specified in NRC Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Programs." The QA program is designed to identify possible deficiencies in the REMP so that corrective actions can be initiated promptly. Fermi 2's Quality Assurance program also provides confidence in the results of the REMP through:

- performing regular audits of the REMP, including a careful examination of sample collection techniques and record keeping;
- performing audits of the vendor laboratory which analyzes the environmental samples;
- requiring the analytical vendor laboratory to participate in an approved Cross-Check Program;

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- splitting samples prior to analysis by an independent laboratory and then comparing the results for agreement, and finally;
- requiring the analytical laboratory to perform in-house spiked sample analyses.

Radioactive Effluent Monitoring Results

This section summarizes the results of effluent monitoring and offsite dose calculation for the year 2007, as well as a listing of radioactivity contained in Fermi 2 waste shipped for burial. Calculated offsite doses are compared with Nuclear Regulatory Commission limits, and these limits are summarized in Appendix E. Appendix E also contains a detailed discussion of the methods used to determine quantities of radioactivity released in effluents, the types of solid radwaste, as well as tables of individual radionuclides released in effluents and shipped as solid radwaste.

There were no releases of liquid radioactive effluents from Fermi 2 in 2007. In fact, there has not been a liquid radioactive discharge from Fermi 2 since 1994. The 2007 gaseous effluent releases are summarized in the following tables. There were no abnormal releases of radioactive material, i.e., releases not performed in accordance with the Fermi 2 license and implementing procedures, in 2007.

The data in the following tables represent continuous and batch releases. In 2007, there were 10 containment purges in which radioactivity was detected. The total time for these purges was 6712 minutes. Based on recorded start and stop times, the shortest of these purges lasted 116 minutes, the longest lasted 1813 minutes, and the average purge length was 671 minutes.

Note that some values in the following summary tables are preceded by the “less than” symbol. For noble gases, these values represent the sum of the lower limit of detection (LLD) values for 6 common noble gases isotopes listed in Appendix E in units of microcuries per cubic centimeter ($\mu\text{Ci/cc}$). For gross alpha radioactivity releases, the “less than” value is in units of microcuries per cubic centimeter ($\mu\text{Ci/cc}$) and represents the LLD value for a single sample.

Table 1 - Fission and Activation Gases (Noble Gases) Summary

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Release (curies)	<3.8E-05	<3.8E-05	<3.8E-05	<3.8E-05
Average Release Rate for Period ($\mu\text{Ci/sec}$)	NA	NA	NA	NA

Table 2 - Radioiodines Summary

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Total I-131 (curies)	4.48E-04	5.26E-04	6.66E-04	1.05E-03
Average Release Rate for Period (μ Ci/sec)	5.69E-05	6.68E-05	8.46E-05	1.33E-04

Table 3 - Particulates Summary

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Particulates with half lives > 8 days (curies)	2.17E-04	4.63E-05	1.51E-04	7.43E-04
Average Release Rate for Period (μ Ci/sec)	2.76E-05	5.88E-06	1.92E-05	9.44E-05
Gross Alpha Radioactivity (curies)	1.47E-07	<5.5E-15	<5.5E-15	<5.5E-15

Table 4 - Tritium Summary

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Total Release (curies)	3.51E+01	3.35E+01	4.07E+01	1.53E+01
Average Release Rate for Period (μ Ci/sec)	4.46E+00	4.25E+00	5.17E+00	1.94E+00

The offsite dose impact of the above releases was evaluated by calculating organ doses to the most highly exposed individual living near the plant due to I-131, I-133, tritium, and particulates with half lives greater than 8 days. This exposure is assumed to be occurring via the pathways of inhalation, vegetation ingestion, and direct radiation from material deposited on the ground. The results of this calculation are shown in the following table:

Table 5

Organ	2007 Gaseous Effluent Dose to Receptor with Highest Single Organ Dose
Bone	8.45E-03 mrem
Liver	1.64E-02 mrem
Thyroid	7.58E-02 mrem
Kidney	1.64E-02 mrem
Lung	1.62E-02 mrem
GI-LLI	1.64E-02 mrem
Total body	1.76E-02 mrem

The highest single organ dose is 7.58E-02 mrem to the thyroid. This is 0.5% of the federal limit of 15 mrem specified in 10 CFR 50, Appendix I.

Another dose calculation normally performed on the above release data is that for gamma and beta air dose at the site boundary due to noble gases. In 2007, noble gases were not detected in Fermi noble gas effluent samples.

Title 40, Part 190 of the Code of Federal Regulations requires that dose to an individual in the unrestricted area from the uranium fuel cycle, including direct radiation dose, be limited to 25 mrem/year to the total body and 75 mrem/year to the thyroid. During 2007, there was no measurable direct radiation dose beyond the site boundary as shown by offsite TLD readings. Also, offsite dose due to effluents is an extremely small fraction of the 40 CFR 190 limits. Therefore, Fermi 2 was in compliance with 40 CFR 190 in 2007.

Potential dose to visitors at Fermi 2 due to all radioactive effluents, including noble gases, was also calculated. The Offsite Dose Calculation Manual (ODCM) considers persons visiting the Fermi 2 Visitors Center (4 hours/year), and persons ice fishing on Lake Erie near the plant (240 hours/year), to be visitors. Using ODCM assumptions about these categories of visitors, the maximum potential dose to a visitor to Fermi 2 in 2007 was 0.0029 mrem to the maximally exposed organ (thyroid) and 0.0020 mrem to the total body.

Also, the dose to the entire population within a fifty mile radius of Fermi 2 (about 6 million people) was calculated. This dose was estimated to be less than one person-rem for 2007. This dose is insignificant compared to the background radiation dose to this population of approximately 1.8 million person-rem (based on an annual average individual background dose of 300 mrem).

The radioactivity and volume of Fermi 2 solid waste received at the Barnwell, SC, burial facility, or at the Clive, UT, facility in 2007 is summarized in the following table:

Table 6 - Solid Waste Received At Burial Sites

Type of waste	Unit	12 month period	Est. total activity error, %
Spent resins, sludges, etc.	m ³	3.60E+01	± 25
	curies	9.41E+02	
Dry compressible waste, contaminated equipment, etc.	m ³	7.28E+01	± 25
	curies	1.11E+00	
Irradiated components, control rods, etc.	m ³	0	NA
	curies	0	
Other	m ³	0	NA
	curies	0	

Radioactive solid waste shipments from Fermi 2 in 2007 (to either disposal or to intermediate processors) are summarized in the following table:

Table 7 - Solid Waste Shipments

Type of shipment/ solidification process	Number of shipments	Mode of transportation	Destination
Spent resin, sludges, etc.	8	tractor trailer with cask, and rail	Chem Nuclear, Barnwell, SC Duratek, Oak Ridge, TN
Dry compressible waste, contaminated equipment, etc.	22	tractor trailer	Duratek, Oak Ridge, TN Envirocare, Clive, UT
Used oil	0	NA	NA
Mixed waste	0	NA	NA

The ODCM was revised twice in 2007. A complete copy of the current revision is included as Appendix H.

The OSSF SPING gaseous effluent monitor was out of service from 9/30/07 to 11/13/07 due to its being on temporary power during a refueling outage. This SPING was otherwise functional and the alternate method of effluent sampling at the OSSF stack was in effect throughout this period. Also, the liquid radwaste effluent monitor has been out of service since March 2007. It is awaiting a preventive maintenance procedure which has been delayed due to the lack of a required radioactive source; performance of this procedure is scheduled for April 2008. There has been no impact due to this condition since there have been no liquid radioactive discharges at Fermi 2 since 1994; if such a

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discharge became necessary, the ODCM provides an alternate method which does not involve this monitor.

No outside temporary tank exceeded the 10 curie content limit (excluding tritium and dissolved or entrained noble gases) in 2007. Also, there were no major changes to radioactive waste systems placed in service in 2007; however a new radwaste evaporator has been installed and is currently being tested.

Radiological Environmental Monitoring Program Results

Direct Radiation Monitoring

Radiation is a normal component of the environment resulting primarily from natural sources, such as cosmic radiation and naturally occurring radionuclides; and to a lesser extent, from manmade sources such as fallout from past nuclear weapons testing. The earth is constantly bombarded by cosmic radiation in the form of high energy gamma rays and particulates. The earth's crust also contains natural radioactive material, such as uranium and potassium-40, which contributes to the background radiation. Direct radiation monitoring primarily measures ionizing radiation from cosmic and terrestrial sources.

Thermoluminescent Dosimeters

Detroit Edison uses thermoluminescent dosimeters (TLDs) to measure direct gamma radiation in the environs of Fermi 2. In this process, ionizing radiation interacts with a phosphor which is the sensitive material in the TLD. Energy is trapped in the TLD material and can be stored for several months or years. This provides an excellent method to measure the dose received over long periods of time. The energy that was stored in the TLD as a result of interaction with radiation is released and measured by a controlled heating process in a calibrated reading system. As the TLD is heated, the phosphor releases the stored energy in the form of light. The amount of light detected is directly proportional to the amount of radiation to which the TLD was exposed. This reading process then rezeros the TLD and prepares it for reuse.

Fermi 2 has 67 TLD locations within a fifteen mile radius of the plant. Of the 67 TLD locations, 16 are located on-site and are not used for comparison with the control locations. These 16 TLDs are affected by Hydrogen Water Chemistry's sky shine and are not representative of off-site dose. The TLDs are thoroughly tested to comply with NRC Regulatory Guide 4.13 and American National Standards Institute's (ANSI) publication N545-1975, which assure accurate measurements under varying environmental conditions before being placed in the field. Indicator TLDs are located within a ten mile radius of the plant and control TLDs are located at a distance that is outside the influence of the plant. While in the field, TLDs are exposed to background radiation and, if measurable, gaseous effluents and direct radiation from Fermi 2. Environmental TLDs are exchanged and processed on a quarterly basis. The TLDs' data are reported in terms of milliroentgen per standard quarter (mR/std qtr), with a standard quarter being 91 days. Regardless of the duration of TLD exposure in the field, the data have been normalized to a standard quarter to allow convenient intercomparisons with the net value.

In 2007, the average exposure for TLDs at all off-site indicator locations was 14.6 mR/std qtr and for all control locations was 13.7 mR/std qtr. These exposures are consistent with preoperational and past operational measurements as shown in Figure 1.

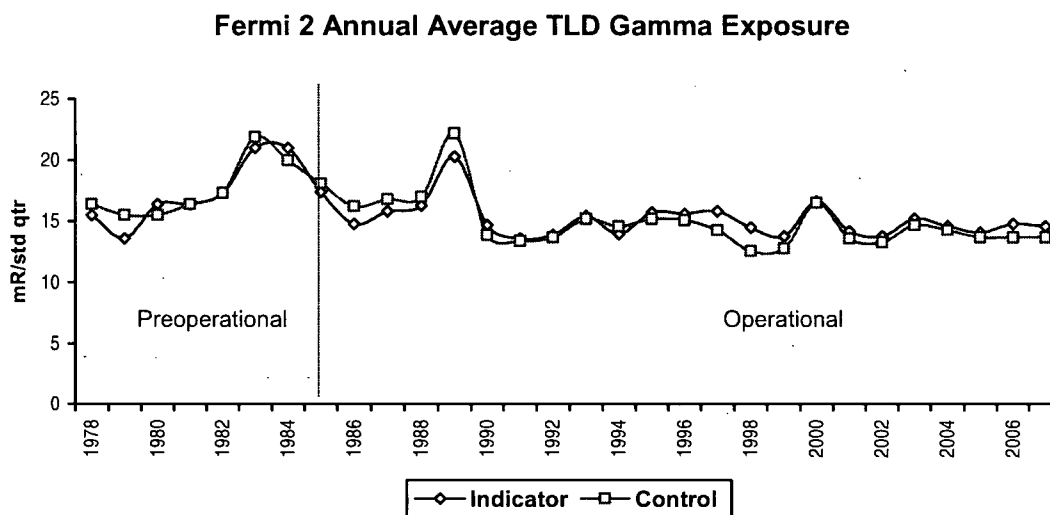


Figure 1 - Fermi 2 Annual Average TLD Gamma Exposure: The similarity between indicator and control results demonstrates that the operation of Fermi 2 has not caused any abnormal gamma exposure.

Atmospheric Monitoring

A potential exposure pathway to people is inhalation of airborne radioactive materials. Detroit Edison continuously samples the ambient air surrounding Fermi 2 for radioactivity. Air sampling began in 1979 during the preoperational program. At each sampling location, a mechanical air sampler is used to draw a continuous volume of air through two filters designed to collect particulates and radioiodines. Air samples are collected weekly and analyzed for gross beta radiation and iodine-131 gamma radiation. The particulate filters for each sampling location are combined on a quarterly basis to form a “composite sample” and are analyzed for gamma emitting radionuclides. There are four indicator sampling locations which were selected based on an evaluation of the predominant wind directions. A fifth sampling location is approximately fourteen miles west of the plant and is considered to be in a location unaffected by the operation of the plant. This is used as the control location.

Air Sampling

On October 16, 1980, the People's Republic of China conducted an atmospheric nuclear weapon test. The fallout from this test was detected in Fermi 2 preoperational environmental air samples in 1981 (see Figure 2). The average gross beta for 1981 was 1.60E-1 pCi/cubic meter for indicator samples and 2.40E-1 pCi/cubic meter for control samples which was a factor of ten times greater than background gross beta. Gamma spectroscopic analyses of the particulate filters indicated cesium-137, cerium-141, cerium-144, ruthenium-103, ruthenium-106, zirconium-95, niobium-95, manganese-54, and antimony-125 in the atmosphere as a result of this test. In 1986, as shown in Figure 2, there was a slight increase in gross beta activity and a 2.70E-1 pCi/cubic meter "spike" in the iodine-131 activity. These elevated levels in 1986 are attributed to the nuclear accident at Chernobyl on April 26, 1986. For all other years, the iodine-131 activity was below the lower limit of detection (LLD) of 7.0E-2 pCi/cubic meter.

During 2007, two hundred and sixty (260) particulate air filters and charcoal cartridges were collected and analyzed for gross beta activity and iodine-131 respectively. The average gross beta for indicator samples was 2.70E-2 pCi/cubic meter and 2.93E-2 pCi/cubic meter for control samples. None of the charcoal filters collected showed detectable levels of iodine-131. The following table contains the annual average gross beta results of all five sample locations for 2007.

**2007 Average Gross Beta Concentrations in Air Particulates
(pCi/m³)**

Table 8

Station	Description (sector/distance)	Annual Average
API-1 (I)	Estral Beach (NE/1.4 mi.)	2.44E-2
API-2 (I)	Site Boundary (NNW/0.6 mi.)	3.22E-2
API-3 (I)	Site Boundary (NW/0.6 mi.)	2.82E-2
API-4 (C)	North Custer Rd. (W/14 mi.)	2.93E-2
API-5 (I)	Site Boundary (S/1.2 mi.)	2.31E-2

(I) = Indicator Station (C) = Control Station

Twenty (20) quarterly particulate filter composites were prepared and analyzed for gamma emitting radionuclides. Naturally occurring beryllium-7 was detected in both indicator and control samples. One indicator sample detected naturally occurring potassium-40.

In conclusion, the atmospheric monitoring data are consistent with preoperational and prior operational data and show no adverse long-term trends in the environment attributable to operation of Fermi 2 as illustrated in Figures 2 and 3.

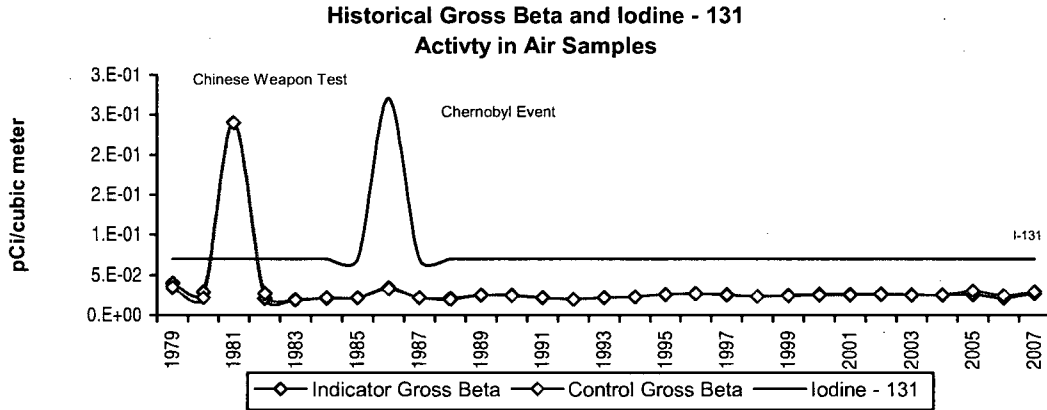


Figure 2 - Historical Gross Beta and Iodine-131 Activity in Air Samples; The similarity between indicator and control gross beta results demonstrates that the operation of Fermi 2 has had no adverse long-term trends in the environment. The lower limit of detection (LLD) for iodine-131 is 0.07 pCi/cubic meter.

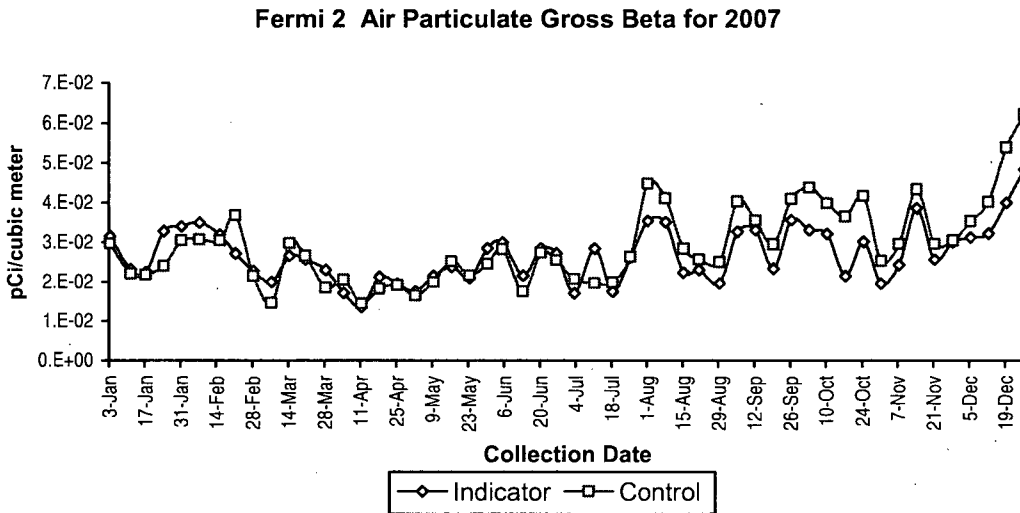


Figure 3 - Fermi 2 Air Particulate Gross Beta for 2007; the concentration of beta emitting radionuclides in airborne particulates samples was essentially identical at indicator and control locations. Gross beta activity varies throughout the year and is primarily an effect of seasonal precipitation.

Terrestrial Monitoring

Radionuclides released to the atmosphere may deposit on soil and vegetation, and therefore, may eventually be incorporated into the human food chain. To assess the impact of Fermi 2 operations to humans from the ingestion pathway, samples of milk, green leafy vegetables, and groundwater are collected and analyzed for radioactivity. The following sections discuss the type and frequency of terrestrial sampling, analyses performed, and a comparison of 2007 data to previous operational and preoperational data.

Milk Sampling

The milk sampling portion of the REMP is perhaps one of the most important aspects of the program. This is because a major pathway in the human food chain is the consumption of milk from grazing animals (dairy cows or goats) due to biological concentration and the short turn around time in this pathway. Milk is collected from one indicator location and one control location semimonthly when animals are in the pasture, and monthly when the animals are on stored feed. The milk is analyzed for iodine-131, gamma emitting radionuclides, and strontium-89/90. At times when milk samples are not available, grass samples are collected at both the control milk sample location and the location where milk is not available. Grass samples are analyzed for iodine-131 and other gamma emitting radionuclides.

Milk sampling began in 1979 during the preoperational program. During this time period, milk samples were analyzed for iodine-131 and other gamma emitting radionuclides. Cesium-137 and naturally occurring potassium-40 were the only radionuclides detected in milk samples during the preoperational program. The cesium-137 concentration averaged $3.60\text{E}+0$ pCi/liter and is due to past atmospheric nuclear weapons testing. In 1986, after the nuclear accident at Chernobyl, iodine-131 and cesium-137 were detected in both indicator and control milk samples. The average concentration for iodine-131 was $3.70\text{E}+0$ pCi/liter and $6.60\text{E}+0$ pCi/liter for cesium-137.

The analysis for strontium-89/90 began in 1988, and strontium-90 is routinely detected in both indicator and control milk samples because of past atmospheric nuclear weapons testing.

During 2007, thirty four (34) milk samples were collected and analyzed for iodine-131, gamma emitting radionuclides, and strontium-89/90. No iodine-131 was detected in any of the samples. Strontium-90 was detected in one indicator milk sample and is due to fallout from past atmospheric weapons testing (see Figure 4).

The indicator sample had a strontium-90 concentration of 1.24E+0 pCi/liter. Naturally occurring potassium-40 was detected in both indicator and control samples. During 2007, no grass samples were scheduled or collected for the REMP program.

In 1970, the concentration of strontium-90 in Monroe County milk was 6.00E+0 pCi/liter according to the Michigan Department of Health's "Milk Surveillance," Radiation Data and Reports, Vol. 11-15, 1970-1974. Figure 4 shows the calculated radiological decay curve for the 1970 concentration of strontium-90 and the average concentrations since 1988. This graph illustrates that the inventory of strontium-90 in the local environment is decreasing with time and closely follows the calculated decay curve. This supports the fact that the inventory of strontium-90 in the environment is due to fallout from past atmospheric nuclear weapons testing and not the operation of Fermi 2.

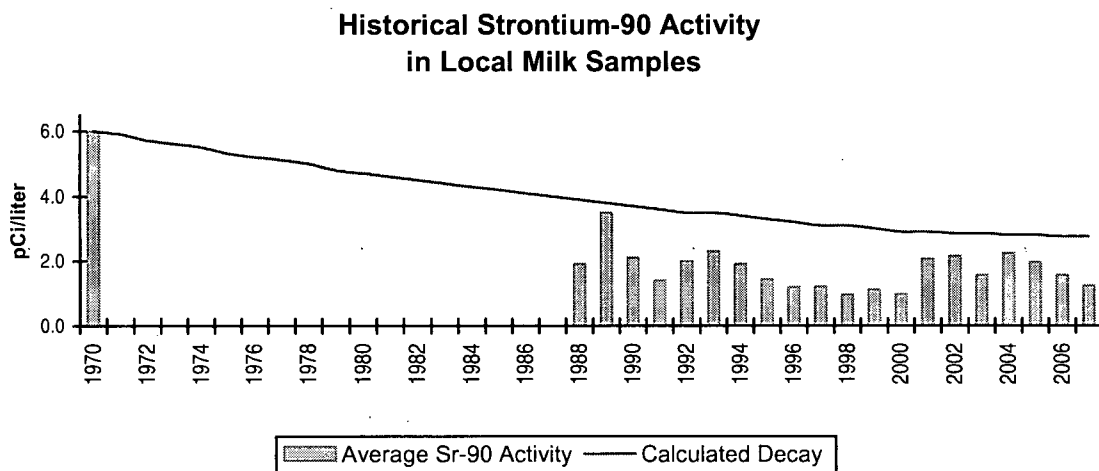


Figure 4 - Historical Strontium-90 Activity in Local Milk Samples; the concentration of strontium-90 in local milk samples is decreasing with time and is below the calculated decay curve. This supports the fact that strontium-90 in local milk is due to fallout from past atmospheric nuclear weapons testing and not the operation of Fermi 2.

Groundwater Sampling

In areas not served by municipal water systems, water supplies for domestic use are generally obtained from private wells. The network of private wells presently in use forms the source of water for domestic and livestock purposes in farms and homes west and north of the site. However, with the construction of new water plants and distribution systems, the water use trend in the area is from groundwater to surface water.

Groundwater is collected on a quarterly basis from four wells surrounding Fermi 2. The groundwater is analyzed for gamma emitting radionuclides and tritium. Sampling location GW-4, which is located approximately 0.6 miles west northwest, is designated as the control location because it is up-gradient and is least likely to be affected by the operation of the plant. The other three sampling locations are down-gradient from Fermi 2 and designated as indicator locations.

Groundwater sampling began in 1987, during the operational period of the REMP program. From 1987 to 1996, naturally occurring potassium-40, cesium-137, and tritium were detected in both indicator and control samples. The average concentration was $7.71\text{E}+0$ pCi/liter for cesium-137 and $1.50\text{E}+2$ pCi/liter for tritium. The presence of cesium-137 and tritium in groundwater samples is due to fallout from past atmospheric nuclear weapons testing leaching into the soil and becoming incorporated into the groundwater. From 1997 to 2006, no activity was detected in groundwater samples.

In 2007, sixteen (16) groundwater samples were collected and analyzed for gamma emitting radionuclides and tritium. One control sample detected naturally occurring potassium-40, no other activity was detected in groundwater samples.

Garden Sampling

Fermi 2 collects samples of broad leaf vegetables from indicator locations identified by the annual Land Use Census. Samples are also collected at a control location that is at a distance and direction which is considered to be unaffected by plant operations. Samples are collected once a month during the growing season (June through September) and are analyzed for iodine-131 and other gamma emitting radionuclides.

Vegetable sampling started in 1982. During the preoperational period from 1982 to 1985, only naturally occurring potassium-40 was detected in both indicator and control vegetable samples. During the operational period from 1985 to 1990 and 1994 to 1995, only naturally occurring potassium-40 was detected in both indicator and control vegetable samples. However, in 1991, 1992, and 1993, cesium-137 was detected in one indicator sample each year and had an average concentration of $1.2\text{E}+1$ pCi/kilogram.

Cesium-137 may become incorporated into plants by either uptake from the soil or direct deposition on foliar surfaces. Since cesium-137 is normally not detected in gaseous effluent samples from Fermi 2, and there have been no recent atmospheric weapons testing or nuclear accidents, the incorporation of cesium-137 by direct deposition is highly unlikely. The most probable source of cesium-137 in vegetable samples is the uptake of previously deposited cesium-137, which has leached into the soil. This cesium activity is attributed to fallout from past atmospheric weapons testing and to the nuclear accident at Chernobyl.

During 2007, twelve (12) vegetable samples were collected and analyzed for iodine-131 and other gamma emitting radionuclides. No iodine-131 was detected in vegetable samples during 2007. The only gamma emitting radionuclides detected were naturally occurring potassium-40 and beryllium-7 in both indicator and control samples.

Terrestrial monitoring results for 2007 of milk, groundwater and leafy garden vegetable samples, showed only naturally occurring radioactivity and radioactivity associated with fallout from past atmospheric nuclear weapons testing. The radioactivity levels detected were consistent with levels measured prior to the operation of Fermi 2 and no radioactivity attributable to activities at Fermi 2 was detected in any terrestrial samples. In conclusion, the terrestrial monitoring data show no adverse long-term trends in the terrestrial environment.

Aquatic Monitoring

Lake Erie, on which Fermi 2 borders, is used as a source for drinking water, as well as for recreational activities such as fishing, swimming, sunbathing, and boating. For this reason, Lake Erie and its tributaries are routinely monitored for radioactivity.

The aquatic monitoring portion of the REMP consists of sampling raw municipal drinking water, surface water, lake sediments, and fish for the presence of radioactivity. The following sections discuss the type and frequency of aquatic sampling, analyses performed, and a comparison of 2007 data to previous operational and preoperational data.

Drinking Water Sampling

Detroit Edison monitors drinking water at one control location and one indicator location using automatic samplers. The automatic samplers collect samples, known as aliquots, at time intervals that are very short (hourly) relative to the sample collection period (monthly) in order to assure that a representative sample is obtained. Indicator water samples are obtained at the Monroe water intake located approximately 1.1 miles south of the plant. Detroit municipal water is used for the control samples and is obtained at the Allen Park water intake located approximately 18.6 miles north of the plant. Drinking water samples are collected on a monthly basis and analyzed for gross beta, strontium-89/90, and gamma emitting radionuclides. The monthly samples for each location are combined on a quarterly basis and analyzed for tritium activity.

In late 1980, as shown in Figure 5, an atmospheric nuclear weapon test was conducted by the People's Republic of China. As a result of this test, the average gross beta for 1981 was $9.80\text{E}+0$ pCi/liter for water samples. Figure 5 also shows that, except for the Chinese weapons testing, the historic drinking water sample data are below or slightly above the lower limit of detection ($4.00\text{E}+0$ pCi/liter) required by US Environmental Protection Agency (USEPA) National Interim Primary Drinking Water regulations. Even during the Chinese weapons testing, the drinking water samples did not exceed the USEPA maximum allowable criteria of $5.00\text{E}+1$ pCi/liter gross beta. In 1980 and 1983, cesium-137 was detected in drinking water samples at levels ranging from $5.40\text{E}+0$ pCi/liter to $1.90\text{E}+1$ pCi/liter. Tritium was also detected during the preoperational program and had an average of $3.25\text{E}+2$ pCi/liter. The presence of cesium-137 and detectable levels of tritium in these water samples is due to fallout from past atmospheric nuclear weapons testing and naturally occurring tritium.

From 1985 to 2006, the average annual gross beta activity for indicator samples was $3.48\text{E}+0$ pCi/liter and $2.90\text{E}+0$ pCi/liter for control samples. The analysis for strontium-89/90 began in 1988, and strontium-90 has been detected in both indicator and control samples. The average strontium-90 activity for indicator samples was $7.25\text{E}-1$ pCi/liter and $7.56\text{E}-1$ pCi/liter for control samples during this time period. Tritium was also detected in both indicator and control drinking water samples during this time period. The average tritium activity for indicator samples was $2.52\text{E}+2$ pCi/liter and $2.60\text{E}+2$ pCi/liter for control samples. The presence of strontium-90 and detectable levels of tritium in these water samples is due to fallout from past atmospheric nuclear weapons testing and naturally occurring tritium.

In 2007, twenty-four (24) drinking water samples were collected and analyzed for gross beta, gamma emitting radionuclides, strontium-89/90, and tritium. The average gross beta for indicator samples was $5.30\text{E}+0$ and $5.55\text{E}+0$ pCi/liter for control samples. No gamma emitting radionuclides or strontium-89/90 activity was detected in drinking water samples during 2007. Eight (8) quarterly composite drinking water samples were prepared and analyzed for tritium. No tritium activity was detected in drinking water samples during 2007.

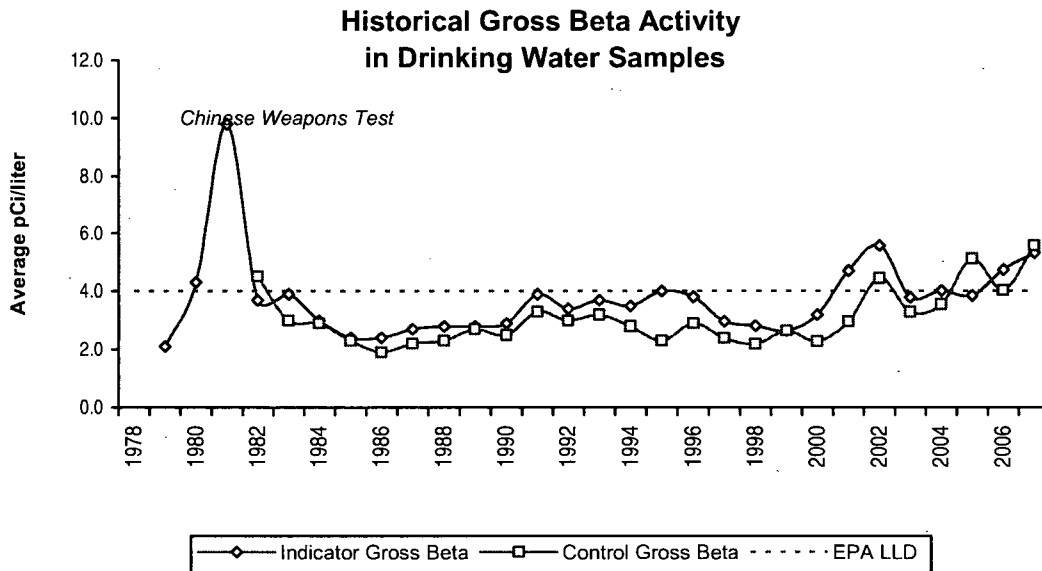


Figure 5 - Historical Gross Beta Activity in Drinking Water Samples; Since 1982, the annual concentrations of beta emitting radionuclides in drinking water samples collected from indicator locations have been consistent with those from control locations. This shows that Fermi 2 has had no measurable radiological impact on local drinking water.

Surface Water Sampling

Detroit Edison monitors surface water at two locations using automatic samplers. As with drinking water, surface water samples are collected at time intervals that are very short (hourly) relative to the sample collection period (monthly) in order to assure obtaining a representative sample. Indicator surface water samples are obtained at the Fermi 2 General Service Water building, located approximately 0.3 miles south southeast from Fermi 2. The control surface water samples are obtained from Trenton Channel Power Plant's cooling water intake on the Detroit River, which is approximately 11.7 miles north northeast of Fermi 2. Surface water samples are collected on a monthly basis and analyzed for strontium-89/90 and gamma emitting radionuclides. The monthly samples for each location are combined on a quarterly basis to form a quarterly composite sample and are analyzed for tritium.

Surface water sampling began in 1979, and the samples were analyzed for gamma emitting radionuclides and tritium. During this preoperational program, no gamma emitting radionuclides, except for naturally occurring potassium-40, were detected. Tritium was detected in both indicator and control samples during this time period and had an average concentration of $3.15\text{E}+2$ pCi/liter. This tritium activity represents the background concentration due to naturally occurring tritium and tritium produced during past atmospheric nuclear weapons testing.

From 1985 to 2006, as part of the operational program, surface water samples were analyzed for gamma emitting radionuclides and tritium. The analysis for strontium-89/90 did not begin until 1988, and strontium-90 was detected in both indicator and control samples. The average strontium-90 concentration for this time period was $1.13\text{E}+0$ pCi/liter. In 1990, two indicator samples showed detectable activity for cesium-137 at an average concentration of $1.20\text{E}+1$ pCi/liter. The presence of cesium-137 and strontium-90 in these water samples is due to fallout from past atmospheric nuclear weapons testing. Tritium was detected in both indicator and control surface water samples during this time period at a concentration of $2.31\text{E}+2$ pCi/liter. This tritium activity is consistent with background levels measured during the preoperational program.

In 2007, twenty-six (26) surface water samples were collected and analyzed for gamma emitting radionuclides and strontium-89/90. From these samples, eight (8) quarterly composite samples were prepared and analyzed for tritium. During 2007, no gamma emitting radionuclides, strontium-89/90 or tritium was detected in surface water samples.

Sediment Sampling

Sediments often act as a sink (temporary or permanent) for radionuclides, but they may also become a source, as when they are resuspended during periods of increased turbulence or are dredged and deposited elsewhere. Sediment, in the vicinity of the liquid discharge point, represents the most likely site for accumulation of radionuclides in the aquatic environment, and with long-lived radionuclides, a gradual increase in radioactivity concentration would be expected over time if discharges occur. Sediment, therefore, provides a long-term indication of change that may appear in other sample media (i.e., water and fish samples).

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Lake Erie shoreline and bottom sediments from five locations are collected on a semiannual basis (Spring and Fall) and are analyzed for gamma emitting radionuclides and strontium-89/90. There is one control location and four indicator locations. The control sample is collected near the Trenton Channel Power Plant's cooling water intake. The indicator samples are collected at Estral Beach, near the Fermi 2 liquid discharge area, the shoreline at the end of Pointe Aux Peaux, and Indian Trails Community Beach.

During the preoperational program, there was not a control location, and indicator samples were analyzed for gamma emitting radionuclides. During the preoperational program, except for naturally occurring radionuclides, only cesium-137 was detected in sediment samples. For this time period, the average cesium-137 concentration was $3.27\text{E}+2$ pCi/kilogram. The presence of cesium-137 in these sediment samples is due to fallout from past atmospheric nuclear weapons testing.

From 1985 to 2006, cesium-137, strontium-90, and naturally occurring radionuclides were detected in sediment samples. The average cesium-137 concentration was $1.29\text{E}+2$ pCi/kilogram for all samples. The analysis for strontium-89/90 began in 1988, and strontium-90 has been routinely detected at similar concentrations in both indicator and control samples. The average strontium-90 activity for indicator samples was $1.80\text{E}+2$ pCi/kilogram and $1.98\text{E}+2$ pCi/kilogram for control samples. The presence of cesium-137 and strontium-90 in these sediment samples is due to fallout from past atmospheric nuclear weapons testing.

In 1990 and 1991, the Spring samples taken at the Fermi 2 liquid discharge line (Location S-2) showed activity for plant related radionuclides (manganese-54, cobalt-58, cobalt-60, and zinc-65) and was determined to be a result of liquid effluent from Fermi 2. The sample results were well below any regulatory reporting limits and were consistent with the activity released from the plant in liquid effluents and the dose impact was negligible.

In 2007, ten (10) sediment samples were collected and analyzed for gamma emitting radionuclides and strontium 89/90. Cesium-137 was detected in one control sample with a concentration of $4.10\text{E}+1$ pCi/kilogram. Cesium-137 was not detected in any indicating sediment samples. The presence of cesium-137 in sediment samples is due to fallout from past atmospheric nuclear weapons testing. Naturally occurring radionuclide potassium-40 was also detected in sediment samples for this sampling period.

Historical Cesium-137 Activity in Sediment Samples

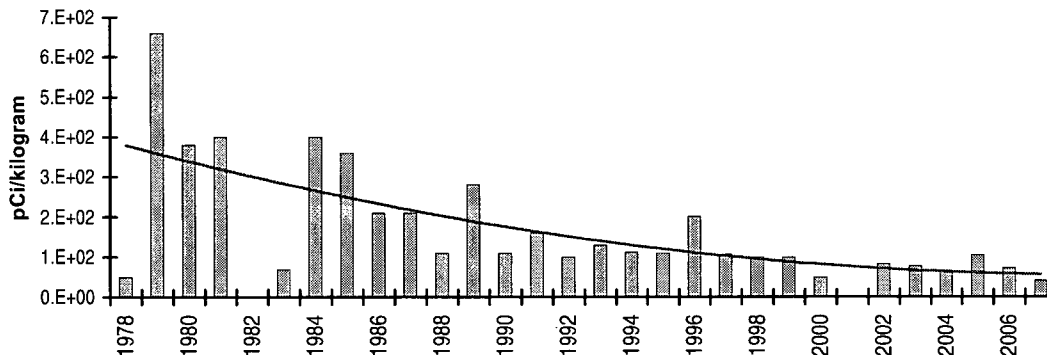


Figure 6 - Historical Cesium-137 Activity in Sediment Samples; As the calculated trend shows, the concentration of cesium-137 in Lake Erie sediments is decreasing with time. This supports the fact that cesium-137 in Lake Erie sediments is due to fallout from past atmospheric nuclear weapons testing and not the operation of Fermi 2.

Figure 6 shows the historical concentration of cesium-137 in sediment samples from 1978 to 2007. Using the data from these years, and the statistical method of least squares, an exponential curve can be calculated that represents the cesium-137 concentration in sediment. This curve has a negative slope which indicates the overall concentration of cesium-137 in the environment is decreasing with time. This supports the fact that the inventory of cesium-137 in the environment is due to fallout from past atmospheric nuclear weapons testing and not from the operation of Fermi 2.

Fish Sampling

Samples of fish are collected from Lake Erie at three locations on a semiannual basis. There are two control locations and one indicator location. The two control locations are offshore of Celeron Island and in Brest Bay. The indicator location is approximately 1200 feet offshore of the Fermi 2 liquid effluent discharge. Edible portions of the fish are analyzed for gamma emitting radionuclides and strontium-89/90.

During the preoperational program, fish samples were analyzed for gamma emitting radionuclides. Only cesium-137 and naturally occurring potassium-40 were detected during this time period. The average concentration of cesium-137 for indicator samples was 3.53E+1 pCi/kilogram and 4.20E+1 pCi/kilogram for control samples. The presence of cesium-137 in these fish samples is due to fallout from past atmospheric nuclear weapons testing.

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From 1985 to 2006, cesium-137 and naturally occurring potassium-40 were detected in fish samples. The average cesium-137 concentration for indicator samples was $3.82E+1$ pCi/kilogram and $3.92E+1$ pCi/kilogram for control samples. The analysis for strontium-89/90 began in 1990, and strontium-90 has been routinely detected at similar concentrations in both indicator and control samples. The average strontium-90 concentration for indicator samples was $3.84E+1$ pCi/kilogram and $3.15E+1$ pCi/kilogram for control samples. The presence of cesium-137 and strontium-90 in these fish samples is due to fallout from past atmospheric nuclear weapons testing.

In 2007, twenty-eight (28) fish samples were collected and analyzed for gamma emitting radionuclides and strontium-89/90. Only naturally occurring potassium-40 was detected in both control and indicator fish samples for 2007.

Aquatic monitoring results for 2007 of water, sediment, and fish showed only naturally occurring radioactivity and radioactivity associated with fallout from past atmospheric nuclear weapons testing and were consistent with levels measured prior to the operation of Fermi 2. In conclusion, no radioactivity attributable to activities at Fermi 2 was detected in any aquatic samples during 2007 and no adverse long-term trends are shown in the aquatic monitoring data.

Land Use Census

The Land Use Census is conducted in accordance with the Fermi 2 Offsite Dose Calculation Manual (ODCM), control 3.12.2, and satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50. This census identifies changes in the use of unrestricted areas to permit modifications to monitoring programs for evaluating doses to individuals from principal pathways of exposure. The pathways of concern are listed below:

- **Inhalation Pathway** - Internal exposure as a result of breathing radionuclides carried in the air.
- **Ground Exposure Pathway** - External exposure from radionuclides deposited on the ground.
- **Plume Exposure Pathway** - External exposure directly from a plume or cloud of radioactive material.
- **Vegetation Pathway** - Internal exposure as a result of eating vegetables which have absorbed deposited radioactive material or which have absorbed radionuclides through the soil.
- **Milk Pathway** - Internal exposure as a result of drinking milk which may contain radioactive material as a result of dairy animals grazing on a pasture contaminated by radionuclides.

The Land Use Census is conducted during the growing season and is used to identify, within a radius of 5 miles, the location of the nearest residences, milk animals, meat animals, and gardens (greater than 50 square meters and containing broad leaf vegetation) in each of 16 meteorological sectors surrounding Fermi 2. Gardens greater than 50 square meters are the minimum size required to produce the quantity (26 kg/year) of leafy vegetables assumed in NRC Regulatory Guide 1.109 for consumption by a child. To determine this minimum garden size, the following assumptions were made: (1) 20% of the garden is used for growing broad leaf vegetation (i.e., lettuce and cabbage); and (2) a vegetation yield of 2 kg/square meter.

2007 Land Use Census Results

The Land Use Census is conducted in accordance with ODCM control 3.12.2 and satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50. This census identifies changes in the use of unrestricted areas to permit modifications to monitoring programs for evaluating doses to individuals from principal pathways of exposure. The annual Land Use Census is conducted during the growing season and is used to identify, within a radius of 5 miles, the location of the closest residences, milk animals, meat animals, and gardens in each of the 11 land based meteorological sectors surrounding Fermi 2.

The 2007 Land Use Census was performed during the month of August. The 2007 census data were obtained with the use of a hand-held Global Positioning System (GPS) and aerial imagery using Google Earth. These data were compared to the 2006 data to determine any significant changes in the use of the land. The results of the census are tabulated in Tables 9 – 12 of this report.

No significant changes in the land use between 2006 and 2007 were found that would require changing the location of the “maximum exposed individual”. There were no real changes in the category of closest residences, although satellite imagery was used to enhance the coordinates in the West North West sector. There were slight changes in three meteorological sectors in the category of closest gardens. See Table 2 for these changes. The “maximum exposed individual” is located in the West-North-West sector and at one time participated in the REMP program. In the past few years this location did not have a garden, but in 2007 a garden was planted at this location. In the category of closest milk locations, there was one change; the goat in the North sector was not identified. All milk locations that were identified are not pets and not use for human consumption. There were three changes found in the category of closest meat locations. Beef and sheep were identified in the North sector, a new beef location was identified in North-West sector, and in West-South-West sector the past beef location was not identified. As with past surveys, this census identified new residential housing construction that shows a continuing trend of converting agricultural land to other uses in the area surrounding Fermi 2.

As stated above, there were no significant changes in the 2007 land use that would require changing the location of the “maximum exposed individual”. For that reason, the location of “maximum exposed individual” remains the same and is described as follows:

Pathway	Sector	Azimuth (degrees)	Distance (miles)	Age Group	Maximum Organ
Ingestion (vegetation)	WNW	300.6	0.72	Child	Thyroid

2007 LAND USE CENSUS
Closest Residences

Table 9

Sector	Year	Azimuth (degrees)	Distance (miles)	Change (miles)
N	2006	8.9	1.11	0.00
	2007	8.9	1.11	
NE	2006	34.7	1.10	0.00
	2007	34.7	1.10	
NNE	2006	16.6	1.08	0.00
	2007	16.6	1.08	
NNW	2006	334.9	1.09	0.00
	2007	334.9	1.09	
NW	2006	309.7	1.07	0.00
	2007	309.7	1.07	
S	2006	169.6	1.03	0.00
	2007	169.6	1.03	
SSW	2006	200.1	1.12	0.00
	2007	200.1	1.12	
SW	2006	229.3	1.26	0.00
	2007	229.3	1.26	
W	2006	259.2	1.19	0.00
	2007	259.2	1.19	
WNW(a)	2006	301.9	0.69	0.02
	2007	302.3	0.71	
WSW	2006	236.3	1.39	0.00
	2007	236.3	1.39	

(a) = Location of "maximum exposed individual"

2007 LAND USE CENSUS
Closest Gardens

Table 10

Sector	Year	Azimuth (degrees)	Distance (miles)	Change (miles)
N	2006	0.6	1.64	0.49
	2007	358.5	2.13	
NE	2006	38.9	1.98	0.00
	2007	38.9	1.98	
NNE	2006	33	1.74	0.17
	2007	30.6	1.91	
NNW	2006	326.7	1.40	0.00
	2007	326.7	1.40	
NW	2006	313.5	1.08	0.00
	2007	313.5	1.08	
S	2006	No Data		
	2007	No Data		
SSW	2006	195.9	1.50	0.00
	2007	195.9	1.50	
SW	2006	No Data		
	2007	No Data		
W	2006	266.7	1.70	0.00
	2007	266.7	1.70	
WNW(a)	2006	300.3	1.78	-1.06
	2007	300.6	0.72	
WSW	2006	250.5	2.38	0.00
	2007	250.5	2.38	

(a) = Location of "maximum exposed individual"

2007 LAND USE CENSUS
Milk Locations

Table 11

Sector	Year	Azimuth (degrees)	Distance (miles)	Change (miles)	Type
N	2006	1.2	1.80		Goat
	2007	No Data			
NE	2006	No Data			
	2007	No Data			
NNE	2006	No Data			
	2007	No Data			
NNW	2006	329.4	3.02		Goat
	2007	329.4	3.02	0.00	Goat
NW	2006	No Data			
	2007	No Data			
S	2006	No Data			
	2007	No Data			
SSW	2006	No Data			
	2007	No Data			
SW	2006	No Data			
	2007	No Data			
W	2006	No Data			
	2007	No Data			
WNW	2006	297.4	2.38		Goat
	2007	297.4	2.38	0.00	Goat
WSW	2006	No Data			
	2007	No Data			

**2007 LAND USE CENSUS
Closest Meat Locations**

Table 12

Sector	Year	Azimuth (degrees)	Distance (miles)	Change (miles)	Type
N	2006	No Data			
	2007	9.6	4.29	4.29	Beef/Sheep
NE	2006	No Data			
	2007	No Data			
NNE	2006	No Data			
	2007	No Data			
NNW	2006	338.2	4.36		Sheep
	2007	338.2	4.36	0.00	Sheep
NW	2006	No Data			
	2007	321.4	3.02	3.02	Beef
S	2006	No Data			
	2007	No Data			
SSW	2006	No Data			
	2007	No Data			
SW	2006	No Data			
	2007	No Data			
W	2006	No Data			
	2007	No Data			
WNW	2006	No Data			
	2007	No Data			
WSW	2006	251.1	2.96		Beef
	2007	No Data		-2.96	

Appendix A
Sampling Locations

Direct Radiation Sample Locations

Table A-1

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
T1	NE/38°	1.3 mi.	Estral Beach, Pole on Lakeshore 23 Poles S of Lakeview. (Special Area)	Q	I
T2	NNE/22°	1.2 mi.	Pole at termination of Brancheau St. (Special Area)	Q	I
T3	N/9°	1.1 mi.	Pole, NW corner of Swan Boat Club fence. (Special Area)	Q	I
T4	NNW/337°	0.6 mi.	Site boundary and Toll Rd. on Site fence by API #2.	Q	I
T5	NW/313°	0.6 mi.	Site boundary and Toll Rd. on Site fence by API #3.	Q	I
T6	WNW/294°	0.6 mi.	On Site fence at south end of N. Bullet Rd.	Q	I
T7	W/270°	14.0 mi.	Pole, at Michigan Gas substation on N. Custer Rd., 0.66 miles west of Doty Rd.	Q	C
T8	NW/305°	1.9 mi.	Pole on Post Rd. near NE corner of Dixie Hwy. and Post Rd.	Q	I
T9	NNW/334°	1.5 mi.	Pole, NW corner of Trombley and Swan View Rd.	Q	I
T10	N/6°	2.1 mi.	Pole, S side of Massarant-2 poles W of Chinavare.	Q	I

I = Indicator

C = Control

O = On-site

Q = Quarterly

Direct Radiation Sample Locations (Table A-1 continued)

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
T11	NNE/23°	6.2 mi.	Pole, NE corner of Milliman and Jefferson.	Q	I
T12	NNE/29°	6.3 mi.	Pointe Mouille Game Area Field Office, Pole near tree, N area of parking lot.	Q	I
T13	N/356°	4.1 mi.	Labo and Dixie Hwy. Pole on SW corner with light.	Q	I
T14	NNW/337°	4.4 mi.	Labo and Brandon Pole on SE corner near RR.	Q	I
T15	NW/315°	3.9 mi.	Pole, behind building at the corner of Swan Creek and Mill St.	Q	I
T16	WNW/283°	4.9 mi.	Pole, SE corner of War and Post Rd.	Q	I
T17	W/271°	4.9 mi.	Pole, NE corner of Nadeau and Laprad near mobile home park.	Q	I
T18	WSW/247°	4.8 mi.	Pole, NE corner of Mentel and Hurd Rd.	Q	I
T19	SW/236°	5.2 mi.	Fermi siren pole on Waterworks Rd. NE corner of intersection - Sterling State Park Rd. Entrance Drive/Waterworks.	Q	I
T20	WSW/257°	2.7 mi.	Pole, S side of Williams Rd, 9 poles W of Dixie Hwy. (Special Area)	Q	I
T21	WSW/239°	2.7 mi.	Pole, N side of Pearl at Parkview Woodland Beach. (Special Area)	Q	I

I = Indicator

C = Control

O = On-site

Q = Quarterly

Direct Radiation Sample Locations (Table A-1 continued)

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
T22	S/172°	1.2 mi.	Pole, N side of Pointe Aux Peaux 2 poles W of Long - Site Boundary.	Q	I
T23	SSW/195°	1.1 mi.	Pole, S side of Pointe Aux Peaux 1 pole W of Huron next to Vent Pipe - Site Boundary.	Q	I
T24	SW/225°	1.2 mi.	Fermi Gate along Pointe Aux Peaux Rd. on fence-wire W of gate Site Boundary.	Q	I
T25	WSW/252°	1.4 mi.	Pole, Toll Rd. - 12 poles S of Fermi Drive.	Q	I
T26	WSW/259°	1.1 mi.	Pole, Toll Rd. - 6 poles S of Fermi Drive.	Q	I
T27	SW/225°	6.8 mi.	Pole, NE corner of McMillan and East Front St. (Special Area)	Q	I
T28	SW/229°	10.6 mi.	Pole, N side of Mortar Creek between Hull and LaPlaisance.	Q	C
T29	WSW/237°	10.3 mi.	Pole, NE corner of S Dixie and Albain.	Q	C
T30	WSW/247°	7.8 mi.	E side S end of foot bridge, St. Mary's Park corner of Elm and Monroe St. (Special Area)	Q	I
T31	WSW/255°	9.6 mi.	1st pole W of entrance drive Milton "Pat" Munson Recreational Reserve on North Custer Rd.	Q	C

I = Indicator

C = Control

O = On-site

Q = Quarterly

Direct Radiation Sample Locations (Table A-1 continued)

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
T32	WNW/295°	10.3 mi.	Pole, corner of Stony Creek and Finzel Rd.	Q	I
T33	NW/317°	9.2 mi.	Pole, W side of Grafton Rd. 1 pole N of Ash and Grafton intersection.	Q	I
T34	NNW/338°	9.8 mi.	Pole, SW corner of Port Creek and Will-Carleton Rd.	Q	I
T35	N/359°	6.9 mi.	Pole, S Side of S Huron River Dr. across from Race St. (Special Area)	Q	I
T36	N/358°	9.1 mi.	Pole, NE corner of Gibraltar and Cahill Rd.	Q	I
T37	NNE/21°	9.8 mi.	Pole, S corner of Adams and Gibraltar across from Humbug Marina.	Q	I
T38	WNW/294°	1.7 mi.	Residence - 6594 N. Dixie Hwy.	Q	I
T39*	S/176°	0.3 mi.	SE corner of Protected Area Fence (PAF).	Q	O
T40*	S/170°	0.3 mi.	Midway along OBA - PAF.	Q	O
T41*	SSE/161°	0.2 mi.	Midway between OBA and Shield Wall on PAF.	Q	O
T42*	SSE/149°	0.2 mi.	Midway along Shield Wall on PAF.	Q	O
T43*	SE/131°	0.1 mi.	Midway between Shield Wall and Aux Boilers on PAF.	Q	O
T44*	ESE/109°	0.1 mi.	Opposite OSSF door on PAF.	Q	O

* = Onsite TLD

I = Indicator

C = Control

O = On-site

Q = Quarterly

Direct Radiation Sample Locations (Table A-1 continued)

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
T45*	E/86°	0.1 mi.	NE Corner of PAF.	Q	O
T46*	ENE/67°	0.2 mi.	NE side of barge slip on fence.	Q	O
T47*	S/185°	0.1 mi.	South of Turbine Bldg. rollup door on PAF.	Q	O
T48*	SW/235°	0.2 mi.	30 ft. from corner of AAP on PAF.	Q	O
T49	WSW/251°	1.1 mi.	Corner of Site Boundary fence north of NOC along Critical Path Rd.	Q	I
T50	W/270°	0.9 mi.	Site Boundary fence near main gate by the south Bullet Street sign.	Q	I
T51	N/3°	0.4 mi.	Site Boundary fence north of north Cooling Tower.	Q	O
T52	NNE/20°	0.4 mi.	Site Boundary fence at the corner of Arson and Tower.	Q	O
T53*	NE/55°	0.2 mi.	Site Boundary fence east of South Cooling Tower.	Q	O
T54*	S/189°	0.3 mi.	Pole next to Fermi 2 Visitors Center.	Q	O
T55	WSW/251°	3.3 mi.	Pole, north side of Nadeau Rd. across from Sodt Elementary School Marquee.	Q	I
T56	WSW/256°	2.9 mi.	Pole, entrance to Jefferson Middle School on Stony Creek Rd.	Q	I

* = Onsite TLD

I = Indicator

C = Control

O = On-site

Q = Quarterly

Direct Radiation Sample Locations (Table A-1 continued)

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
T57	W/260°	2.7 mi.	Pole, north side of Williams Rd. across from Jefferson High School entrance.	Q	I
T58	WSW/249°	4.9 mi.	Pole west of Hurd Elementary School Marquee.	Q	I
T59	NW/325°	2.6 mi.	Pole north of St. Charles Church entrance on Dixie Hwy.	Q	I
T60	NNW/341°	2.5 mi.	1st pole north of North Elementary School entrance on Dixie Hwy.	Q	I
T61	W/268°	10.1 mi.	Pole, SW corner of Stewart and Raisinville Rd.	Q	I
T62	SW/232°	9.7 mi.	Pole, NE corner of Albain and Hull Rd.	Q	I
T63	WSW/245°	9.6 mi.	Pole, NE corner of Dunbar and Telegraph Rd.	Q	I
T64*	WNW/286°	0.2 mi.	West of switchgear yard on PAF.	Q	O
T65*	NW/322°	0.1 mi.	PAF switchgear yard area NW of RHR complex.	Q	O
T66*	NE/50°	0.1 mi.	Behind Bldg. 42 on PAF.	Q	O
T67*	NNW/338°	0.2 mi.	Site Boundary fence West of South Cooling Tower.	Q	O

* = Onsite TLD

I = Indicator

C = Control

O = On-site

Q = Quarterly

Air Particulate and Air Iodine Sample Locations

Table A-2

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
API-1	NE/39°	1.4 mi.	Estral Beach Pole on Lakeshore, 18 Poles S of Lakeview (Nearest Community with highest X/Q).	W	I
API-2	NNW/337°	0.6 mi.	Site Boundary and Toll Road, on Site Fence by T-4.	W	I
API-3	NW/313°	0.6 mi.	Site Boundary and Toll Road, on Site Fence by T-5.	W	I
API-4	W/270°	14.0 mi.	Pole, at Michigan Gas substation on N. Custer Rd., 0.66 miles west of Doty Rd.	W	C
API-5	S/188°	1.2 mi.	Pole, N corner of Pointe Aux Peaux and Dewey Rd.	W	I

I = Indicator

C = Control

W = Weekly

Milk Sample Locations

Table A-3

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
M-2	NW/319°	5.4 mi.	Reaume Farm - 2705 E Labo.	M-SM	I
M-8	WNW/289°	9.9 mi.	Calder Dairy - 9334 Finzel Rd.	M-SM	C

I = Indicator

C = Control

M = Monthly

SM = Semimonthly

Garden Sample Locations

Table A-4

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
FP-1	NNE/21°	3.8 mi.	9501 Turnpike Highway.	M	I
FP-9	W/261°	10.9 mi.	4074 North Custer Road.	M	C

I = Indicator

C = Control

M = Monthly (when available)

Drinking Water Sample Locations

Table A-5

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
DW-1	S/174°	1.1 mi.	Monroe Water Station N Side of Pointe Aux Peaux 1/2 Block W of Long Rd.	M	I
DW-2	N/8°	18.5 mi.	Detroit Water Station 14700 Moran Rd, Allen Park.	M	C

I = Indicator

C = Control

M = Monthly

Surface Water Sample Locations

Table A-6

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
SW-2	NNE/20°	11.7 mi.	DECO's Trenton Channel Power Plant Intake Structure (Screenhouse #1).	M	C
SW-3	SSE/160°	0.2 mi.	DECO's Fermi 2 General Service Water Intake Structure.	M	I

I = Indicator

C = Control

M = Monthly

Groundwater Sample Locations

Table A-7

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
GW-1	S/175°	0.4 mi.	Approx. 100 ft W of Lake Erie, EF-1 Parking lot near gas fired peakers.	Q	I
GW-2	SSW/208°	1.0 mi.	4 ft S of Pointe Aux Peaux (PAP) Rd. Fence 427 ft W of where PAP crosses over Stoney Point's Western Dike.	Q	I
GW-3	SW/226°	1.0 mi.	143 ft W of PAP Rd. Gate, 62 ft N of PAP Rd. Fence.	Q	I
GW-4	WNW/299°	0.6 mi.	42 ft S of Langton Rd, 8 ft E of Toll Rd. Fence.	Q	C

I = Indicator

C = Control

Q = Quarterly

Sediment Sample Locations

Table A-8

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
S-1	SSE/165°	0.9 mi.	Pointe Aux Peaux, Shoreline to 500 ft offshore sighting directly to Land Base Water Tower.	SA	I
S-2	E/81°	0.2 mi.	Fermi 2 Discharge, approx. 200 ft offshore.	SA	I
S-3	NE/39°	1.1 mi.	Estral Beach, approx. 200 ft offshore, off North shoreline where Swan Creek and Lake Erie meet.	SA	I
S-4	WSW/241°	3.0 mi.	Indian Trails Community Beach.	SA	I
S-5	NNE/20°	11.7 mi.	DECo's Trenton Channel Power Plant intake area.	SA	C

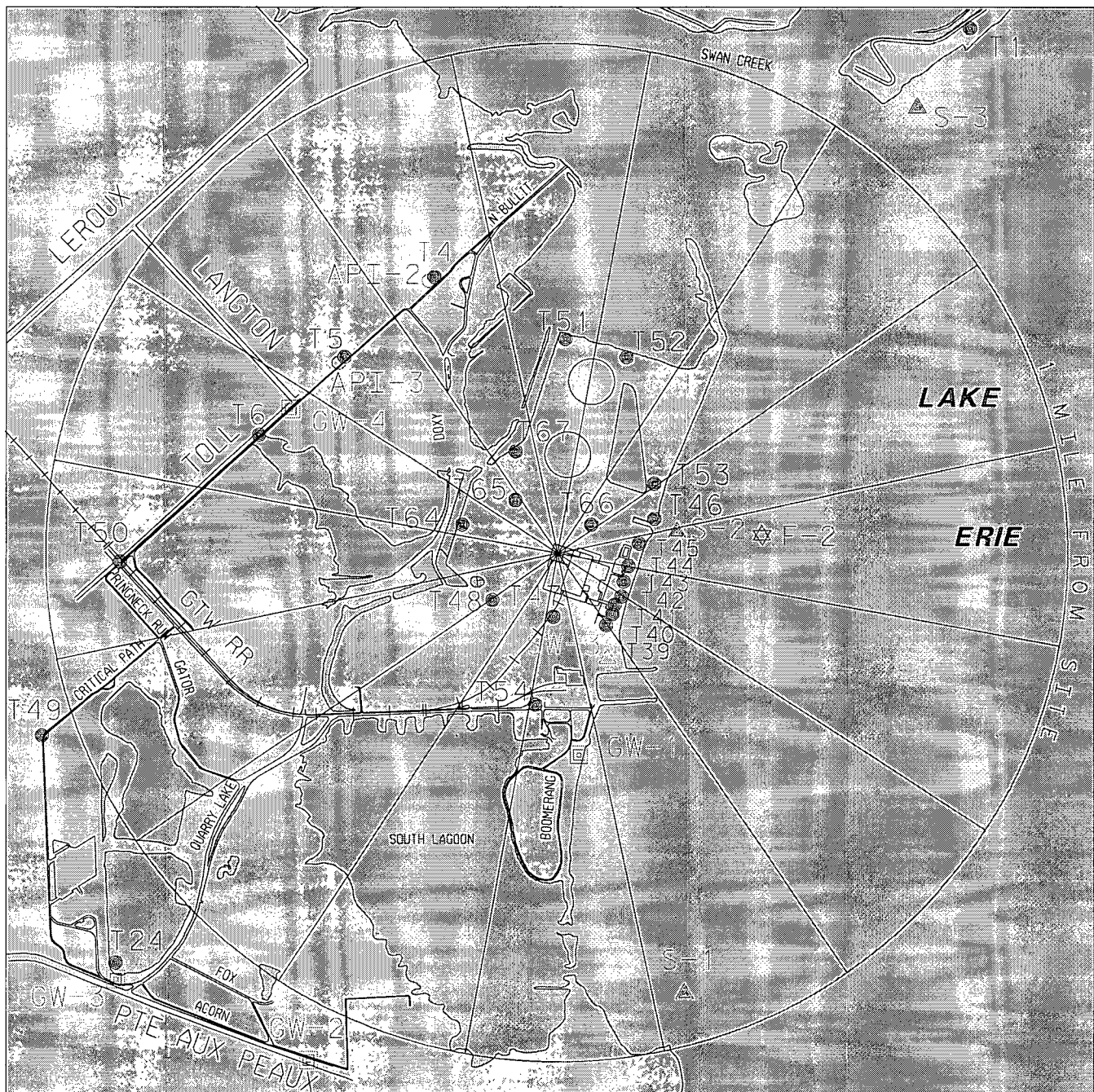
I = Indicator C = Control SA = Semiannually

Fish Sample Locations

Table A-9

Station Number	Meteorological Sector/Azimuth (Degrees)	Distance from Reactor (Approx.)	Description	Collection Frequency	Type
F-1	NNE/31°	9.5 mi.	Near Celeron Island.	SA	C
F-2	E/86°	0.4 mi.	Fermi 2 Discharge (approx. 1200 ft offshore).	SA	I
F-3	SW/227°	3.5 mi.	Brest Bay.	SA	C

I = Indicator C = Control SA = Semiannually

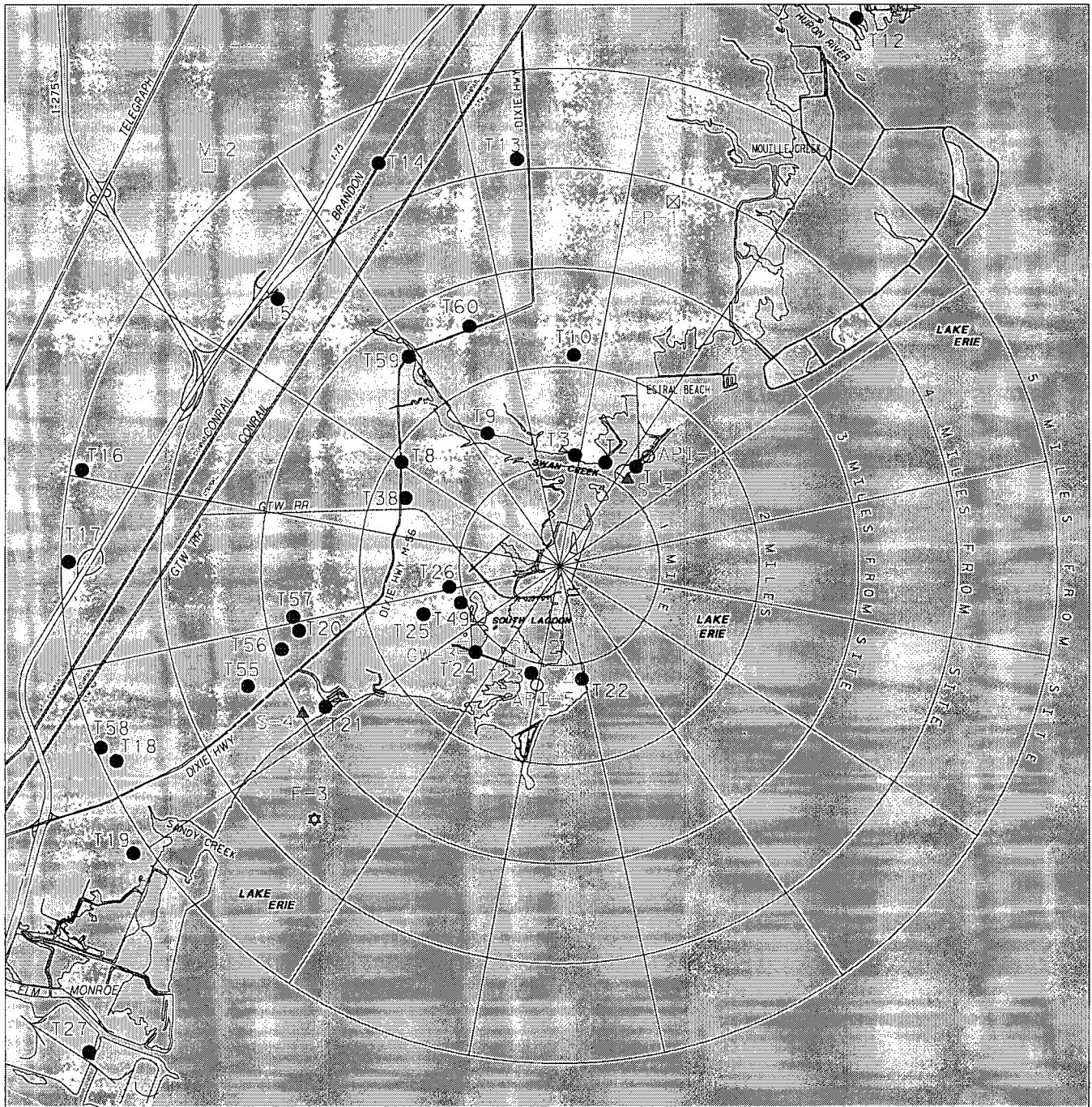


MAP - 1
 SAMPLING LOCATIONS
 BY STATION NUMBER
 WITHIN 1 MILE

LEGEND

- T- DIRECT RADIATION
- API- AIR PARTICULATES/AIR IODINE
- ▲ S- SEDIMENTS
- △ DW/SW- DRINKING WATER/SURFACE WATER
- GW- GROUND WATER
- M- MILK
- ⊠ FP- FOOD PRODUCTS
- ☆ F- FISH

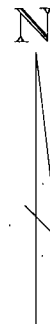


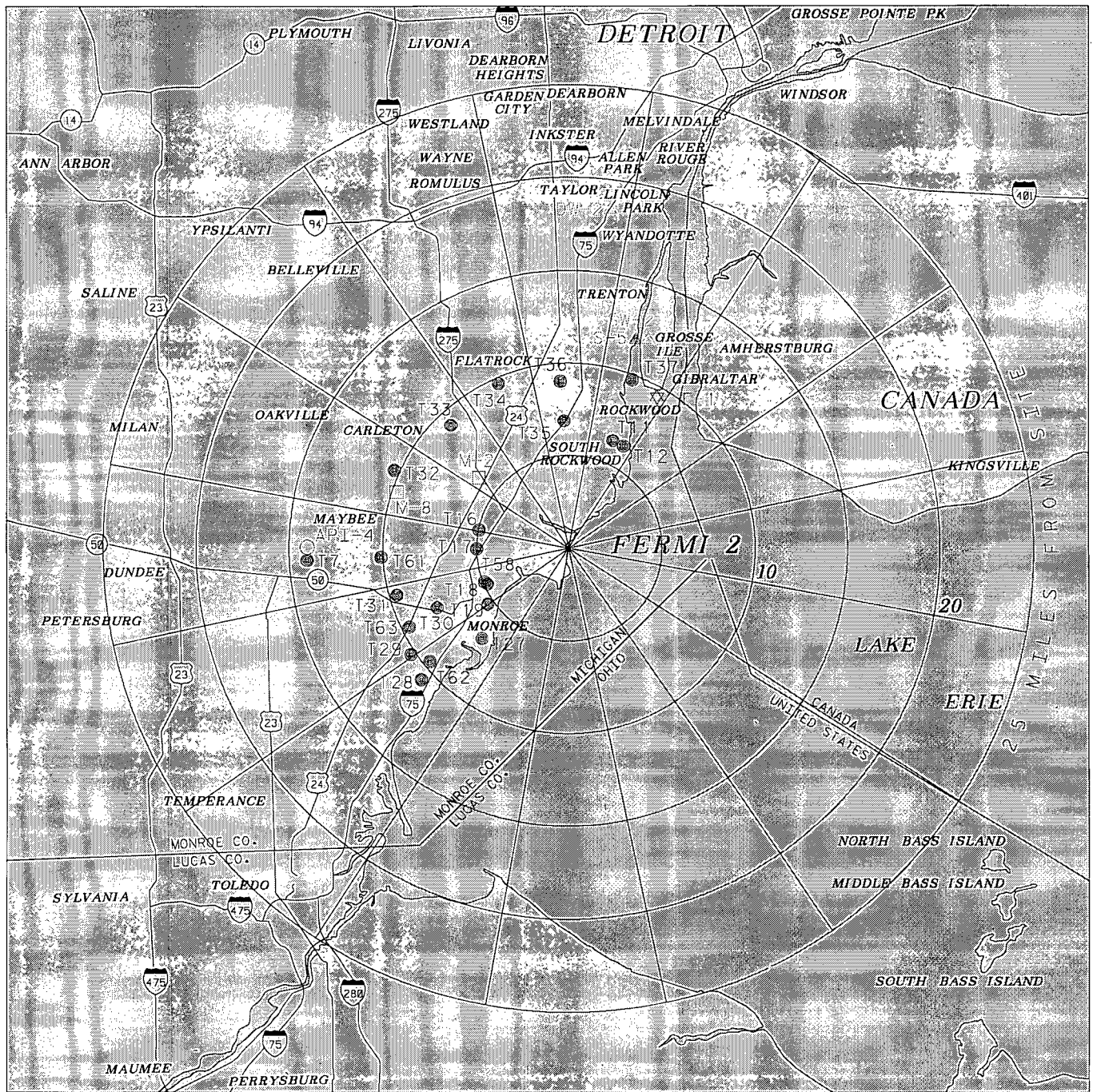


MAP - 2
 SAMPLING LOCATIONS
 BY STATION NUMBER
 (1 TO 5 MILES)

LEGEND

- T- DIRECT RADIATION
- API- AIR PARTICULATES/AIR IODINE
- ▲ S- SEDIMENTS
- △ DW/SW- DRINKING WATER/SURFACE WATER
- ▣ GW- GROUND WATER
- M- MILK
- ⊠ FP- FOOD PRODUCTS
- ☆ F- FISH

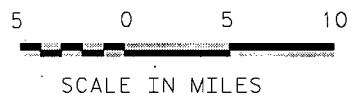




MAP - 3
 SAMPLING LOCATIONS
 BY STATION NUMBER
 (GREATER THAN 5 MILES)

LEGEND

- T- DIRECT RADIATION
- API- AIR PARTICULATES OR AIR IODINE
- ▲ S- SEDIMENTS
- △ DW/SW- DRINKING WATER/SURFACE WATER
- GW- GROUND WATER
- M- MILK
- ⊠ FP- FOOD PRODUCTS
- ☆ F- FISH



Appendix B
Environmental Data Summary

*Fermi 2 - 2006 Annual
Radioactive Effluent Release and
Radiological Environmental Operating Report*

Table B-1 Radiological Environmental Monitoring Program Summary

Name of Facility: Enrico Fermi Unit 2

Docket No.: 50-341

Reporting Period: January - December 2006

Location of Facility: 30 miles southeast of Detroit, Michigan (Frenchtown Township)

Sample Type (Units)	Type and Number of Analysis	LLD	Indicator Locations Mean and Range	Location with Highest Annual Mean		Control Locations Mean and Range	Number of Non-routine Results
				Location	Mean and Range		
Direct Radiation <i>mR/std qtr</i>	Gamma (TLD) 191	1.0	14.8 (175/175) 10.8 to 20.3	T-49 (Indicator)	19.3 (4/4) 18.2 to 20.3	13.7 (16/16) 12.5 to 14.9	None
Airborne Particulates <i>pCi/cu. m.</i>	Gross Beta 255	1.00E-2	2.13E-2 (203/203) 1.97E-6 to 3.96E-2	API-4 (Control)	2.44E-2 (52/52) 6.40E-3 to 5.56E-2	2.44E-2 (52/52) 6.40E-3 to 5.56E-2	None
	Gamma Spec. 20 Be-7	N/A	1.06E-1 (16/16) 5.60E-2 to 1.64E-1	API-4 (Control)	1.27E-1 (4/4) 9.00E-2 to 1.50E-1	1.27E-1 (4/4) 9.00E-2 to 1.50E-1	None
	K-40	N/A	<MDA			<MDA	None
	Mn-54	N/A	<MDA			<MDA	None
	Co-58	N/A	<MDA			<MDA	None
	Fe-59	N/A	<MDA			<MDA	None
	Co-60	N/A	<MDA			<MDA	None
	Zn-65	N/A	<MDA			<MDA	None
	Zr-95	N/A	<MDA			<MDA	None
	Ru-103	N/A	<MDA			<MDA	None
	Ru-106	N/A	<MDA			<MDA	None
	Cs-134	5.00E-2	<MDA			<MDA	None
	Cs-137	6.00E-2	<MDA			<MDA	None
	Ba-140	N/A	<MDA			<MDA	None
	La-140	N/A	<MDA			<MDA	None
Ce-141	N/A	<MDA			<MDA	None	
Ce-144	N/A	<MDA			<MDA	None	
Airborne Iodine <i>pCi/cu. m.</i>	I-131 257	7.00E-2	<MDA			<MDA	None

*Fermi 2 - 2006 Annual
Radioactive Effluent Release and
Radiological Environmental Operating Report*

Table B-1 Radiological Environmental Monitoring Program Summary (cont.)

Name of Facility: Enrico Fermi Unit 2

Docket No.: 50-341

Reporting Period: January - December 2006

Location of Facility: 30 miles southeast of Detroit, Michigan (Frenchtown Township)

Sample Type (Units)	Type and Number of Analysis	LLD	Indicator Locations Mean and Range	Location with Highest Annual Mean		Control Locations Mean and Range	Number of Non-routine Results
				Location	Mean and Range		
Milk <i>pCi/l</i>	I-131 36	1.00E+0	<MDA	M-8 (Control)	1.70E+0 (1/18)	<MDA	None
	Sr-89 36	N/A	<MDA			<MDA	None
	Sr-90	N/A	1.43E+0 (1/18)			1.70E+0 (1/18)	None
	Gamma Spec. 36			M-8 (Control)	1.42E+3 (18/18) 1.30E+3 to 1.53E+3	<MDA	None
	Be-7	N/A	<MDA			<MDA	None
	K-40	N/A	1.41E+3 (18/18) 1.27E+3 to 1.50E+3			1.42E+3 (18/18) 1.30E+3 to 1.53E+3	None
	Mn-54	N/A	<MDA			<MDA	None
	Co-58	N/A	<MDA			<MDA	None
	Fe-59	N/A	<MDA			<MDA	None
	Co-60	N/A	<MDA			<MDA	None
	Zn-65	N/A	<MDA			<MDA	None
	Zr-95	N/A	<MDA			<MDA	None
	Ru-103	N/A	<MDA			<MDA	None
	Ru-106	N/A	<MDA			<MDA	None
	Cs-134	1.50E+1	<MDA			<MDA	None
	Cs-137	1.80E+1	<MDA	<MDA	None		
	Ba-140	1.50E+1	<MDA	<MDA	None		
	La-140	1.50E+1	<MDA	<MDA	None		
Ce-141	N/A	<MDA	<MDA	None			
Ce-144	N/A	<MDA	<MDA	None			
Vegetation <i>pCi/kg wet</i>	I-131 14	6.00E+1	<MDA	FP-9 (Control)	3.45E+3 (7/7) 1.99E+3 to 4.71E+3	<MDA	None
	Gamma Spec. 14		<MDA			<MDA	None
	Be-7	N/A	<MDA			3.45E+3 (7/7)	None
	K-40	N/A	2.85E+3 (7/7) 1.60E+3 to 4.00E+3	1.99E+3 to 4.71E+3	1.99E+3 to 4.71E+3	None	

**Fermi 2 - 2006 Annual
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Table B-1 Radiological Environmental Monitoring Program Summary (cont.)

Name of Facility: Enrico Fermi Unit 2

Docket No.: 50-341

Reporting Period: January - December 2006

Location of Facility: 30 miles southeast of Detroit, Michigan (Frenchtown Township)

Sample Type (Units)	Type and Number of Analysis	LLD	Indicator Locations Mean and Range	Location with Highest Annual Mean		Control Locations Mean and Range	Number of Non-routine Results
				Location	Mean and Range		
Vegetation (cont.) <i>pCi/kg wet</i>	Mn-54	N/A	<MDA			<MDA	None
	Co-58	N/A	<MDA			<MDA	None
	Fe-59	N/A	<MDA			<MDA	None
	Co-60	N/A	<MDA			<MDA	None
	Zn-65	N/A	<MDA			<MDA	None
	Zr-95	N/A	<MDA			<MDA	None
	Ru-103	N/A	<MDA			<MDA	None
	Ru-106	N/A	<MDA			<MDA	None
	Cs-134	6.00E+1	<MDA			<MDA	None
	Cs-137	8.00E+1	<MDA			<MDA	None
	Ba-140	N/A	<MDA			<MDA	None
	La-140	N/A	<MDA			<MDA	None
	Ce-141	N/A	<MDA			<MDA	None
	Ce-144	N/A	<MDA			<MDA	None
Drinking Water <i>pCi/l</i>	Gross Beta 25	4.00E+0	4.72E+0 (10/13) 4.10E+0 to 6.10E+0	DW-1 (Indicator)	4.72E+0 (10/13) 4.10E+0 to 6.10E+0	4.03E+0 (6/12) 2.30E+0 to 5.90E+0	None
	Sr-89 25	N/A	<MDA			<MDA	None
	Sr-90	N/A	<MDA			<MDA	None
	Gamma Spec. 25						
	Be-7	N/A	<MDA			<MDA	None
	K-40	N/A	<MDA			<MDA	None
	Cr-51	N/A	<MDA			<MDA	None
	Mn-54	1.50E+1	<MDA			<MDA	None
	Co-58	1.50E+1	<MDA			<MDA	None
	Fe-59	3.00E+1	<MDA			<MDA	None
	Co-60	1.50E+1	<MDA			<MDA	None
	Zn-65	3.00E+1	<MDA			<MDA	None
Zr-95	1.50E+1	<MDA			<MDA	None	

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Table B-1 Radiological Environmental Monitoring Program Summary (cont.)

Name of Facility: Enrico Fermi Unit 2

Docket No.: 50-341

Reporting Period: January - December 2006

Location of Facility: 30 miles southeast of Detroit, Michigan (Frenchtown Township)

Sample Type (Units)	Type and Number of Analysis	LLD	Indicator Locations Mean and Range	Location with Highest Annual Mean		Control Locations Mean and Range	Number of Non-routine Results
				Location	Mean and Range		
Drinking Water (cont.) pCi/l	Ru-103	N/A	<MDA			<MDA	None
	Ru-106	N/A	<MDA			<MDA	None
	Cs-134	1.50E+1	<MDA			<MDA	None
	Cs-137	1.80E+1	<MDA			<MDA	None
	Ba-140	1.50E+1	<MDA			<MDA	None
	La-140	1.50E+1	<MDA			<MDA	None
	Ce-141	N/A	<MDA			<MDA	None
	Ce-144	N/A	<MDA			<MDA	None
H-3	8	2.00E+3	<MDA			<MDA	None
Surface Water pCi/l	Sr-89	24	N/A	<MDA		<MDA	None
	Sr-90		N/A	<MDA		<MDA	None
	Gamma Spec.	24					
	Be-7		N/A	<MDA		<MDA	None
	K-40		N/A	<MDA		<MDA	None
	Cr-51		N/A	<MDA		<MDA	None
	Mn-54		1.50E+1	<MDA		<MDA	None
	Co-58		1.50E+1	<MDA		<MDA	None
	Fe-59		3.00E+1	<MDA		<MDA	None
	Co-60		1.50E+1	<MDA		<MDA	None
	Zn-65		3.00E+1	<MDA		<MDA	None
	Zr-95		1.50E+1	<MDA		<MDA	None
	Ru-103		N/A	<MDA		<MDA	None
	Ru-106		N/A	<MDA		<MDA	None
	Cs-134		1.50E+1	<MDA		<MDA	None
	Cs-137		1.80E+1	<MDA		<MDA	None
	Ba-140		1.50E+1	<MDA		<MDA	None
La-140		1.50E+1	<MDA		<MDA	None	
Ce-141		N/A	<MDA		<MDA	None	

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Table B-1 Radiological Environmental Monitoring Program Summary (cont.)

Name of Facility: Enrico Fermi Unit 2

Docket No.: 50-341

Reporting Period: January - December 2006

Location of Facility: 30 miles southeast of Detroit, Michigan (Frenchtown Township)

Sample Type (Units)	Type and Number of Analysis	LLD	Indicator Locations Mean and Range	Location with Highest Annual Mean		Control Locations Mean and Range	Number of Non-routine Results
				Location	Mean and Range		
Surface Water (cont.) <i>pCi/l</i>	Ce-144 H-3 8	N/A 2.00E+3	<MDA <MDA			<MDA <MDA	None None
Groundwater <i>pCi/l</i>	Gamma Spec. 16 Be-7 K-40 Cr-51 Mn-54 Co-58 Fe-59 Co-60 Zn-65 Zr-95 Ru-103 Ru-106 Cs-134 Cs-137 Ba-140 La-140 Ce-141 Ce-144 H-3 16	N/A N/A N/A 1.50E+1 1.50E+1 3.00E+1 1.50E+1 3.00E+1 1.50E+1 N/A N/A 1.50E+1 1.80E+1 1.50E+1 1.50E+1 N/A N/A 2.00E+3	<MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA			<MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA <MDA	None None None None None None None None None None None None None None None None None None None None
Sediment <i>pCi/kg dry</i>	Sr-89 10 Sr-90 Gamma Spec. 10 Be-7 K-40	N/A N/A N/A N/A	<MDA <MDA <MDA 9.62E+3 (8/8) 6.64E+3 to 1.24E+4	S-1 (Indicator)	1.21E+4 (2/2) 1.17E+4 to 1.24E+4	<MDA <MDA <MDA 1.16E+4 (2/2) 1.13E+4 to 1.18E+4	None None None None

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Table B-1 Radiological Environmental Monitoring Program Summary (cont.)

Name of Facility: Enrico Fermi Unit 2

Docket No.: 50-341

Reporting Period: January - December 2006

Location of Facility: 30 miles southeast of Detroit, Michigan (Frenchtown Township)

Sample Type (Units)	Type and Number of Analysis	LLD	Indicator Locations Mean and Range	Location with Highest Annual Mean		Control Locations Mean and Range	Number of Non-routine Results
				Location	Mean and Range		
Sediment (cont.) <i>pCi/kg dry</i>	Mn-54	N/A	<MDA	S-5 (Control)	7.20E+1 (2/2) 5.10E+1 to 9.30E+1	<MDA	None
	Co-58	N/A	<MDA			<MDA	None
	Fe-59	N/A	<MDA			<MDA	None
	Co-60	N/A	<MDA			<MDA	None
	Zn-65	N/A	<MDA			<MDA	None
	Zr-95	N/A	<MDA			<MDA	None
	Ru-103	N/A	<MDA			<MDA	None
	Ru-106	N/A	<MDA			<MDA	None
	Cs-134	1.50E+2	<MDA			<MDA	None
	Cs-137	1.80E+2	<MDA			<MDA	None
	Ba-140	N/A	<MDA			<MDA	None
	La-140	N/A	<MDA			<MDA	None
	Ce-141	N/A	<MDA			<MDA	None
	Ce-144	N/A	<MDA			<MDA	None
Fish <i>pCi/kg wet</i>	Sr-89 19	N/A	<MDA	F-2 (Indicator)	3.15E+3 (6/6) 2.25E+3 to 4.25E+3	<MDA	None
	Sr-90	N/A	<MDA			<MDA	None
	Gamma Spec. 19	N/A	<MDA			<MDA	None
	Be-7	N/A	3.15E+3 (6/6) 2.25E+3 to 4.25E+3			2.83E+3 (13/13) 2.30E+3 to 3.59E+3	None
	K-40	N/A	<MDA			<MDA	None
	Mn-54	1.30E+2	<MDA			<MDA	None
	Co-58	1.30E+2	<MDA			<MDA	None
	Fe-59	2.60E+2	<MDA			<MDA	None
	Co-60	1.30E+2	<MDA			<MDA	None
Zn-65	2.60E+2	<MDA	<MDA	None			

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Table B-1 Radiological Environmental Monitoring Program Summary (cont.)

Name of Facility: Enrico Fermi Unit 2

Docket No.: 50-341

Reporting Period: January - December 2006

Location of Facility: 30 miles southeast of Detroit, Michigan (Frenchtown Township)

Sample Type (Units)	Type and Number of Analysis	LLD	Indicator Locations Mean and Range	Location with Highest Annual Mean		Control Locations Mean and Range	Number of Non-routine Results	
				Location	Mean and Range			
Fish (cont.) <i>pCi/kg wet</i>	Zr-95	N/A	<MDA	F-3 (Control)	3.80E+1 (1/8)	<MDA	None	
	Ru-103	N/A	<MDA			<MDA	None	
	Ru-106	N/A	<MDA			<MDA	None	
	Cs-134	1.30E+2	<MDA			<MDA	None	
	Cs-137	1.50E+2	<MDA			3.80E+1 (1/8)	3.80E+1 (1/8)	None
	Ba-140	N/A	<MDA			<MDA	None	
	La-140	N/A	<MDA			<MDA	None	
	Ce-141	N/A	<MDA			<MDA	None	
	Ce-144	N/A	<MDA			<MDA	None	

Direct Radiation mean and range values are based on off-site TLDs

LLD = Fermi 2 ODCM LLD: nominal lower limit of detection based on 4.66 sigma error for background sample.

<MDA = Less than the lab's minimum detectable activity which is less than the LLD.

Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (F).

Locations are specified by Fermi 2 code and are described in Appendix A Sampling Locations.

Non-routine results are those which are reportable according to Fermi 2 ODCM control 3.12.1.

Note: Other nuclides were considered in analysis results, but only those identifiable were reported in addition to ODCM listed nuclides.

Appendix C

Environmental Data Tables

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**FERMI 2
TLD ANALYSIS
(mR/Std Qtr)**

STATION NUMBER	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
T-1	12.23	13.41	14.04	12.82
T-2	12.73	13.58	14.52	12.39
T-3	10.91	11.52	16.59	11.84
T-4	13.60	14.35	17.50	13.20
T-5	14.48	14.74	15.86	14.44
T-6	13.27	15.02	15.86	14.69
T-7	12.19	12.73	14.39	13.94
T-8	14.57	15.44	16.92	15.44
T-9	13.88	14.10	15.57	12.36
T-10	14.36	15.11	16.54	13.89
T-11	13.19	13.37	14.98	13.34
T-12	13.00	12.96	14.03	12.82
T-13	14.53	14.90	16.88	14.94
T-14	15.24	15.21	17.09	16.27
T-15	12.45	13.92	13.77	13.34
T-16	15.82	16.79	18.57	18.23
T-17	11.65	11.83	15.88	12.66
T-18	13.23	13.57	15.75	13.53
T-19	14.61	14.44	17.05	14.72
T-20	14.36	15.61	19.63	15.45
T-21	13.37	12.55	15.19	12.99
T-22	14.08	13.94	16.20	14.02
T-23	12.98	14.30	15.26	14.05
T-24	13.98	12.02	14.46	12.88
T-25	17.42	16.41	18.76	16.72
T-26	16.29	16.47	19.16	17.15
T-27	12.43	11.60	12.92	11.49
T-28	12.58	12.23	13.84	12.86
T-29	16.97	12.98	13.72	12.92
T-30	14.23	13.16	14.37	14.16
T-31	14.28	(a)	15.91	14.50
T-32	14.40	14.77	(a)	15.58
T-33	12.51	14.53	14.03	12.80
T-34	13.69	13.96	16.62	14.24
T-35	13.36	12.52	14.47	13.25
T-36	13.77	14.01	14.99	14.36
T-37	14.08	14.05	14.72	14.35
T-38	14.95	14.61	15.93	15.78
T-39	60.58	59.21	53.05	44.52
T-40	50.57	40.72	46.89	37.81
T-41	97.28	98.22	84.46	67.51
T-42	95.88	94.21	90.96	69.01
T-43	105.60	98.31	94.50	75.10
T-44	91.33	87.64	90.00	64.24
T-45	57.45	53.96	55.24	41.93
T-46	43.97	42.21	42.32	31.05
T-47	96.37	77.79	90.46	64.50

(a) TLD missing, see Appendix D - Program Execution.

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**FERMI 2
TLD ANALYSIS (CONT.)
(mR/Std Qtr)**

STATION NUMBER	FIRST QUARTER	SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
T-48	48.53	47.85	48.27	34.52
T-49	17.23	17.49	20.31	18.92
T-50	15.12	14.42	15.91	15.56
T-51	11.32	10.55	12.76	11.26
T-52	15.64	15.42	16.55	14.16
T-53	27.32	28.06	29.39	22.96
T-54	18.51	17.83	18.30	14.89
T-55	15.55	15.03	16.05	16.39
T-56	13.97	14.42	15.14	14.89
T-57	17.26	17.38	18.48	17.36
T-58	12.92	12.61	13.30	12.73
T-59	13.71	12.73	14.35	12.47
T-60	14.89	14.23	16.26	14.95
T-61	14.89	16.21	16.83	15.10
T-62	14.34	16.11	17.00	15.27
T-63	12.80	12.76	14.75	12.90
T-64	24.44	23.66	24.95	19.87
T-65	27.42	28.31	27.80	23.33
T-66	140.26	149.98	137.50	107.30
T-67	19.54	19.46	19.52	16.77

**FERMI 2
AIR PARTICULATE GROSS BETA**
(pCi/cubic meter)

API-1 FIRST QUARTER

Date	Activity		
1/3/2007	2.95E-02	+/-	3.00E-03
1/11/2007	1.95E-02	+/-	2.50E-03
1/17/2007	1.75E-02	+/-	2.80E-03
1/24/2007	2.62E-02	+/-	2.60E-03
1/31/2007	2.74E-02	+/-	2.60E-03
2/7/2007	2.75E-02	+/-	2.50E-03
2/15/2007	2.58E-02	+/-	2.60E-03
2/21/2007	2.91E-02	+/-	2.80E-03
2/28/2007	2.11E-02	+/-	2.30E-03
3/7/2007	1.86E-02	+/-	2.30E-03
3/14/2007	2.14E-02	+/-	2.30E-03
3/20/2007	2.57E-02	+/-	2.80E-03
3/28/2007	1.99E-02	+/-	2.00E-03

API-1 SECOND QUARTER

Date	Activity		
4/4/2007	1.45E-02	+/-	2.50E-03
4/11/2007	9.90E-03	+/-	2.40E-03
4/18/2007	2.05E-02	+/-	2.50E-03
4/25/2007	1.36E-02	+/-	2.40E-03
5/2/2007	1.53E-02	+/-	2.30E-03
5/9/2007	2.02E-02	+/-	2.30E-03
5/16/2007	2.05E-02	+/-	2.40E-03
5/23/2007	1.84E-02	+/-	2.40E-03
5/30/2007	2.44E-02	+/-	2.60E-03
6/5/2007	2.34E-02	+/-	2.60E-03
6/13/2007	1.88E-02	+/-	2.20E-03
6/20/2007	2.56E-02	+/-	2.50E-03
6/26/2007	2.37E-02	+/-	2.50E-03

**FERMI 2
AIR PARTICULATE GROSS BETA
(pCi/cubic meter)**

API-1 THIRD QUARTER

Date	Activity		
7/3/2007	1.68E-02	+/-	2.40E-03
7/11/2007	2.69E-02	+/-	2.30E-03
7/18/2007	1.85E-02	+/-	2.40E-03
7/25/2007	3.50E-02	+/-	2.70E-03
8/1/2007	3.38E-02	+/-	2.40E-03
8/8/2007	2.97E-02	+/-	2.40E-03
8/15/2007	2.09E-02	+/-	2.30E-03
8/21/2007	2.06E-02	+/-	2.90E-03
8/29/2007	1.78E-02	+/-	3.00E-03
9/5/2007	2.98E-02	+/-	2.60E-03
9/12/2007	3.26E-02	+/-	2.70E-03
9/19/2007	2.56E-02	+/-	2.40E-03
9/26/2007	3.01E-02	+/-	2.60E-03

API-1 FOURTH QUARTER

Date	Activity		
10/3/2007	3.08E-02	+/-	2.40E-03
10/10/2007	2.87E-02	+/-	2.60E-03
10/17/2007	2.07E-02	+/-	2.90E-03
10/24/2007	2.39E-02	+/-	2.70E-03
10/31/2007	1.59E-02	+/-	2.80E-03
11/7/2007	2.19E-02	+/-	2.40E-03
11/14/2007	3.88E-02	+/-	2.80E-03
11/21/2007	1.93E-02	+/-	2.60E-03
11/28/2007	2.83E-02	+/-	2.60E-03
12/5/2007	3.72E-02	+/-	2.70E-03
12/12/2007	2.68E-02	+/-	2.70E-03
12/19/2007	3.69E-02	+/-	2.60E-03
12/26/2007	4.10E-02	+/-	2.60E-03

**FERMI 2
AIR PARTICULATE GROSS BETA
(pCi/cubic meter)**

API-2 FIRST QUARTER

Date	Activity		
1/3/2007	4.11E-02	+/-	3.20E-03
1/11/2007	3.11E-02	+/-	2.70E-03
1/17/2007	3.08E-02	+/-	3.00E-03
1/24/2007	3.62E-02	+/-	2.80E-03
1/31/2007	4.18E-02	+/-	2.90E-03
2/7/2007	4.83E-02	+/-	2.80E-03
2/15/2007	4.00E-02	+/-	2.50E-03
2/21/2007	2.23E-02	+/-	2.70E-03
2/28/2007	2.73E-02	+/-	2.40E-03
3/7/2007	2.66E-02	+/-	2.50E-03
3/14/2007	3.34E-02	+/-	2.70E-03
3/20/2007	3.10E-02	+/-	2.90E-03
3/28/2007	2.89E-02	+/-	2.20E-03

API-2 SECOND QUARTER

Date	Activity		
4/4/2007	2.23E-02	+/-	2.60E-03
4/11/2007	1.95E-02	+/-	2.50E-03
4/18/2007	2.46E-02	+/-	2.60E-03
4/25/2007	2.19E-02	+/-	2.50E-03
5/2/2007	1.85E-02	+/-	2.40E-03
5/9/2007	2.64E-02	+/-	2.40E-03
5/16/2007	2.80E-02	+/-	2.60E-03
5/23/2007	2.54E-02	+/-	2.50E-03
5/30/2007	3.61E-02	+/-	2.80E-03
6/5/2007	3.81E-02	+/-	2.80E-03
6/13/2007	2.61E-02	+/-	2.40E-03
6/20/2007	3.33E-02	+/-	2.60E-03
6/26/2007	3.09E-02	+/-	2.70E-03

**FERMI 2
AIR PARTICULATE GROSS BETA
(pCi/cubic meter)**

API-2 THIRD QUARTER

Date	Activity	
7/3/2007	2.08E-02	+/- 2.50E-03
7/11/2007	3.43E-02	+/- 2.40E-03
7/18/2007	2.06E-02	+/- 2.50E-03
7/25/2007	2.59E-02	+/- 2.50E-03
8/1/2007	3.95E-02	+/- 2.50E-03
8/8/2007	4.30E-02	+/- 2.60E-03
8/15/2007	2.96E-02	+/- 2.50E-03
8/21/2007	2.89E-02	+/- 3.00E-03
8/29/2007	2.31E-02	+/- 2.30E-03
9/5/2007	3.78E-02	+/- 2.70E-03
9/12/2007	4.00E-02	+/- 2.80E-03
9/19/2007	2.36E-02	+/- 2.40E-03
9/26/2007	4.38E-02	+/- 2.80E-03

API-2 FOURTH QUARTER

Date	Activity	
10/3/2007	3.61E-02	+/- 2.50E-03
10/10/2007	3.81E-02	+/- 2.70E-03
10/17/2007	2.69E-02	+/- 3.00E-03
10/24/2007	4.21E-02	+/- 2.90E-03
10/31/2007	2.58E-02	+/- 3.00E-03
11/7/2007	2.99E-02	+/- 2.50E-03
11/14/2007	4.41E-02	+/- 2.90E-03
11/21/2007	2.94E-02	+/- 2.70E-03
11/28/2007	3.22E-02	+/- 2.70E-03
12/5/2007	2.93E-02	+/- 2.60E-03
12/12/2007	3.65E-02	+/- 2.80E-03
12/19/2007	4.67E-02	+/- 2.80E-03
12/26/2007	5.64E-02	+/- 2.80E-03

**FERMI 2
AIR PARTICULATE GROSS BETA
(pCi/cubic meter)**

API-3 FIRST QUARTER

Date	Activity		
1/3/2007	3.17E-02	+/-	3.00E-03
1/11/2007	2.35E-02	+/-	2.60E-03
1/17/2007	2.16E-02	+/-	2.80E-03
1/24/2007	3.80E-02	+/-	2.80E-03
1/31/2007	3.82E-02	+/-	2.90E-03
2/7/2007	3.53E-02	+/-	2.60E-03
2/15/2007	3.34E-02	+/-	2.40E-03
2/21/2007	3.17E-02	+/-	2.80E-03
2/28/2007	2.27E-02	+/-	2.30E-03
3/7/2007	2.07E-02	+/-	2.40E-03
3/14/2007	2.95E-02	+/-	2.70E-03
3/20/2007	2.75E-02	+/-	2.80E-03
3/28/2007	2.35E-02	+/-	2.10E-03

API-3 SECOND QUARTER

Date	Activity		
4/4/2007	1.77E-02	+/-	2.50E-03
4/11/2007	1.55E-02	+/-	2.40E-03
4/18/2007	2.57E-02	+/-	2.60E-03
4/25/2007	2.28E-02	+/-	2.50E-03
5/2/2007	2.14E-02	+/-	2.50E-03
5/9/2007	2.06E-02	+/-	2.30E-03
5/16/2007	2.29E-02	+/-	2.50E-03
5/23/2007	2.04E-02	+/-	2.50E-03
5/30/2007	3.30E-02	+/-	2.70E-03
6/5/2007	3.10E-02	+/-	2.70E-03
6/13/2007	2.07E-02	+/-	2.30E-03
6/20/2007	3.22E-02	+/-	2.60E-03
6/26/2007	3.10E-02	+/-	2.70E-03

**FERMI 2
AIR PARTICULATE GROSS BETA
(pCi/cubic meter)**

API-3 THIRD QUARTER

Date	Activity		
7/3/2007	2.06E-02	+/-	2.50E-03
7/11/2007	2.97E-02	+/-	2.40E-03
7/18/2007	1.69E-02	+/-	2.40E-03
7/25/2007	2.56E-02	+/-	2.50E-03
8/1/2007	3.20E-02	+/-	2.40E-03
8/8/2007	3.83E-02	+/-	2.60E-03
8/15/2007	2.12E-02	+/-	2.30E-03
8/21/2007	2.40E-02	+/-	2.90E-03
8/29/2007	1.97E-02	+/-	2.20E-03
9/5/2007	3.57E-02	+/-	2.70E-03
9/12/2007	3.21E-02	+/-	2.70E-03
9/19/2007	2.22E-02	+/-	2.30E-03
9/26/2007	3.83E-02	+/-	2.70E-03

API-3 FOURTH QUARTER

Date	Activity		
10/3/2007	3.37E-02	+/-	2.50E-03
10/10/2007	3.53E-02	+/-	2.60E-03
10/17/2007	1.97E-02	+/-	2.80E-03
10/24/2007	2.69E-02	+/-	2.70E-03
10/31/2007	1.76E-02	+/-	2.80E-03
11/7/2007	2.84E-02	+/-	2.50E-03
11/14/2007	3.97E-02	+/-	2.80E-03
11/21/2007	2.87E-02	+/-	2.70E-03
11/28/2007	2.81E-02	+/-	2.70E-03
12/5/2007	3.49E-02	+/-	2.70E-03
12/12/2007	3.50E-02	+/-	2.80E-03
12/19/2007	3.94E-02	+/-	2.70E-03
12/26/2007	5.21E-02	+/-	2.80E-03

**FERMI 2
AIR PARTICULATE GROSS BETA
(pCi/cubic meter)**

API-4 FIRST QUARTER

Date	Activity		
1/3/2007	2.97E-02	+/-	3.00E-03
1/11/2007	2.21E-02	+/-	2.50E-03
1/17/2007	2.18E-02	+/-	2.80E-03
1/24/2007	2.40E-02	+/-	2.60E-03
1/31/2007	3.05E-02	+/-	2.80E-03
2/7/2007	3.07E-02	+/-	2.50E-03
2/15/2007	3.05E-02	+/-	2.40E-03
2/21/2007	3.68E-02	+/-	2.90E-03
2/28/2007	2.15E-02	+/-	2.30E-03
3/7/2007	1.46E-02	+/-	2.30E-03
3/14/2007	2.98E-02	+/-	2.70E-03
3/20/2007	2.66E-02	+/-	2.80E-03
3/28/2007	1.85E-02	+/-	2.00E-03

API-4 SECOND QUARTER

Date	Activity		
4/4/2007	2.05E-02	+/-	2.60E-03
4/11/2007	1.45E-02	+/-	2.40E-03
4/18/2007	1.83E-02	+/-	2.50E-03
4/25/2007	1.91E-02	+/-	2.50E-03
5/2/2007	1.65E-02	+/-	2.40E-03
5/9/2007	1.99E-02	+/-	2.30E-03
5/16/2007	2.52E-02	+/-	2.50E-03
5/23/2007	2.16E-02	+/-	2.50E-03
5/30/2007	2.46E-02	+/-	2.60E-03
6/5/2007	2.83E-02	+/-	2.70E-03
6/13/2007	1.75E-02	+/-	2.20E-03
6/20/2007	2.74E-02	+/-	2.50E-03
6/26/2007	2.55E-02	+/-	2.50E-03

**FERMI 2
AIR PARTICULATE GROSS BETA
(pCi/cubic meter)**

API-4 THIRD QUARTER

Date	Activity		
7/3/2007	2.07E-02	+/-	2.50E-03
7/11/2007	1.97E-02	+/-	2.20E-03
7/18/2007	1.98E-02	+/-	2.40E-03
7/25/2007	2.64E-02	+/-	2.50E-03
8/1/2007	4.48E-02	+/-	2.60E-03
8/8/2007	4.11E-02	+/-	2.60E-03
8/15/2007	2.84E-02	+/-	2.40E-03
8/21/2007	2.57E-02	+/-	3.00E-03
8/29/2007	2.50E-02	+/-	2.30E-03
9/5/2007	4.03E-02	+/-	2.80E-03
9/12/2007	3.55E-02	+/-	2.80E-03
9/19/2007	2.95E-02	+/-	2.50E-03
9/26/2007	4.09E-02	+/-	2.80E-03

API-4 FOURTH QUARTER

Date	Activity		
10/3/2007	4.38E-02	+/-	2.60E-03
10/10/2007	3.98E-02	+/-	2.70E-03
10/17/2007	3.65E-02	+/-	3.10E-03
10/24/2007	4.17E-02	+/-	2.90E-03
10/31/2007	2.53E-02	+/-	3.00E-03
11/7/2007	2.96E-02	+/-	2.50E-03
11/14/2007	4.33E-02	+/-	2.90E-03
11/21/2007	2.96E-02	+/-	2.70E-03
11/28/2007	3.05E-02	+/-	2.70E-03
12/5/2007	3.53E-02	+/-	2.70E-03
12/12/2007	4.02E-02	+/-	2.80E-03
12/19/2007	5.40E-02	+/-	2.90E-03
12/26/2007	6.22E-02	+/-	2.90E-03

**FERMI 2
AIR PARTICULATE GROSS BETA
(pCi/cubic meter)**

API-5 FIRST QUARTER

Date	Activity		
1/3/2007	2.39E-02	+/-	2.80E-03
1/11/2007	1.88E-02	+/-	2.50E-03
1/17/2007	1.95E-02	+/-	2.80E-03
1/24/2007	3.09E-02	+/-	2.70E-03
1/31/2007	2.85E-02	+/-	2.70E-03
2/7/2007	2.89E-02	+/-	2.50E-03
2/15/2007	2.87E-02	+/-	2.40E-03
2/21/2007	2.55E-02	+/-	2.70E-03
2/28/2007	1.96E-02	+/-	2.20E-03
3/7/2007	1.41E-02	+/-	2.30E-03
3/14/2007	2.19E-02	+/-	2.60E-03
3/20/2007	1.84E-02	+/-	2.60E-03
3/28/2007	1.98E-02	+/-	2.00E-03

API-5 SECOND QUARTER

Date	Activity		
4/4/2007	1.41E-02	+/-	2.50E-03
4/11/2007	9.10E-03	+/-	2.30E-03
4/18/2007	1.38E-02	+/-	2.40E-03
4/25/2007	1.98E-02	+/-	2.50E-03
5/2/2007	1.53E-02	+/-	2.40E-03
5/9/2007	1.86E-02	+/-	2.20E-03
5/16/2007	2.36E-02	+/-	2.50E-03
5/23/2007	1.97E-02	+/-	2.50E-03
5/30/2007	2.04E-02	+/-	2.60E-03
6/5/2007	2.74E-02	+/-	2.70E-03
6/13/2007	2.06E-02	+/-	2.20E-03
6/20/2007	2.29E-02	+/-	2.40E-03
6/26/2007	2.32E-02	+/-	2.50E-03

**FERMI 2
AIR PARTICULATE GROSS BETA
(pCi/cubic meter)**

API-5 THIRD QUARTER

Date	Activity		
7/3/2007	1.02E-02	+/-	2.30E-03
7/11/2007	2.32E-02	+/-	2.30E-03
7/18/2007	1.39E-02	+/-	2.40E-03
7/25/2007	1.79E-02	+/-	2.40E-03
8/1/2007	3.61E-02	+/-	2.40E-03
8/8/2007	2.92E-02	+/-	2.40E-03
8/15/2007	1.75E-02	+/-	2.30E-03
8/21/2007	1.83E-02	+/-	3.20E-03
8/29/2007	1.77E-02	+/-	2.50E-03
9/5/2007	2.76E-02	+/-	2.50E-03
9/12/2007	2.76E-02	+/-	2.60E-03
9/19/2007	2.16E-02	+/-	2.30E-03
9/26/2007	3.02E-02	+/-	2.60E-03

API-5 FOURTH QUARTER

Date	Activity		
10/3/2007	3.16E-02	+/-	2.50E-03
10/10/2007	2.61E-02	+/-	2.50E-03
10/17/2007	1.87E-02	+/-	2.80E-03
10/24/2007	2.79E-02	+/-	2.70E-03
10/31/2007	1.87E-02	+/-	2.90E-03
11/7/2007	1.68E-02	+/-	2.30E-03
11/14/2007	3.16E-02	+/-	2.70E-03
11/21/2007	2.53E-02	+/-	2.70E-03
11/28/2007	3.12E-02	+/-	2.90E-03
12/5/2007	2.37E-02	+/-	2.50E-03
12/12/2007	3.09E-02	+/-	2.70E-03
12/19/2007	3.70E-02	+/-	2.60E-03
12/26/2007	4.40E-02	+/-	2.70E-03

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**FERMI 2
AIR IODINE – 131
(pCi/cubic meter)**

API-1 FIRST QUARTER

Date	Activity
1/3/2007	< 3.80E-02
1/11/2007	< 4.10E-02
1/17/2007	< 4.60E-02
1/24/2007	< 3.90E-02
1/31/2007	< 4.20E-02
2/7/2007	< 4.30E-02
2/15/2007	< 5.40E-02
2/21/2007	< 6.30E-02
2/28/2007	< 4.90E-02
3/7/2007	< 4.00E-02
3/14/2007	< 3.60E-02
3/20/2007	< 4.70E-02
3/28/2007	< 2.70E-02

API-1 SECOND QUARTER

Date	Activity
4/4/2007	< 3.50E-02
4/11/2007	< 4.90E-02
4/18/2007	< 3.50E-02
4/25/2007	< 4.10E-02
5/2/2007	< 5.00E-02
5/9/2007	< 4.20E-02
5/16/2007	< 4.40E-02
5/23/2007	< 3.80E-02
5/30/2007	< 5.50E-02
6/5/2007	< 4.80E-02
6/13/2007	< 2.70E-02
6/20/2007	< 3.10E-02
6/26/2007	< 6.50E-02

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**FERMI 2
AIR IODINE – 131
(pCi/cubic meter)**

API-1 THIRD QUARTER

Date	Activity
7/3/2007	< 4.50E-02
7/11/2007	< 4.40E-02
7/18/2007	< 4.80E-02
7/25/2007	< 3.30E-02
8/1/2007	< 4.90E-02
8/8/2007	< 4.30E-02
8/15/2007	< 4.10E-02
8/21/2007	< 4.30E-02
8/29/2007	< 5.80E-02
9/5/2007	< 3.30E-02
9/12/2007	< 3.50E-02
9/19/2007	< 3.50E-02
9/26/2007	< 5.20E-02

API-1 FOURTH QUARTER

Date	Activity
10/3/2007	< 4.80E-02
10/10/2007	< 5.10E-02
10/17/2007	< 3.50E-02
10/24/2007	< 3.50E-02
10/31/2007	< 5.40E-02
11/7/2007	< 4.80E-02
11/14/2007	< 5.50E-02
11/21/2007	< 5.20E-02
11/28/2007	< 3.50E-02
12/5/2007	< 6.50E-02
12/12/2007	< 5.10E-02
12/19/2007	< 5.30E-02
12/26/2007	< 6.20E-02

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**FERMI 2
AIR IODINE – 131
(pCi/cubic meter)**

API-2 FIRST QUARTER

Date	Activity
1/3/2007	< 3.80E-02
1/11/2007	< 4.00E-02
1/17/2007	< 4.90E-02
1/24/2007	< 3.30E-02
1/31/2007	< 4.10E-02
2/7/2007	< 4.60E-02
2/15/2007	< 4.10E-02
2/21/2007	< 6.00E-02
2/28/2007	< 4.70E-02
3/7/2007	< 4.00E-02
3/14/2007	< 4.40E-02
3/20/2007	< 4.00E-02
3/28/2007	< 3.00E-02

API-2 SECOND QUARTER

Date	Activity
4/4/2007	< 2.70E-02
4/11/2007	< 4.80E-02
4/18/2007	< 4.80E-02
4/25/2007	< 3.60E-02
5/2/2007	< 6.50E-02
5/9/2007	< 4.10E-02
5/16/2007	< 4.40E-02
5/23/2007	< 4.40E-02
5/30/2007	< 5.70E-02
6/5/2007	< 5.40E-02
6/13/2007	< 2.90E-02
6/20/2007	< 3.40E-02
6/26/2007	< 4.90E-02

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AIR IODINE – 131
(pCi/cubic meter)

API-2 THIRD QUARTER

Date	Activity
7/3/2007	< 6.00E-02
7/11/2007	< 4.00E-02
7/18/2007	< 5.80E-02
7/25/2007	< 3.50E-02
8/1/2007	< 4.20E-02
8/8/2007	< 3.80E-02
8/15/2007	< 5.50E-02
8/21/2007	< 3.60E-02
8/29/2007	< 2.50E-02
9/5/2007	< 3.30E-02
9/12/2007	< 3.80E-02
9/19/2007	< 3.30E-02
9/26/2007	< 6.90E-02

API-2 FOURTH QUARTER

Date	Activity
10/3/2007	< 6.00E-02
10/10/2007	< 5.30E-02
10/17/2007	< 2.70E-02
10/24/2007	< 4.20E-02
10/31/2007	< 5.70E-02
11/7/2007	< 3.90E-02
11/14/2007	< 4.40E-02
11/21/2007	< 6.30E-02
11/28/2007	< 2.10E-02
12/5/2007	< 4.60E-02
12/12/2007	< 6.20E-02
12/19/2007	< 6.30E-02
12/26/2007	< 5.70E-02

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**FERMI 2
AIR IODINE - 131
(pCi/cubic meter)**

API-3 FIRST QUARTER

Date	Activity
1/3/2007	< 4.00E-02
1/11/2007	< 5.00E-02
1/17/2007	< 3.40E-02
1/24/2007	< 3.70E-02
1/31/2007	< 3.30E-02
2/7/2007	< 4.10E-02
2/15/2007	< 4.60E-02
2/21/2007	< 6.20E-02
2/28/2007	< 6.40E-02
3/7/2007	< 3.70E-02
3/14/2007	< 3.40E-02
3/20/2007	< 4.90E-02
3/28/2007	< 3.80E-02

API-3 SECOND QUARTER

Date	Activity
4/4/2007	< 4.00E-02
4/11/2007	< 5.30E-02
4/18/2007	< 4.10E-02
4/25/2007	< 4.30E-02
5/2/2007	< 5.30E-02
5/9/2007	< 4.00E-02
5/16/2007	< 3.20E-02
5/23/2007	< 4.10E-02
5/30/2007	< 5.50E-02
6/5/2007	< 3.70E-02
6/13/2007	< 3.50E-02
6/20/2007	< 3.50E-02
6/26/2007	< 6.80E-02

**FERMI 2
AIR IODINE - 131
(pCi/cubic meter)**

API-3 THIRD QUARTER

Date	Activity
7/3/2007	< 6.30E-02
7/11/2007	< 4.10E-02
7/18/2007	< 5.40E-02
7/25/2007	< 3.00E-02
8/1/2007	< 4.90E-02
8/8/2007	< 3.50E-02
8/15/2007	< 4.10E-02
8/21/2007	< 3.80E-02
8/29/2007	< 3.50E-02
9/5/2007	< 3.10E-02
9/12/2007	< 4.40E-02
9/19/2007	< 3.20E-02
9/26/2007	< 6.10E-02

API-3 FOURTH QUARTER

Date	Activity
10/3/2007	< 6.00E-02
10/10/2007	< 4.30E-02
10/17/2007	< 3.70E-02
10/24/2007	< 3.80E-02
10/31/2007	< 5.60E-02
11/7/2007	< 4.50E-02
11/14/2007	< 4.80E-02
11/21/2007	< 6.80E-02
11/28/2007	< 2.90E-02
12/5/2007	< 3.80E-02
12/12/2007	< 5.90E-02
12/19/2007	< 6.10E-02
12/26/2007	< 5.00E-02

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**FERMI 2
AIR IODINE - 131
(pCi/cubic meter)**

API-4 FIRST QUARTER

Date	Activity
1/3/2007	< 4.00E-02
1/11/2007	< 4.60E-02
1/17/2007	< 4.30E-02
1/24/2007	< 3.40E-02
1/31/2007	< 3.90E-02
2/7/2007	< 3.20E-02
2/15/2007	< 4.80E-02
2/21/2007	< 4.50E-02
2/28/2007	< 5.80E-02
3/7/2007	< 3.20E-02
3/14/2007	< 3.90E-02
3/20/2007	< 4.40E-02
3/28/2007	< 3.10E-02

API-4 SECOND QUARTER

Date	Activity
4/4/2007	< 3.90E-02
4/11/2007	< 5.70E-02
4/18/2007	< 3.60E-02
4/25/2007	< 4.00E-02
5/2/2007	< 6.00E-02
5/9/2007	< 4.20E-02
5/16/2007	< 4.30E-02
5/23/2007	< 3.60E-02
5/30/2007	< 5.00E-02
6/5/2007	< 6.40E-02
6/13/2007	< 3.40E-02
6/20/2007	< 4.00E-02
6/26/2007	< 6.30E-02

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**FERMI 2
AIR IODINE - 131
(pCi/cubic meter)**

API-4 THIRD QUARTER

Date	Activity
7/3/2007	< 6.70E-02
7/11/2007	< 3.50E-02
7/18/2007	< 3.70E-02
7/25/2007	< 2.70E-02
8/1/2007	< 5.00E-02
8/8/2007	< 4.30E-02
8/15/2007	< 5.40E-02
8/21/2007	< 4.00E-02
8/29/2007	< 3.60E-02
9/5/2007	< 2.80E-02
9/12/2007	< 3.80E-02
9/19/2007	< 3.40E-02
9/26/2007	< 5.90E-02

API-4 FOURTH QUARTER

Date	Activity
10/3/2007	< 5.80E-02
10/10/2007	< 4.10E-02
10/17/2007	< 3.50E-02
10/24/2007	< 3.80E-02
10/31/2007	< 6.00E-02
11/7/2007	< 5.40E-02
11/14/2007	< 6.50E-02
11/21/2007	< 5.40E-02
11/28/2007	< 3.40E-02
12/5/2007	< 4.70E-02
12/12/2007	< 5.80E-02
12/19/2007	< 6.50E-02
12/26/2007	< 6.40E-02

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**FERMI 2
AIR IODINE – 131
(pCi/cubic meter)**

API-5 FIRST QUARTER

Date	Activity
1/3/2007	< 4.60E-02
1/11/2007	< 4.30E-02
1/17/2007	< 4.80E-02
1/24/2007	< 4.50E-02
1/31/2007	< 3.90E-02
2/7/2007	< 4.20E-02
2/15/2007	< 4.90E-02
2/21/2007	< 6.40E-02
2/28/2007	< 5.30E-02
3/7/2007	< 3.60E-02
3/14/2007	< 3.40E-02
3/20/2007	< 4.00E-02
3/28/2007	< 2.80E-02

API-5 SECOND QUARTER

Date	Activity
4/4/2007	< 4.00E-02
4/11/2007	< 5.00E-02
4/18/2007	< 3.00E-02
4/25/2007	< 4.10E-02
5/2/2007	< 5.30E-02
5/9/2007	< 3.10E-02
5/16/2007	< 4.00E-02
5/23/2007	< 4.10E-02
5/30/2007	< 4.50E-02
6/5/2007	< 5.70E-02
6/13/2007	< 2.90E-02
6/20/2007	< 3.60E-02
6/26/2007	< 5.90E-02

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**FERMI 2
AIR IODINE – 131
(pCi/cubic meter)**

API-5 THIRD QUARTER

Date	Activity
7/3/2007	< 6.50E-02
7/11/2007	< 3.90E-02
7/18/2007	< 4.90E-02
7/25/2007	< 3.00E-02
8/1/2007	< 5.30E-02
8/8/2007	< 4.00E-02
8/15/2007	< 5.10E-02
8/21/2007	< 3.90E-02
8/29/2007	< 3.90E-02
9/5/2007	< 3.30E-02
9/12/2007	< 4.10E-02
9/19/2007	< 3.90E-02
9/26/2007	< 5.70E-02

API-5 FOURTH QUARTER

Date	Activity
10/3/2007	< 5.80E-02
10/10/2007	< 4.90E-02
10/17/2007	< 3.30E-02
10/24/2007	< 3.30E-02
10/31/2007	< 5.70E-02
11/7/2007	< 3.50E-02
11/14/2007	< 3.70E-02
11/21/2007	< 6.20E-02
11/28/2007	< 3.80E-02
12/5/2007	< 5.20E-02
12/12/2007	< 5.90E-02
12/19/2007	< 6.90E-02
12/26/2007	< 5.10E-02

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**FERMI 2
AIR PARTICULATE QUARTERLY COMPOSITE ANALYSIS**

**API-1 (indicator)
(pCi/cubic meter)**

Nuclide	First Quarter			Second Quarter		
Be-7		7.50E-02	+/- 1.80E-02		1.86E-01	+/- 4.40E-02
K-40	<	3.00E-02		<	5.50E-02	
Mn-54	<	2.60E-03		<	4.00E-03	
Co-58	<	4.20E-03		<	1.20E-02	
Fe-59	<	9.90E-03		<	3.20E-02	
Co-60	<	2.30E-03		<	4.50E-03	
Zn-65	<	5.10E-03		<	1.80E-02	
Zr-95	<	5.50E-03		<	1.20E-02	
Ru-103	<	5.10E-03		<	9.60E-03	
Ru-106	<	1.70E-02		<	3.60E-02	
Cs-134	<	1.80E-03		<	1.30E-03	
Cs-137	<	1.80E-03		<	9.90E-04	
Ba-140	<	7.30E-02		<	3.30E-01	
La-140	<	8.40E-02		<	3.70E-01	
Ce-141	<	6.90E-03		<	2.70E-02	
Ce-144	<	7.00E-03		<	1.90E-02	

**API-1 (indicator)
(pCi/cubic meter)**

Nuclide	Third Quarter			Fourth Quarter		
Be-7		1.52E-01	+/- 3.60E-02		7.40E-02	+/- 1.20E-02
K-40	<	4.20E-02		<	1.70E-02	
Mn-54	<	4.30E-03		<	1.40E-03	
Co-58	<	1.10E-02		<	2.60E-03	
Fe-59	<	2.00E-02		<	1.10E-02	
Co-60	<	1.60E-03		<	1.60E-03	
Zn-65	<	1.80E-02		<	2.70E-03	
Zr-95	<	1.00E-02		<	5.00E-03	
Ru-103	<	1.10E-02		<	3.30E-03	
Ru-106	<	5.60E-02		<	1.00E-02	
Cs-134	<	5.70E-03		<	1.10E-03	
Cs-137	<	3.80E-03		<	7.30E-04	
Ba-140	<	1.80E-01		<	6.90E-02	
La-140	<	2.10E-01		<	6.90E-02	
Ce-141	<	1.80E-02		<	5.30E-03	
Ce-144	<	2.00E-02		<	3.80E-03	

**FERMI 2
AIR PARTICULATE QUARTERLY COMPOSITE ANALYSIS**

**API-2 (indicator)
(pCi/cubic meter)**

Nuclide	First Quarter			Second Quarter		
Be-7		1.55E-01	+/- 2.00E-02		2.59E-01	+/- 5.00E-02
K-40	<	3.20E-02		<	6.20E-02	
Mn-54	<	1.90E-03		<	3.20E-03	
Co-58	<	2.60E-03		<	6.30E-03	
Fe-59	<	1.10E-02		<	3.20E-02	
Co-60	<	2.60E-03		<	4.50E-03	
Zn-65	<	4.90E-03		<	9.20E-03	
Zr-95	<	7.00E-03		<	1.20E-02	
Ru-103	<	5.80E-03		<	1.20E-02	
Ru-106	<	1.80E-02		<	4.70E-02	
Cs-134	<	2.20E-03		<	3.20E-03	
Cs-137	<	1.80E-03		<	4.30E-03	
Ba-140	<	6.60E-02		<	3.30E-01	
La-140	<	7.60E-02		<	3.80E-01	
Ce-141	<	6.30E-03		<	2.30E-02	
Ce-144	<	4.90E-03		<	2.30E-02	

**API-2 (indicator)
(pCi/cubic meter)**

Nuclide	Third Quarter			Fourth Quarter		
Be-7		2.11E-01	+/- 4.10E-02		8.70E-02	+/- 2.80E-02
K-40	<	5.00E-02		<	2.90E-02	
Mn-54	<	1.20E-03		<	3.00E-03	
Co-58	<	1.00E-02		<	3.90E-03	
Fe-59	<	1.90E-02		<	2.00E-02	
Co-60	<	5.60E-03		<	3.20E-03	
Zn-65	<	1.40E-02		<	9.20E-03	
Zr-95	<	1.40E-02		<	1.10E-02	
Ru-103	<	1.20E-02		<	8.50E-03	
Ru-106	<	4.00E-02		<	2.60E-02	
Cs-134	<	5.00E-03		<	2.60E-03	
Cs-137	<	4.70E-03		<	6.30E-04	
Ba-140	<	1.40E-01		<	2.20E-01	
La-140	<	1.60E-01		<	2.20E-01	
Ce-141	<	1.70E-02		<	1.00E-02	
Ce-144	<	2.10E-02		<	9.90E-03	

**FERMI 2
AIR PARTICULATE QUARTERLY COMPOSITE ANALYSIS**

**API-3 (indicator)
(pCi/cubic meter)**

Nuclide	First Quarter		Second Quarter	
Be-7	1.12E-01	+/- 1.80E-02	1.93E-01	+/- 4.50E-02
K-40	< 2.10E-02		< 5.50E-02	
Mn-54	< 1.70E-03		< 4.70E-03	
Co-58	< 3.30E-03		< 7.90E-03	
Fe-59	< 1.30E-02		< 4.50E-02	
Co-60	< 2.10E-03		< 6.70E-03	
Zn-65	< 5.00E-03		< 3.40E-03	
Zr-95	< 6.00E-03		< 1.20E-02	
Ru-103	< 4.20E-03		< 1.60E-02	
Ru-106	< 1.90E-02		< 4.20E-02	
Cs-134	< 2.40E-03		< 3.20E-03	
Cs-137	< 1.50E-03		< 3.70E-03	
Ba-140	< 1.20E-01		< 1.20E-01	
La-140	< 1.40E-01		< 1.40E-01	
Ce-141	< 6.40E-03		< 2.80E-02	
Ce-144	< 6.70E-03		< 1.60E-02	

**API-3 (indicator)
(pCi/cubic meter)**

Nuclide	Third Quarter		Fourth Quarter	
Be-7	1.15E-01	+/- 1.80E-02	7.98E-02	+/- 8.80E-03
K-40	< 2.40E-02		< 1.20E-02	
Mn-54	< 2.00E-03		< 8.70E-04	
Co-58	< 4.00E-03		< 1.60E-03	
Fe-59	< 1.60E-02		< 5.90E-03	
Co-60	< 2.40E-03		< 1.00E-03	
Zn-65	< 6.10E-03		< 2.50E-03	
Zr-95	< 4.10E-03		< 3.40E-03	
Ru-103	< 5.40E-03		< 2.90E-03	
Ru-106	< 1.90E-02		< 6.60E-03	
Cs-134	< 1.70E-03		< 1.20E-03	
Cs-137	< 1.90E-03		< 7.40E-04	
Ba-140	< 1.80E-01		< 5.40E-02	
La-140	< 1.80E-01		< 5.40E-02	
Ce-141	< 6.20E-03		< 3.50E-03	
Ce-144	< 5.80E-03		< 2.70E-03	

**FERMI 2
AIR PARTICULATE QUARTERLY COMPOSITE ANALYSIS**

API-4 (control)
(pCi/cubic meter)

Nuclide	First Quarter		Second Quarter	
Be-7	7.20E-02	+/- 1.40E-02	1.35E-01	+/- 4.00E-02
K-40	< 2.10E-02		< 5.50E-02	
Mn-54	< 2.30E-03		< 1.30E-03	
Co-58	< 3.00E-03		< 7.90E-03	
Fe-59	< 6.10E-03		< 2.50E-02	
Co-60	< 2.10E-03		< 5.80E-03	
Zn-65	< 4.90E-03		< 1.50E-02	
Zr-95	< 5.80E-03		< 1.70E-02	
Ru-103	< 3.70E-03		< 1.40E-02	
Ru-106	< 1.30E-02		< 4.20E-02	
Cs-134	< 2.10E-03		< 4.60E-03	
Cs-137	< 1.50E-03		< 5.30E-03	
Ba-140	< 4.10E-02		< 4.10E-01	
La-140	< 4.70E-02		< 4.70E-01	
Ce-141	< 6.50E-03		< 2.20E-02	
Ce-144	< 6.40E-03		< 1.80E-02	

API-4 (control)
(pCi/cubic meter)

Nuclide	Third Quarter		Fourth Quarter	
Be-7	1.40E-01	+/- 3.30E-02	1.36E-01	+/- 2.80E-02
K-40	< 5.70E-02		< 3.10E-02	
Mn-54	< 4.10E-03		< 4.10E-03	
Co-58	< 7.70E-03		< 7.60E-03	
Fe-59	< 2.40E-02		< 2.60E-02	
Co-60	< 5.60E-03		< 3.70E-03	
Zn-65	< 1.40E-02		< 7.20E-03	
Zr-95	< 1.40E-02		< 9.30E-03	
Ru-103	< 1.30E-02		< 7.50E-03	
Ru-106	< 3.40E-02		< 3.40E-02	
Cs-134	< 4.50E-03		< 2.80E-03	
Cs-137	< 3.60E-03		< 2.00E-03	
Ba-140	< 1.70E-01		< 2.80E-01	
La-140	< 2.00E-01		< 2.80E-01	
Ce-141	< 2.00E-02		< 1.00E-02	
Ce-144	< 2.40E-02		< 7.50E-03	

FERMI 2 AIR PARTICULATE QUARTERLY COMPOSITE ANALYSIS

API-5 (Indicator)
(pCi/cubic meter)

Nuclide	First Quarter		Second Quarter	
Be-7	1.04E-01	+/- 2.00E-02	1.75E-01	+/- 5.30E-02
K-40	< 3.10E-02		< 4.60E-02	
Mn-54	< 2.90E-03		< 5.30E-03	
Co-58	< 4.50E-03		< 2.80E-03	
Fe-59	< 1.30E-02		< 3.80E-02	
Co-60	< 4.00E-03		< 1.60E-03	
Zn-65	< 5.70E-03		< 9.50E-03	
Zr-95	< 1.90E-03		< 2.70E-02	
Ru-103	< 4.80E-03		< 2.30E-02	
Ru-106	< 2.00E-02		< 3.70E-02	
Cs-134	< 1.80E-03		< 6.50E-03	
Cs-137	< 2.10E-03		< 4.80E-03	
Ba-140	< 9.10E-02		< 6.20E-01	
La-140	< 1.10E-01		< 7.20E-01	
Ce-141	< 7.40E-03		< 3.30E-02	
Ce-144	< 6.50E-03		< 2.20E-02	

API-5 (Indicator)
(pCi/cubic meter)

Nuclide	Third Quarter		Fourth Quarter	
Be-7	1.15E-01	+/- 3.50E-02	6.41E-02	+/- 9.00E-03
K-40	< 5.10E-02		1.20E-02	+/- 3.50E-03
Mn-54	< 4.80E-03		< 1.20E-03	
Co-58	< 7.80E-03		< 2.30E-03	
Fe-59	< 3.20E-02		< 6.20E-03	
Co-60	< 4.50E-03		< 1.40E-03	
Zn-65	< 1.40E-02		< 2.60E-03	
Zr-95	< 1.20E-02		< 3.80E-03	
Ru-103	< 9.30E-03		< 3.40E-03	
Ru-106	< 5.00E-02		< 9.40E-03	
Cs-134	< 4.00E-03		< 1.00E-03	
Cs-137	< 4.30E-03		< 7.80E-04	
Ba-140	< 1.70E-01		< 5.50E-02	
La-140	< 2.00E-01		< 5.50E-02	
Ce-141	< 1.90E-02		< 3.90E-03	
Ce-144	< 1.90E-02		< 3.70E-03	

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**FERMI 2
MILK ANALYSIS**

**M-2 (Indicator)
(pCi/liter)**

Nuclide	18-JAN		22-FEB		15-MAR	
I-131	<	7.40E-01	<	8.10E-01	<	7.30E-01
Sr-89	<	5.20E+00	<	7.40E+00	<	6.10E+00
Sr-90	<	1.40E+00	<	1.50E+00	<	1.40E+00
Be-7	<	5.20E+01	<	8.10E+01	<	5.80E+01
K-40		1.44E+03 +/- 6.40E+01		1.28E+03 +/- 9.50E+01		1.51E+03 +/- 9.10E+01
Mn-54	<	6.40E+00	<	1.10E+01	<	8.40E+00
Co-58	<	7.10E+00	<	1.00E+01	<	7.60E+00
Fe-59	<	1.40E+01	<	2.10E+01	<	2.10E+01
Co-60	<	6.90E+00	<	1.10E+01	<	9.70E+00
Zn-65	<	1.80E+01	<	2.50E+01	<	2.30E+01
Zr-95	<	1.10E+01	<	1.70E+01	<	1.60E+01
Ru-103	<	7.00E+00	<	9.90E+00	<	9.50E+00
Ru-106	<	6.30E+01	<	9.50E+01	<	8.60E+01
Cs-134	<	7.70E+00	<	9.80E+00	<	9.70E+00
Cs-137	<	6.20E+00	<	1.10E+01	<	8.80E+00
Ba-140	<	8.60E+00	<	9.70E+00	<	1.20E+01
La-140	<	9.90E+00	<	1.10E+01	<	1.40E+01
Ce-141	<	9.30E+00	<	1.30E+01	<	1.10E+01
Ce-144	<	3.50E+01	<	5.40E+01	<	4.50E+01

Nuclide	19-APR		10-MAY		24-MAY	
I-131	<	9.40E-01	<	6.20E-01	<	6.80E-01
Sr-89	<	6.90E+00	<	5.40E+00	<	6.50E+00
Sr-90	<	1.40E+00	<	1.40E+00	1.24E+00 +/-	3.80E-01
Be-7	<	4.00E+01	<	6.80E+01	<	5.90E+01
K-40		1.20E+03 +/- 5.70E+01		1.38E+03 +/- 7.10E+01		1.25E+03 +/- 8.20E+01
Mn-54	<	6.10E+00	<	6.50E+00	<	7.60E+00
Co-58	<	5.30E+00	<	8.20E+00	<	7.70E+00
Fe-59	<	1.40E+01	<	1.60E+01	<	2.20E+01
Co-60	<	6.10E+00	<	7.20E+00	<	1.20E+01
Zn-65	<	1.40E+01	<	1.80E+01	<	2.30E+01
Zr-95	<	1.00E+01	<	1.30E+01	<	1.50E+01
Ru-103	<	5.30E+00	<	7.80E+00	<	8.40E+00
Ru-106	<	4.50E+01	<	6.40E+01	<	6.70E+01
Cs-134	<	6.30E+00	<	7.60E+00	<	8.60E+00
Cs-137	<	5.20E+00	<	6.60E+00	<	8.50E+00
Ba-140	<	7.70E+00	<	8.90E+00	<	1.00E+01
La-140	<	8.90E+00	<	1.00E+01	<	1.20E+01
Ce-141	<	7.10E+00	<	1.10E+01	<	1.20E+01
Ce-144	<	2.00E+01	<	3.50E+01	<	3.50E+01

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**FERMI 2
MILK ANALYSIS**

**M-2 (Indicator)
(pCi/liter)**

Nuclide	7-JUN		21-JUN		12-JUL	
I-131	<	7.90E-01	<	8.60E-01	<	5.20E-01
Sr-89	<	6.90E+00	<	8.30E+00	<	6.90E+00
Sr-90	<	1.30E+00	<	1.80E+00	<	1.40E+00
Be-7	<	7.50E+01	<	4.10E+01	<	4.50E+01
K-40	1.57E+03	+/- 8.80E+01	1.40E+03	+/- 6.40E+01	1.26E+03	+/- 6.60E+01
Mn-54	<	9.10E+00	<	5.20E+00	<	6.40E+00
Co-58	<	7.70E+00	<	6.00E+00	<	7.30E+00
Fe-59	<	2.40E+01	<	1.50E+01	<	1.70E+01
Co-60	<	9.70E+00	<	6.70E+00	<	6.00E+00
Zn-65	<	2.10E+01	<	1.30E+01	<	1.50E+01
Zr-95	<	1.40E+01	<	1.00E+01	<	1.10E+01
Ru-103	<	9.70E+00	<	5.80E+00	<	6.50E+00
Ru-106	<	7.50E+01	<	4.60E+01	<	5.40E+01
Cs-134	<	9.20E+00	<	6.00E+00	<	1.10E+01
Cs-137	<	9.00E+00	<	6.30E+00	<	6.90E+00
Ba-140	<	1.10E+01	<	1.30E+01	<	1.20E+01
La-140	<	1.20E+01	<	1.50E+01	<	1.40E+01
Ce-141	<	1.30E+01	<	7.60E+00	<	7.60E+00
Ce-144	<	3.90E+01	<	2.60E+01	<	7.60E+00

Nuclide	26-JUL		16-AUG		30-AUG	
I-131	<	7.20E-01	<	8.90E-01	<	7.20E-01
Sr-89	<	8.00E+00	<	7.00E+00	<	7.10E+00
Sr-90	<	1.40E+00	<	1.30E+00	<	1.40E+00
Be-7	<	5.20E+01	<	3.70E+01	<	7.50E+01
K-40	1.50E+03	+/- 8.20E+01	1.37E+03	+/- 4.90E+01	1.38E+03	+/- 6.40E+01
Mn-54	<	6.80E+00	<	4.70E+00	<	9.10E+00
Co-58	<	8.20E+00	<	5.20E+00	<	8.80E+00
Fe-59	<	1.90E+01	<	1.30E+01	<	1.90E+01
Co-60	<	9.80E+00	<	5.30E+00	<	9.20E+00
Zn-65	<	1.80E+01	<	1.10E+01	<	2.10E+01
Zr-95	<	1.40E+01	<	8.80E+00	<	1.50E+01
Ru-103	<	6.80E+00	<	5.10E+00	<	1.00E+01
Ru-106	<	6.50E+01	<	3.70E+01	<	9.00E+01
Cs-134	<	8.40E+00	<	4.70E+00	<	9.90E+00
Cs-137	<	7.20E+00	<	3.90E+00	<	1.00E+01
Ba-140	<	1.20E+01	<	1.20E+01	<	1.40E+01
La-140	<	1.40E+01	<	1.40E+01	<	1.50E+01
Ce-141	<	9.30E+00	<	6.50E+00	<	1.30E+01
Ce-144	<	2.60E+01	<	2.00E+01	<	4.80E+01

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**FERMI 2
MILK ANALYSIS**

**M-2 (Indicator)
(pCi/liter)**

Nuclide	13-SEP		27-SEP		25-OCT	
I-131	<	6.10E-01	<	9.00E-01	<	4.30E-01
Sr-89	<	5.30E+00	<	8.60E+00	<	7.20E+00
Sr-90	<	1.30E+00	<	1.60E+00	<	1.50E+00
Be-7	<	5.00E+01	<	5.70E+01	<	7.50E+01
K-40		1.45E+03 +/- 7.00E+01		1.42E+03 +/- 7.70E+01		1.42E+03 +/- 8.80E+01
Mn-54	<	6.70E+00	<	6.50E+00	<	1.00E+01
Co-58	<	6.10E+00	<	6.60E+00	<	9.60E+00
Fe-59	<	1.30E+01	<	1.60E+01	<	2.30E+01
Co-60	<	7.60E+00	<	8.20E+00	<	9.40E+00
Zn-65	<	2.50E+01	<	1.80E+01	<	2.70E+01
Zr-95	<	1.20E+01	<	1.20E+01	<	1.30E+01
Ru-103	<	7.50E+00	<	6.80E+00	<	9.90E+00
Ru-106	<	6.00E+01	<	6.10E+01	<	9.30E+01
Cs-134	<	7.10E+00	<	8.70E+00	<	1.10E+01
Cs-137	<	5.90E+00	<	6.80E+00	<	9.60E+00
Ba-140	<	1.20E+01	<	1.20E+01	<	1.30E+01
La-140	<	1.40E+01	<	1.30E+01	<	1.30E+01
Ce-141	<	1.00E+01	<	1.00E+01	<	1.40E+01
Ce-144	<	3.40E+01	<	3.30E+01	<	4.70E+01

Nuclide	15-NOV		13-DEC	
I-131	<	5.90E-01	<	7.70E-01
Sr-89	<	8.10E+00	<	8.50E+00
Sr-90	<	1.80E+00	<	1.40E+00
Be-7	<	5.60E+01	<	6.40E+01
K-40		1.53E+03 +/- 7.60E+01		1.36E+03 +/- 7.90E+01
Mn-54	<	7.10E+00	<	6.90E+00
Co-58	<	7.00E+00	<	7.90E+00
Fe-59	<	1.70E+01	<	2.20E+01
Co-60	<	8.80E+00	<	9.40E+00
Zn-65	<	1.70E+01	<	2.50E+01
Zr-95	<	1.30E+01	<	1.40E+01
Ru-103	<	7.70E+00	<	9.70E+00
Ru-106	<	5.70E+01	<	6.90E+01
Cs-134	<	6.60E+00	<	9.30E+00
Cs-137	<	6.60E+00	<	7.50E+00
Ba-140	<	1.40E+01	<	1.30E+01
La-140	<	1.40E+01	<	1.30E+01
Ce-141	<	1.00E+01	<	1.10E+01
Ce-144	<	3.20E+01	<	3.80E+01

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**FERMI 2
MILK ANALYSIS**

**M-8 (Control)
(pCi/liter)**

Nuclide	18-JAN		22-FEB		15-MAR	
I-131	<	8.00E-01	<	8.80E-01	<	5.50E-01
Sr-89	<	6.20E+00	<	7.40E+00	<	6.20E+00
Sr-90	<	1.70E+00	<	1.50E+00	<	1.40E+00
Be-7	<	6.20E+01	<	6.00E+01	<	4.10E+01
K-40		1.40E+03 +/- 8.40E+01		1.40E+03 +/- 7.60E+01		1.39E+03 +/- 6.00E+01
Mn-54	<	8.30E+00	<	7.20E+00	<	6.10E+00
Co-58	<	9.30E+00	<	7.40E+00	<	5.60E+00
Fe-59	<	2.10E+01	<	1.60E+01	<	1.50E+01
Co-60	<	1.00E+01	<	7.30E+00	<	5.90E+00
Zn-65	<	2.10E+01	<	3.10E+01	<	1.40E+01
Zr-95	<	1.60E+01	<	1.40E+01	<	9.90E+00
Ru-103	<	8.00E+00	<	8.00E+00	<	5.40E+00
Ru-106	<	7.00E+01	<	7.00E+01	<	4.70E+01
Cs-134	<	7.70E+00	<	7.90E+00	<	6.20E+00
Cs-137	<	7.40E+00	<	8.20E+00	<	4.90E+00
Ba-140	<	1.30E+01	<	1.20E+01	<	1.00E+01
La-140	<	1.50E+01	<	1.40E+01	<	1.20E+01
Ce-141	<	9.80E+00	<	1.00E+01	<	7.00E+00
Ce-144	<	3.20E+01	<	4.10E+01	<	2.10E+01

Nuclide	19-APR		10-MAY		24-MAY	
I-131	<	8.90E-01	<	6.30E-01	<	8.20E-01
Sr-89	<	8.50E+00	<	7.30E+00	<	8.40E+00
Sr-90	<	1.80E+00	<	1.50E+00	<	1.60E+00
Be-7	<	3.90E+01	<	6.30E+01	<	5.00E+01
K-40		1.45E+03 +/- 5.00E+01		1.36E+03 +/- 8.70E+01		1.42E+03 +/- 6.70E+01
Mn-54	<	4.40E+00	<	7.30E+00	<	6.20E+00
Co-58	<	5.00E+00	<	8.70E+00	<	6.40E+00
Fe-59	<	1.20E+01	<	2.00E+01	<	1.50E+01
Co-60	<	5.00E+00	<	1.10E+01	<	6.40E+00
Zn-65	<	1.20E+01	<	1.80E+01	<	1.50E+01
Zr-95	<	8.80E+00	<	1.60E+01	<	1.00E+01
Ru-103	<	5.10E+00	<	8.80E+00	<	6.10E+00
Ru-106	<	4.20E+01	<	6.60E+01	<	5.00E+01
Cs-134	<	5.30E+00	<	9.80E+00	<	6.10E+00
Cs-137	<	4.40E+00	<	8.50E+00	<	5.30E+00
Ba-140	<	7.80E+00	<	1.10E+01	<	1.20E+01
La-140	<	9.00E+00	<	1.30E+01	<	1.40E+01
Ce-141	<	6.40E+00	<	1.00E+01	<	7.20E+00
Ce-144	<	2.30E+01	<	3.50E+01	<	2.40E+01

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**FERMI 2
MILK ANALYSIS**

**M-8 (Control)
(pCi/liter)**

Nuclide	7-JUN		21-JUN		12-JUL	
I-131	<	8.00E-01	<	7.90E-01	<	4.70E-01
Sr-89	<	8.70E+00	<	7.80E+00	<	8.30E+00
Sr-90	<	1.70E+00	<	1.70E+00	<	1.70E+00
Be-7	<	4.80E+01	<	4.60E+01	<	6.60E+01
K-40		1.37E+03 +/- 8.80E+01		1.42E+03 +/- 6.90E+01		1.41E+03 +/- 6.60E+01
Mn-54	<	8.00E+00	<	6.80E+00	<	6.50E+00
Co-58	<	8.70E+00	<	7.50E+00	<	6.90E+00
Fe-59	<	2.30E+01	<	1.90E+01	<	1.70E+01
Co-60	<	9.80E+00	<	7.80E+00	<	6.60E+00
Zn-65	<	2.20E+01	<	1.80E+01	<	1.60E+01
Zr-95	<	1.50E+01	<	1.10E+01	<	1.20E+01
Ru-103	<	7.40E+00	<	7.90E+00	<	8.60E+00
Ru-106	<	6.20E+01	<	6.60E+01	<	6.30E+01
Cs-134	<	8.60E+00	<	7.10E+00	<	7.10E+00
Cs-137	<	7.80E+00	<	6.10E+00	<	6.50E+00
Ba-140	<	1.10E+01	<	1.10E+01	<	1.20E+01
La-140	<	1.30E+01	<	1.30E+01	<	1.40E+01
Ce-141	<	6.80E+00	<	1.10E+01	<	1.20E+01
Ce-144	<	3.60E+01	<	3.40E+01	<	3.30E+01

Nuclide	26-JUL		16-AUG		30-AUG	
I-131	<	4.30E-01	<	9.00E-01	<	7.00E-01
Sr-89	<	7.90E+00	<	8.80E+00	<	8.30E+00
Sr-90	<	1.50E+00	<	1.80E+00	<	1.70E+00
Be-7	<	6.00E+01	<	3.30E+01	<	7.50E+01
K-40		1.54E+03 +/- 9.00E+01		1.45E+03 +/- 4.50E+01		1.40E+03 +/- 8.50E+01
Mn-54	<	8.40E+00	<	4.00E+00	<	9.30E+00
Co-58	<	7.80E+00	<	4.90E+00	<	9.30E+00
Fe-59	<	2.20E+01	<	1.20E+01	<	2.10E+01
Co-60	<	1.10E+01	<	4.70E+00	<	9.20E+00
Zn-65	<	1.80E+01	<	1.00E+01	<	2.90E+01
Zr-95	<	1.60E+01	<	8.60E+00	<	1.60E+01
Ru-103	<	8.30E+00	<	5.40E+00	<	1.00E+01
Ru-106	<	6.30E+01	<	4.00E+01	<	8.60E+01
Cs-134	<	9.00E+00	<	4.50E+00	<	8.60E+00
Cs-137	<	8.40E+00	<	3.70E+00	<	8.10E+00
Ba-140	<	1.20E+01	<	1.10E+01	<	1.10E+01
La-140	<	1.30E+01	<	1.30E+01	<	1.30E+01
Ce-141	<	1.00E+01	<	1.00E+01	<	1.40E+01
Ce-144	<	3.60E+01	<	2.20E+01	<	5.20E+01

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**FERMI 2
MILK ANALYSIS**

**M-8 (Control)
(pCi/liter)**

Nuclide	13-SEP		27-SEP		25-OCT	
I-131	<	5.90E-01	<	5.90E-01	<	3.70E-01
Sr-89	<	5.50E+00	<	5.70E+00	<	7.40E+00
Sr-90	<	1.30E+00	<	1.80E+00	<	1.50E+00
Be-7	<	4.00E+01	<	5.00E+01	<	6.70E+01
K-40		1.51E+03 +/- 5.80E+01		1.51E+03 +/- 6.00E+01		1.36E+03 +/- 8.30E+01
Mn-54	<	5.30E+00	<	5.70E+00	<	7.80E+00
Co-58	<	4.90E+00	<	5.20E+00	<	8.10E+00
Fe-59	<	1.30E+01	<	1.40E+01	<	1.80E+01
Co-60	<	5.70E+00	<	5.20E+00	<	9.60E+00
Zn-65	<	1.40E+01	<	1.40E+01	<	2.00E+01
Zr-95	<	8.80E+00	<	9.70E+00	<	1.50E+01
Ru-103	<	5.90E+00	<	6.30E+00	<	7.30E+00
Ru-106	<	4.90E+01	<	5.30E+01	<	6.90E+01
Cs-134	<	5.60E+00	<	5.80E+00	<	8.20E+00
Cs-137	<	4.90E+00	<	5.70E+00	<	8.90E+00
Ba-140	<	7.60E+00	<	9.90E+00	<	1.30E+01
La-140	<	8.70E+00	<	1.10E+01	<	1.30E+01
Ce-141	<	8.60E+00	<	9.50E+00	<	1.20E+01
Ce-144	<	2.90E+01	<	2.90E+01	<	4.40E+01

Nuclide	15-NOV		13-DEC	
I-131	<	6.50E-01	<	8.40E-01
Sr-89	<	7.40E+00	<	8.90E+00
Sr-90	<	1.70E+00	<	1.60E+00
Be-7	<	5.10E+01	<	6.40E+01
K-40		1.40E+03 +/- 6.00E+01		1.30E+03 +/- 8.20E+01
Mn-54	<	5.40E+00	<	7.80E+00
Co-58	<	5.60E+00	<	8.40E+00
Fe-59	<	1.30E+01	<	1.50E+01
Co-60	<	5.30E+00	<	9.40E+00
Zn-65	<	1.30E+01	<	2.20E+01
Zr-95	<	1.10E+01	<	1.40E+01
Ru-103	<	7.30E+00	<	8.40E+00
Ru-106	<	4.50E+01	<	7.80E+01
Cs-134	<	5.80E+00	<	8.40E+00
Cs-137	<	5.90E+00	<	7.00E+00
Ba-140	<	1.20E+01	<	1.20E+01
La-140	<	1.20E+01	<	1.20E+01
Ce-141	<	8.80E+00	<	1.30E+01
Ce-144	<	2.80E+01	<	4.20E+01

**FERMI 2
VEGETABLE ANALYSIS**

**FP-1 (Indicator)
(pCi/kg wet)**

Nuclide	26-JUL Cabbage		26-JUL Lettuce		26-JUL Swiss Chard	
I-131	<	4.80E+01	<	4.20E+01	<	4.40E+01
Be-7	<	3.80E+02	<	4.70E+02	<	4.80E+02
K-40		4.30E+03 +/- 5.00E+02		6.99E+03 +/- 5.90E+02		4.25E+03 +/- 5.70E+02
Mn-54	<	5.10E+01	<	6.30E+01	<	5.20E+01
Co-58	<	4.30E+01	<	4.90E+01	<	6.70E+01
Fe-59	<	1.10E+02	<	1.20E+02	<	8.40E+01
Co-60	<	4.80E+01	<	5.90E+01	<	6.80E+01
Zn-65	<	1.40E+02	<	1.20E+02	<	1.50E+02
Zr-95	<	9.30E+01	<	8.50E+01	<	1.30E+02
Ru-103	<	4.10E+01	<	4.60E+01	<	6.20E+01
Ru-106	<	3.80E+02	<	4.00E+02	<	5.70E+02
Cs-134	<	4.60E+01	<	5.00E+01	<	5.80E+01
Cs-137	<	6.40E+01	<	5.40E+01	<	5.40E+01
Ba-140	<	5.80E+01	<	5.50E+01	<	1.50E+02
La-140	<	6.70E+01	<	6.30E+01	<	1.70E+02
Ce-141	<	9.30E+01	<	6.10E+01	<	5.00E+01
Ce-144	<	1.90E+02	<	2.60E+02	<	1.80E+02

**FP-1 (Indicator)
(pCi/kg wet)**

Nuclide	30-AUG Broccoli		30-AUG Cabbage		30-AUG Collards	
I-131	<	4.30E+01	<	4.20E+01	<	5.20E+01
Be-7	<	5.00E+02	<	3.50E+02		5.50E+02 +/- 1.50E+02
K-40		1.51E+03 +/- 3.40E+02		2.04E+03 +/- 3.90E+02		3.27E+03 +/- 4.40E+02
Mn-54	<	5.10E+01	<	4.30E+01	<	5.30E+01
Co-58	<	6.00E+01	<	6.10E+01	<	5.30E+01
Fe-59	<	1.40E+02	<	9.40E+01	<	1.00E+02
Co-60	<	9.60E+01	<	4.10E+01	<	6.00E+01
Zn-65	<	1.80E+02	<	9.70E+01	<	1.40E+02
Zr-95	<	9.70E+01	<	1.20E+02	<	1.00E+02
Ru-103	<	3.90E+01	<	5.80E+01	<	5.80E+01
Ru-106	<	5.90E+02	<	5.60E+02	<	4.00E+02
Cs-134	<	5.60E+01	<	4.80E+01	<	4.30E+01
Cs-137	<	3.20E+01	<	5.60E+01	<	5.00E+01
Ba-140	<	6.50E+01	<	8.00E+01	<	8.40E+01
La-140	<	7.50E+01	<	9.20E+01	<	9.70E+01
Ce-141	<	6.50E+01	<	6.40E+01	<	7.00E+01
Ce-144	<	2.20E+02	<	2.40E+02	<	2.20E+02

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**FERMI 2
VEGETABLE ANALYSIS**

**FP-9 (Control)
(pCi/kg wet)**

Nuclide	26-JUL Cabbage		26-JUL Collards		26-JUL Red Cabbage	
I-131	<	3.80E+01	<	5.20E+01	<	2.60E+01
Be-7	<	2.90E+02	7.70E+02	+/- 2.10E+02	<	3.30E+02
K-40		4.12E+03 +/- 3.10E+02	4.19E+03	+/- 4.60E+02	5.73E+03	+/- 4.60E+02
Mn-54	<	3.00E+01	<	5.90E+01	<	4.80E+01
Co-58	<	3.30E+01	<	4.70E+01	<	4.20E+01
Fe-59	<	7.60E+01	<	1.40E+02	<	1.10E+02
Co-60	<	3.50E+01	<	6.50E+01	<	4.80E+01
Zn-65	<	9.30E+01	<	1.70E+02	<	1.00E+02
Zr-95	<	5.70E+01	<	8.10E+01	<	8.20E+01
Ru-103	<	2.90E+01	<	6.10E+01	<	4.20E+01
Ru-106	<	2.90E+02	<	5.10E+02	<	4.40E+02
Cs-134	<	3.60E+01	<	5.40E+01	<	5.20E+01
Cs-137	<	3.20E+01	<	4.50E+01	<	4.90E+01
Ba-140	<	5.60E+01	<	7.80E+01	<	4.20E+01
La-140	<	6.40E+01	<	9.00E+01	<	4.90E+01
Ce-141	<	3.90E+01	<	6.30E+01	<	5.00E+01
Ce-144	<	1.50E+02	<	2.50E+02	<	2.40E+02

**FP-9 (Control)
(pCi/kg wet)**

Nuclide	30-AUG Cabbage		30-AUG Collards		30-AUG Horse Radish	
I-131	<	5.20E+01	<	5.00E+01	<	4.90E+01
Be-7		7.00E+02 +/- 1.50E+02	<	3.20E+02	3.20E+03	+/- 2.50E+02
K-40		3.79E+03 +/- 3.90E+02	4.85E+03	+/- 5.10E+02	4.06E+03	+/- 3.80E+02
Mn-54	<	4.60E+01	<	4.60E+01	<	4.40E+01
Co-58	<	4.80E+01	<	3.90E+01	<	4.70E+01
Fe-59	<	1.20E+02	<	1.40E+02	<	1.10E+02
Co-60	<	4.80E+01	<	4.70E+01	<	5.70E+01
Zn-65	<	1.20E+02	<	1.20E+02	<	1.10E+02
Zr-95	<	7.60E+01	<	9.20E+01	<	9.50E+01
Ru-103	<	4.10E+01	<	4.20E+01	<	4.20E+01
Ru-106	<	3.70E+02	<	4.00E+02	<	4.70E+02
Cs-134	<	4.60E+01	<	5.60E+01	<	5.50E+01
Cs-137	<	5.20E+01	<	5.90E+01	<	5.90E+01
Ba-140	<	6.80E+01	<	7.00E+01	<	1.00E+02
La-140	<	7.80E+01	<	8.00E+01	<	1.20E+02
Ce-141	<	5.90E+01	<	5.40E+01	<	6.40E+01
Ce-144	<	2.20E+02	<	1.70E+02	<	2.40E+02

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**FERMI 2
DRINKING WATER ANALYSIS**

**DW-1 (Indicator)
(pCi/liter)**

Nuclide	31-JAN		28-FEB		28-MAR	
GR-B	< 4.10E+00	+/- 1.10E+00	< 6.40E+00	+/- 1.30E+00	< 3.10E+00	
Sr-89	< 8.00E+00		< 7.70E+00		< 5.50E+00	
Sr-90	< 1.50E+00		< 1.80E+00		< 1.40E+00	
Be-7	< 5.60E+01		< 4.70E+01		< 6.20E+01	
K-40	< 1.00E+02		< 1.00E+02		< 9.90E+01	
Mn-54	< 8.20E+00		< 6.40E+00		< 7.00E+00	
Co-58	< 6.60E+00		< 5.20E+00		< 7.60E+00	
Fe-59	< 1.40E+01		< 1.20E+01		< 1.40E+01	
Co-60	< 8.80E+00		< 6.90E+00		< 9.40E+00	
Zn-65	< 1.50E+01		< 1.60E+01		< 1.70E+01	
Zr-95	< 1.40E+01		< 1.10E+01		< 1.30E+01	
Ru-103	< 6.40E+00		< 6.60E+00		< 5.50E+00	
Ru-106	< 6.40E+01		< 5.50E+01		< 6.70E+01	
Cs-134	< 8.70E+00		< 6.70E+00		< 7.30E+00	
Cs-137	< 7.70E+00		< 6.70E+00		< 7.20E+00	
Ba-140	< 1.20E+01		< 1.10E+01		< 1.20E+01	
La-140	< 1.40E+01		< 1.30E+01		< 1.40E+01	
Ce-141	< 9.00E+00		< 8.10E+00		< 9.40E+00	
Ce-144	< 3.40E+01		< 3.00E+01		< 3.40E+01	

Nuclide	25-APR		30-MAY		26-JUN	
GR-B	< 3.10E+00		< 3.20E+00		< 3.10E+00	
Sr-89	< 4.60E+00		< 7.60E+00		< 6.20E+00	
Sr-90	< 1.40E+00		< 7.60E+00		< 1.70E+00	
Be-7	< 3.70E+01		< 1.60E+00		< 2.80E+01	
K-40	< 7.50E+01		< 4.50E+01		< 6.90E+01	
Mn-54	< 4.50E+00		< 4.30E+01		< 3.20E+00	
Co-58	< 4.60E+00		< 5.10E+00		< 3.40E+00	
Fe-59	< 1.10E+01		< 5.10E+00		< 8.30E+00	
Co-60	< 5.50E+00		< 5.70E+00		< 4.20E+00	
Zn-65	< 1.20E+01		< 1.10E+01		< 7.30E+00	
Zr-95	< 7.60E+00		< 5.60E+00		< 6.60E+00	
Ru-103	< 5.00E+00		< 5.60E+00		< 4.10E+00	
Ru-106	< 4.90E+01		< 1.30E+01		< 3.10E+01	
Cs-134	< 4.90E+00		< 1.10E+01		< 6.60E+00	
Cs-137	< 5.50E+00		< 5.90E+00		< 3.70E+00	
Ba-140	< 9.70E+00		< 5.00E+01		< 8.30E+00	
La-140	< 1.10E+01		< 5.50E+00		< 9.50E+00	
Ce-141	< 6.70E+00		< 5.50E+00		< 6.90E+00	
Ce-144	< 2.10E+01		< 1.10E+01		< 1.60E+01	

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**FERMI 2
DRINKING WATER ANALYSIS**

**DW-1 (Indicator)
(pCi/liter)**

Nuclide	25-JUL		29-AUG		28-SEP	
GR-B	3.30E+00	+/- 1.00E+00	< 2.80E+00		7.10E+00	+/- 1.20E+00
Sr-89	< 8.80E+00		< 8.70E+00		< 8.00E+00	
Sr-90	< 1.40E+00		< 1.60E+00		< 1.70E+00	
Be-7	< 5.70E+01		< 5.00E+01		< 4.10E+01	
K-40	< 9.90E+01		< 1.20E+02		< 7.30E+01	
Mn-54	< 7.20E+00		< 5.70E+00		< 3.90E+00	
Co-58	< 6.20E+00		< 6.50E+00		< 4.80E+00	
Fe-59	< 1.40E+01		< 1.40E+01		< 1.10E+01	
Co-60	< 7.50E+00		< 7.10E+00		< 5.00E+00	
Zn-65	< 1.70E+01		< 1.20E+01		< 1.30E+01	
Zr-95	< 1.30E+01		< 1.10E+01		< 8.30E+00	
Ru-103	< 8.30E+00		< 5.80E+00		< 6.50E+00	
Ru-106	< 5.80E+01		< 5.80E+01		< 4.60E+01	
Cs-134	< 7.20E+00		< 6.50E+00		< 5.20E+00	
Cs-137	< 6.60E+00		< 5.70E+00		< 4.00E+00	
Ba-140	< 1.30E+01		< 1.20E+01		< 1.10E+01	
La-140	< 1.40E+01		< 1.40E+01		< 1.30E+01	
Ce-141	< 1.20E+01		< 8.10E+00		< 9.80E+00	
Ce-144	< 3.50E+01		< 2.70E+01		< 2.30E+01	

Nuclide	31-OCT		28-NOV		26-DEC	
GR-B	6.40E+00	+/- 1.20E+00	4.50E+00	+/- 1.10E+00	< 3.00E+00	
Sr-89	< 7.20E+00		< 6.10E+00		< 6.70E+00	
Sr-90	< 1.40E+00		< 1.50E+00		< 1.70E+00	
Be-7	< 5.10E+01		< 7.00E+01		< 5.40E+01	
K-40	< 1.00E+02		< 1.10E+02		< 9.80E+01	
Mn-54	< 5.70E+00		< 8.10E+00		< 6.60E+00	
Co-58	< 7.10E+00		< 7.20E+00		< 5.60E+00	
Fe-59	< 1.40E+01		< 1.50E+01		< 1.50E+01	
Co-60	< 8.50E+00		< 7.90E+00		< 6.00E+00	
Zn-65	< 1.60E+01		< 2.20E+01		< 2.60E+01	
Zr-95	< 1.10E+01		< 1.40E+01		< 1.10E+01	
Ru-103	< 7.00E+00		< 1.10E+01		< 6.70E+00	
Ru-106	< 5.10E+01		< 8.20E+01		< 6.80E+01	
Cs-134	< 7.10E+00		< 8.90E+00		< 6.90E+00	
Cs-137	< 5.90E+00		< 7.50E+00		< 7.10E+00	
Ba-140	< 1.10E+01		< 1.20E+01		< 1.30E+01	
La-140	< 1.10E+01		< 1.20E+01		< 1.30E+01	
Ce-141	< 1.10E+01		< 1.30E+01		< 1.10E+01	
Ce-144	< 3.50E+01		< 4.50E+01		< 3.60E+01	

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**FERMI 2
DRINKING WATER ANALYSIS**

**DW-2 (Control)
(pCi/liter)**

Nuclide	31-JAN		28-FEB		28-MAR	
GR-B	<	3.20E+00	<	3.00E+00	9.30E+00	+/- 1.30E+00
Sr-89	<	8.40E+00	<	7.70E+00	<	6.70E+00
Sr-90	<	1.60E+00	<	1.80E+00	<	1.70E+00
Be-7	<	6.00E+01	<	5.00E+01	<	6.80E+01
K-40	<	7.90E+01	<	8.70E+01	<	1.10E+02
Mn-54	<	6.40E+00	<	7.00E+00	<	7.90E+00
Co-58	<	6.00E+00	<	6.60E+00	<	7.20E+00
Fe-59	<	1.40E+01	<	1.70E+01	<	1.30E+01
Co-60	<	6.60E+00	<	5.60E+00	<	6.50E+00
Zn-65	<	1.80E+01	<	1.80E+01	<	1.70E+01
Zr-95	<	1.10E+01	<	1.20E+01	<	1.30E+01
Ru-103	<	7.10E+00	<	8.20E+00	<	7.20E+00
Ru-106	<	5.90E+01	<	7.00E+01	<	6.20E+01
Cs-134	<	6.70E+00	<	7.00E+00	<	7.40E+00
Cs-137	<	6.00E+00	<	5.70E+00	<	6.80E+00
Ba-140	<	1.00E+01	<	1.10E+01	<	1.30E+01
La-140	<	1.20E+01	<	1.30E+01	<	1.50E+01
Ce-141	<	9.50E+00	<	9.80E+00	<	1.10E+01
Ce-144	<	3.60E+01	<	3.40E+01	<	3.90E+01

Nuclide	25-APR		30-MAY		26-JUN	
GR-B		3.60E+00 +/- 1.10E+00	<	3.40E+00	<	3.10E+00
Sr-89	<	5.10E+00	<	7.20E+00	<	5.90E+00
Sr-90	<	1.70E+00	<	1.50E+00	<	1.60E+00
Be-7	<	6.40E+01	<	5.90E+01	<	2.80E+01
K-40	<	1.00E+02	<	9.10E+01	<	5.00E+01
Mn-54	<	6.90E+00	<	5.40E+00	<	2.70E+00
Co-58	<	8.30E+00	<	6.50E+00	<	3.10E+00
Fe-59	<	1.40E+01	<	1.60E+01	<	7.40E+00
Co-60	<	6.40E+00	<	5.60E+00	<	2.70E+00
Zn-65	<	1.70E+01	<	5.60E+00	<	6.00E+00
Zr-95	<	1.10E+01	<	1.60E+01	<	5.70E+00
Ru-103	<	9.10E+00	<	9.60E+00	<	4.10E+00
Ru-106	<	7.80E+01	<	7.10E+00	<	2.60E+01
Cs-134	<	6.90E+00	<	7.10E+00	<	2.80E+00
Cs-137	<	6.80E+00	<	6.10E+01	<	2.70E+00
Ba-140	<	1.20E+01	<	6.00E+00	<	8.90E+00
La-140	<	1.40E+01	<	6.30E+00	<	1.00E+01
Ce-141	<	1.00E+01	<	9.80E+00	<	6.60E+00
Ce-144	<	3.70E+01	<	1.10E+01	<	1.50E+01

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**FERMI 2
DRINKING WATER ANALYSIS**

**DW-2 (Control)
(pCi/liter)**

Nuclide	25-JUL		29-AUG		28-SEP	
GR-B	<	2.90E+00	<	3.20E+00	<	3.10E+00
Sr-89	<	9.00E+00	<	8.40E+00	<	7.60E+00
Sr-90	<	1.40E+00	<	1.50E+00	<	1.60E+00
Be-7	<	5.70E+01	<	5.50E+01	<	3.70E+01
K-40	<	9.40E+01	<	1.00E+02	<	6.50E+01
Mn-54	<	5.90E+00	<	5.00E+00	<	3.70E+00
Co-58	<	5.80E+00	<	6.90E+00	<	4.10E+00
Fe-59	<	1.40E+01	<	1.30E+01	<	8.30E+00
Co-60	<	6.80E+00	<	7.70E+00	<	4.40E+00
Zn-65	<	2.00E+01	<	1.40E+01	<	8.40E+00
Zr-95	<	1.00E+01	<	1.30E+01	<	7.60E+00
Ru-103	<	6.20E+00	<	6.20E+00	<	5.20E+00
Ru-106	<	7.70E+01	<	6.00E+01	<	3.60E+01
Cs-134	<	7.80E+00	<	5.60E+00	<	3.70E+00
Cs-137	<	6.30E+00	<	7.00E+00	<	4.00E+00
Ba-140	<	1.20E+01	<	1.10E+01	<	1.20E+01
La-140	<	1.40E+01	<	1.20E+01	<	1.40E+01
Ce-141	<	9.50E+00	<	9.60E+00	<	7.50E+00
Ce-144	<	3.70E+01	<	3.30E+01	<	2.20E+01

Nuclide	31-OCT		28-NOV		27-DEC	
GR-B		4.50E+00 +/- 1.10E+00		4.80E+00 +/- 1.10E+00	<	2.90E+00
Sr-89	<	7.60E+00	<	7.30E+00	<	6.00E+00
Sr-90	<	1.50E+00	<	1.70E+00	<	1.50E+00
Be-7	<	5.40E+01	<	5.50E+01	<	6.10E+01
K-40	<	8.60E+01	<	9.50E+01	<	1.20E+02
Mn-54	<	5.80E+00	<	8.00E+00	<	7.50E+00
Co-58	<	6.10E+00	<	6.90E+00	<	9.00E+00
Fe-59	<	1.20E+01	<	1.50E+01	<	1.60E+01
Co-60	<	6.90E+00	<	8.90E+00	<	7.40E+00
Zn-65	<	2.40E+01	<	2.10E+01	<	1.70E+01
Zr-95	<	1.00E+01	<	1.30E+01	<	1.20E+01
Ru-103	<	6.10E+00	<	7.90E+00	<	7.90E+00
Ru-106	<	5.70E+01	<	5.90E+01	<	5.70E+01
Cs-134	<	6.60E+00	<	9.20E+00	<	7.60E+00
Cs-137	<	7.30E+00	<	8.00E+00	<	5.90E+00
Ba-140	<	1.20E+01	<	1.40E+01	<	1.50E+01
La-140	<	1.20E+01	<	1.40E+01	<	1.50E+01
Ce-141	<	9.00E+00	<	1.30E+01	<	8.90E+00
Ce-144	<	3.10E+01	<	4.40E+01	<	3.40E+01

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**FERMI 2
SURFACE WATER ANALYSIS**

**SW-2 (Control)
(pCi/liter)**

Nuclide	31-JAN		28-FEB		28-MAR	
Sr-89	<	7.80E+00	<	6.70E+00	<	6.60E+00
Sr-90	<	1.40E+00	<	1.60E+00	<	1.60E+00
Be-7	<	4.50E+01	<	5.40E+01	<	4.80E+01
K-40	<	7.20E+01	<	7.30E+01	<	8.00E+01
Mn-54	<	5.60E+00	<	5.50E+00	<	6.30E+00
Co-58	<	5.10E+00	<	6.40E+00	<	6.70E+00
Fe-59	<	1.00E+01	<	1.20E+01	<	1.20E+01
Co-60	<	6.60E+00	<	6.10E+00	<	8.00E+00
Zn-65	<	1.50E+01	<	2.40E+01	<	1.50E+01
Zr-95	<	1.00E+01	<	1.00E+01	<	1.10E+01
Ru-103	<	5.60E+00	<	6.00E+00	<	6.70E+00
Ru-106	<	5.00E+01	<	5.20E+01	<	6.30E+01
Cs-134	<	6.60E+00	<	6.00E+00	<	6.70E+00
Cs-137	<	5.60E+00	<	6.70E+00	<	6.40E+00
Ba-140	<	8.70E+00	<	1.10E+01	<	8.70E+00
La-140	<	1.00E+01	<	1.30E+01	<	1.00E+01
Ce-141	<	8.70E+00	<	9.60E+00	<	9.50E+00
Ce-144	<	3.10E+01	<	3.20E+01	<	3.70E+01

Nuclide	18-APR (a)		25-APR		30-MAY	
Sr-89	<	5.00E+00	<	4.30E+00	<	7.70E+00
Sr-90	<	1.40E+00	<	1.30E+00	<	1.60E+00
Be-7	<	4.00E+01	<	5.00E+01	<	7.20E+01
K-40	<	5.60E+01	<	9.90E+01	<	1.00E+02
Mn-54	<	4.60E+00	<	5.30E+00	<	7.10E+00
Co-58	<	4.30E+00	<	7.10E+00	<	8.00E+00
Fe-59	<	8.40E+00	<	1.70E+01	<	2.00E+01
Co-60	<	4.20E+00	<	9.20E+00	<	7.70E+00
Zn-65	<	9.20E+00	<	1.70E+01	<	1.60E+01
Zr-95	<	7.20E+00	<	1.20E+01	<	1.50E+01
Ru-103	<	5.30E+00	<	8.30E+00	<	1.00E+01
Ru-106	<	4.50E+01	<	7.30E+01	<	7.80E+01
Cs-134	<	5.30E+00	<	6.70E+00	<	6.90E+00
Cs-137	<	3.60E+00	<	6.50E+00	<	7.00E+00
Ba-140	<	8.90E+00	<	1.20E+01	<	1.30E+01
La-140	<	1.00E+01	<	1.30E+01	<	1.50E+01
Ce-141	<	7.30E+00	<	1.10E+01	<	1.30E+01
Ce-144	<	2.30E+01	<	3.70E+01	<	4.20E+01

(a) Grab sample, see Appendix D, Program Execution.

**FERMI 2
SURFACE WATER ANALYSIS**

**SW-2 (Control)
(pCi/liter)**

Nuclide	26-JUN	25-JUL	29-AUG
Sr-89	< 5.30E+00	< 8.70E+00	< 8.90E+00
Sr-90	< 1.40E+00	< 1.30E+00	< 1.60E+00
Be-7	< 2.90E+01	< 5.00E+01	< 5.20E+01
K-40	< 7.40E+01	< 9.70E+01	< 9.80E+01
Mn-54	< 3.80E+00	< 8.50E+00	< 7.80E+00
Co-58	< 4.20E+00	< 7.80E+00	< 7.50E+00
Fe-59	< 9.20E+00	< 1.40E+01	< 1.50E+01
Co-60	< 4.40E+00	< 7.90E+00	< 8.50E+00
Zn-65	< 7.40E+00	< 1.70E+01	< 1.90E+01
Zr-95	< 7.20E+00	< 1.30E+01	< 1.30E+01
Ru-103	< 4.30E+00	< 8.60E+00	< 7.60E+00
Ru-106	< 3.20E+01	< 7.60E+01	< 7.00E+01
Cs-134	< 4.20E+00	< 6.90E+00	< 7.40E+00
Cs-137	< 3.90E+00	< 6.90E+00	< 7.30E+00
Ba-140	< 1.10E+01	< 1.20E+01	< 1.10E+01
La-140	< 1.30E+01	< 1.40E+01	< 1.20E+01
Ce-141	< 5.50E+00	< 1.10E+01	< 1.20E+01
Ce-144	< 1.50E+01	< 3.70E+01	< 3.60E+01

Nuclide	28-SEP	31-OCT	21-NOV(a)
Sr-89	< 7.20E+00	< 8.40E+00	< 5.80E+00
Sr-90	< 1.50E+00	< 1.70E+00	< 1.40E+00
Be-7	< 3.50E+01	< 4.00E+01	< 6.50E+01
K-40	< 7.10E+01	< 6.90E+01	< 9.60E+01
Mn-54	< 4.50E+00	< 4.50E+00	< 7.20E+00
Co-58	< 3.90E+00	< 4.10E+00	< 7.40E+00
Fe-59	< 9.00E+00	< 7.60E+00	< 1.50E+01
Co-60	< 4.50E+00	< 4.90E+00	< 7.00E+00
Zn-65	< 1.80E+01	< 1.80E+01	< 3.00E+01
Zr-95	< 7.10E+00	< 8.00E+00	< 1.20E+01
Ru-103	< 4.50E+00	< 5.10E+00	< 7.30E+00
Ru-106	< 3.20E+01	< 4.40E+01	< 7.10E+01
Cs-134	< 4.50E+00	< 4.70E+00	< 7.00E+00
Cs-137	< 3.90E+00	< 5.60E+00	< 8.20E+00
Ba-140	< 1.10E+01	< 9.40E+00	< 1.00E+01
La-140	< 1.30E+01	< 9.40E+00	< 1.00E+01
Ce-141	< 5.90E+00	< 7.00E+00	< 1.20E+01
Ce-144	< 1.60E+01	< 2.60E+01	< 4.10E+01

(a) Grab sample, see Appendix D, Program Execution.

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**FERMI 2
SURFACE WATER ANALYSIS**

**SW-2 (Control)
(pCi/liter)**

Nuclide	28-NOV		26-DEC	
Sr-89	<	5.70E+00	<	6.10E+00
Sr-90	<	1.40E+00	<	1.50E+00
Be-7	<	5.40E+01	<	4.40E+01
K-40	<	1.10E+02	<	9.20E+01
Mn-54	<	6.20E+00	<	5.70E+00
Co-58	<	8.00E+00	<	5.60E+00
Fe-59	<	1.70E+01	<	9.90E+00
Co-60	<	5.70E+00	<	7.60E+00
Zn-65	<	2.40E+01	<	1.40E+01
Zr-95	<	1.40E+01	<	1.00E+01
Ru-103	<	7.90E+00	<	6.60E+00
Ru-106	<	4.80E+01	<	5.00E+01
Cs-134	<	7.50E+00	<	6.20E+00
Cs-137	<	7.90E+00	<	5.70E+00
Ba-140	<	1.30E+01	<	1.40E+01
La-140	<	1.30E+01	<	1.40E+01
Ce-141	<	9.60E+00	<	8.50E+00
Ce-144	<	3.10E+01	<	2.70E+01

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**FERMI 2
SURFACE WATER ANALYSIS**

**SW-3 (Indicator)
(pCi/liter)**

Nuclide	31-JAN		28-FEB		28-MAR	
Sr-89	<	8.40E+00	<	7.30E+00	<	5.60E+00
Sr-90	<	1.50E+00	<	1.70E+00	<	1.40E+00
Be-7	<	5.60E+01	<	4.90E+01	<	4.70E+01
K-40	<	9.90E+01	<	9.30E+01	<	8.30E+01
Mn-54	<	8.20E+00	<	6.10E+00	<	7.70E+00
Co-58	<	6.60E+00	<	6.20E+00	<	6.30E+00
Fe-59	<	1.40E+01	<	1.30E+01	<	1.50E+01
Co-60	<	7.60E+00	<	8.20E+00	<	7.80E+00
Zn-65	<	1.80E+01	<	1.40E+01	<	1.60E+01
Zr-95	<	1.10E+01	<	1.10E+01	<	1.10E+01
Ru-103	<	7.50E+00	<	5.10E+00	<	6.60E+00
Ru-106	<	6.90E+01	<	6.00E+01	<	6.00E+01
Cs-134	<	6.90E+00	<	6.40E+00	<	6.60E+00
Cs-137	<	7.30E+00	<	6.00E+00	<	7.10E+00
Ba-140	<	1.30E+01	<	1.00E+01	<	1.30E+01
La-140	<	1.50E+01	<	1.20E+01	<	1.50E+01
Ce-141	<	9.40E+00	<	7.50E+00	<	8.40E+00
Ce-144	<	3.30E+01	<	3.00E+01	<	3.00E+01

Nuclide	25-APR		30-MAY		26-JUN	
Sr-89	<	4.90E+00	<	8.20E+00	<	5.00E+00
Sr-90	<	1.50E+00	<	1.70E+00	<	1.30E+00
Be-7	<	4.00E+01	<	4.60E+01	<	2.50E+01
K-40	<	6.80E+01	<	6.00E+01	<	5.50E+01
Mn-54	<	4.80E+00	<	5.80E+00	<	3.00E+00
Co-58	<	4.40E+00	<	6.40E+00	<	3.20E+00
Fe-59	<	9.90E+00	<	1.40E+01	<	6.60E+00
Co-60	<	5.60E+00	<	6.00E+00	<	2.90E+00
Zn-65	<	1.20E+01	<	1.20E+01	<	6.50E+00
Zr-95	<	7.50E+00	<	1.20E+01	<	5.20E+00
Ru-103	<	5.10E+00	<	7.10E+00	<	3.60E+00
Ru-106	<	5.10E+01	<	4.70E+01	<	2.80E+01
Cs-134	<	4.90E+00	<	7.40E+00	<	3.00E+00
Cs-137	<	5.10E+00	<	6.40E+00	<	2.90E+00
Ba-140	<	8.80E+00	<	1.20E+01	<	6.90E+00
La-140	<	1.00E+01	<	1.30E+01	<	7.90E+00
Ce-141	<	6.60E+00	<	8.90E+00	<	5.50E+00
Ce-144	<	2.40E+01	<	2.80E+01	<	1.60E+01

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**FERMI 2
SURFACE WATER ANALYSIS**

**SW-3 (Indicator)
(pCi/liter)**

Nuclide	25-JUL		29-AUG		28-SEP	
Sr-89	<	9.20E+00	<	9.40E+00	<	7.20E+00
Sr-90	<	1.40E+00	<	1.70E+00	<	1.50E+00
Be-7	<	4.90E+01	<	5.20E+01	<	3.30E+01
K-40	<	8.80E+01	<	8.30E+01	<	7.50E+01
Mn-54	<	7.90E+00	<	6.40E+00	<	3.70E+00
Co-58	<	8.10E+00	<	6.70E+00	<	3.70E+00
Fe-59	<	1.20E+01	<	1.40E+01	<	8.20E+00
Co-60	<	7.70E+00	<	5.90E+00	<	4.50E+00
Zn-65	<	1.80E+01	<	1.70E+01	<	1.50E+01
Zr-95	<	1.20E+01	<	1.20E+01	<	6.70E+00
Ru-103	<	7.50E+00	<	7.20E+00	<	4.50E+00
Ru-106	<	7.20E+01	<	5.50E+01	<	3.70E+01
Cs-134	<	7.80E+00	<	5.40E+00	<	3.80E+00
Cs-137	<	7.10E+00	<	5.70E+00	<	4.00E+00
Ba-140	<	1.10E+01	<	9.30E+00	<	9.40E+00
La-140	<	1.20E+01	<	1.10E+01	<	1.10E+01
Ce-141	<	8.10E+00	<	1.00E+01	<	9.20E+00
Ce-144	<	3.30E+01	<	3.80E+01	<	1.80E+01

Nuclide	31-OCT		28-NOV		26-DEC	
Sr-89	<	7.10E+00	<	5.70E+00	<	6.00E+00
Sr-90	<	1.40E+00	<	1.40E+00	<	1.50E+00
Be-7	<	4.40E+01	<	4.70E+01	<	5.60E+01
K-40	<	9.30E+01	<	1.10E+02	<	7.50E+01
Mn-54	<	7.00E+00	<	5.80E+00	<	5.30E+00
Co-58	<	5.80E+00	<	5.90E+00	<	5.60E+00
Fe-59	<	1.60E+01	<	1.50E+01	<	1.30E+01
Co-60	<	8.00E+00	<	6.30E+00	<	7.90E+00
Zn-65	<	1.20E+01	<	1.70E+01	<	1.60E+01
Zr-95	<	1.10E+01	<	1.10E+01	<	1.20E+01
Ru-103	<	5.70E+00	<	5.50E+00	<	6.60E+00
Ru-106	<	6.10E+01	<	5.40E+01	<	6.20E+01
Cs-134	<	7.10E+00	<	5.90E+00	<	6.40E+00
Cs-137	<	6.50E+00	<	6.80E+00	<	6.60E+00
Ba-140	<	1.40E+01	<	1.40E+01	<	1.50E+01
La-140	<	1.40E+01	<	1.40E+01	<	1.50E+01
Ce-141	<	8.80E+00	<	8.50E+00	<	6.20E+00
Ce-144	<	3.00E+01	<	2.80E+01	<	2.90E+01

**FERMI 2
DRINKING AND SURFACE WATER
QUARTERLY COMPOSITE SAMPLES**

**Tritium
(pCi/liter)**

Station	First Quarter			Second Quarter		
DW-1	<	4.20E+02		<	4.60E+02	
DW-2	<	4.10E+02		<	4.60E+02	
SW-2	<	4.20E+02		<	4.60E+02	(a)
SW-3	<	4.20E+02		<	4.60E+02	

Station	Third Quarter			Fourth Quarter		
DW-1	<	4.80E+02		<	4.30E+02	
DW-2	<	4.70E+02		<	4.30E+02	
SW-2	<	4.70E+02		<	4.30E+02	(a)
SW-3	<	4.80E+02		<	4.30E+02	

(a) See Appendix D, Program Execution.

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**FERMI 2
GROUNDWATER ANALYSIS**

**GW-1 (Indicator)
(pCi/liter)**

Nuclide	First Quarter		Second Quarter	
Be-7	<	5.40E+01	<	4.90E+01
K-40	<	1.20E+02	<	1.00E+02
Mn-54	<	6.90E+00	<	5.80E+00
Co-58	<	7.30E+00	<	5.60E+00
Fe-59	<	1.60E+01	<	1.40E+01
Co-60	<	1.10E+01	<	7.40E+00
Zn-65	<	1.80E+01	<	1.30E+01
Zr-95	<	1.30E+01	<	1.10E+01
Ru-103	<	7.60E+00	<	6.70E+00
Ru-106	<	6.60E+01	<	4.90E+01
Cs-134	<	6.30E+00	<	6.40E+00
Cs-137	<	6.80E+00	<	6.00E+00
Ba-140	<	1.10E+01	<	1.30E+01
La-140	<	1.30E+01	<	1.50E+01
Ce-141	<	9.10E+00	<	8.70E+00
Ce-144	<	3.20E+01	<	2.80E+01
H-3	<	4.30E+02	<	4.30E+02

Nuclide	Third Quarter		Fourth Quarter	
Be-7	<	3.90E+01	<	3.40E+01
K-40	<	8.60E+01	<	6.60E+01
Mn-54	<	4.90E+00	<	3.70E+00
Co-58	<	4.60E+00	<	4.10E+00
Fe-59	<	1.10E+01	<	9.30E+00
Co-60	<	4.60E+00	<	3.80E+00
Zn-65	<	2.00E+01	<	9.70E+00
Zr-95	<	9.10E+00	<	7.30E+00
Ru-103	<	4.70E+00	<	4.80E+00
Ru-106	<	4.40E+01	<	3.90E+01
Cs-134	<	5.00E+00	<	4.20E+00
Cs-137	<	4.30E+00	<	3.70E+00
Ba-140	<	1.20E+01	<	9.30E+00
La-140	<	1.40E+01	<	9.30E+00
Ce-141	<	7.40E+00	<	1.10E+01
Ce-144	<	2.00E+01	<	2.20E+01
H-3	<	4.40E+02	<	4.30E+02

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**FERMI 2
GROUNDWATER ANALYSIS**

**GW-2 (Indicator)
(pCi/liter)**

Nuclide	First Quarter		Second Quarter	
Be-7	<	5.70E+01	<	3.20E+01
K-40	<	8.10E+01	<	6.80E+01
Mn-54	<	6.30E+00	<	4.00E+00
Co-58	<	7.40E+00	<	4.10E+00
Fe-59	<	1.70E+01	<	8.40E+00
Co-60	<	7.00E+00	<	4.40E+00
Zn-65	<	2.90E+01	<	9.20E+00
Zr-95	<	1.20E+01	<	7.20E+00
Ru-103	<	8.40E+00	<	4.30E+00
Ru-106	<	6.90E+01	<	3.60E+01
Cs-134	<	8.50E+00	<	4.30E+00
Cs-137	<	6.90E+00	<	4.10E+00
Ba-140	<	1.00E+01	<	8.20E+00
La-140	<	1.20E+01	<	9.50E+00
Ce-141	<	1.10E+01	<	5.90E+00
Ce-144	<	4.70E+01	<	2.10E+01
H-3	<	4.30E+02	<	4.30E+02

Nuclide	Third Quarter		Fourth Quarter	
Be-7	<	4.40E+01	<	4.70E+01
K-40	<	1.00E+02	<	8.30E+01
Mn-54	<	5.40E+00	<	5.60E+00
Co-58	<	4.40E+00	<	6.60E+00
Fe-59	<	1.20E+01	<	1.40E+01
Co-60	<	6.30E+00	<	6.40E+00
Zn-65	<	1.50E+01	<	2.30E+01
Zr-95	<	1.10E+01	<	1.10E+01
Ru-103	<	6.00E+00	<	7.90E+00
Ru-106	<	4.70E+01	<	6.10E+01
Cs-134	<	5.90E+00	<	6.00E+00
Cs-137	<	5.40E+00	<	4.70E+00
Ba-140	<	1.20E+01	<	1.50E+01
La-140	<	1.30E+01	<	1.50E+01
Ce-141	<	7.50E+00	<	8.70E+00
Ce-144	<	2.50E+01	<	3.20E+01
H-3	<	4.40E+02	<	4.30E+02

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**FERMI 2
GROUNDWATER ANALYSIS**

**GW-3 (Indicator)
(pCi/liter)**

Nuclide	First Quarter		Second Quarter	
Be-7	<	5.30E+01	<	2.60E+01
K-40	<	8.20E+01	<	5.10E+01
Mn-54	<	7.10E+00	<	2.90E+00
Co-58	<	6.50E+00	<	2.90E+00
Fe-59	<	1.40E+01	<	6.50E+00
Co-60	<	6.90E+00	<	2.80E+00
Zn-65	<	1.90E+01	<	6.90E+00
Zr-95	<	1.10E+01	<	4.90E+00
Ru-103	<	7.50E+00	<	3.90E+00
Ru-106	<	6.20E+01	<	2.80E+01
Cs-134	<	7.10E+00	<	3.20E+00
Cs-137	<	6.50E+00	<	2.70E+00
Ba-140	<	1.00E+01	<	6.60E+00
La-140	<	1.10E+01	<	7.60E+00
Ce-141	<	9.10E+00	<	5.40E+00
Ce-144	<	3.40E+01	<	1.50E+01
H-3	<	4.30E+02	<	4.30E+02

Nuclide	Third Quarter		Fourth Quarter	
Be-7	<	5.10E+01	<	4.90E+01
K-40	<	7.00E+01	<	8.20E+01
Mn-54	<	5.20E+00	<	4.60E+00
Co-58	<	6.30E+00	<	5.50E+00
Fe-59	<	1.10E+01	<	1.30E+01
Co-60	<	5.30E+00	<	5.20E+00
Zn-65	<	2.40E+01	<	1.30E+01
Zr-95	<	9.70E+00	<	9.50E+00
Ru-103	<	6.80E+00	<	6.20E+00
Ru-106	<	5.20E+01	<	4.20E+01
Cs-134	<	5.70E+00	<	5.80E+00
Cs-137	<	4.90E+00	<	5.10E+00
Ba-140	<	1.40E+01	<	1.40E+01
La-140	<	1.40E+01	<	1.40E+01
Ce-141	<	1.30E+01	<	9.40E+00
Ce-144	<	3.40E+01	<	2.60E+01
H-3	<	4.60E+02	<	4.30E+02

**FERMI 2
GROUNDWATER ANALYSIS**

GW-4 (Control)
(pCi/liter)

Nuclide	First Quarter		Second Quarter	
Be-7	<	4.80E+01	<	2.40E+01
K-40	<	9.70E+01	<	5.30E+01
Mn-54	<	6.50E+00	<	3.00E+00
Co-58	<	5.70E+00	<	3.00E+00
Fe-59	<	1.50E+01	<	6.10E+00
Co-60	<	5.80E+00	<	2.70E+00
Zn-65	<	2.20E+01	<	6.20E+00
Zr-95	<	1.10E+01	<	5.30E+00
Ru-103	<	6.10E+00	<	3.40E+00
Ru-106	<	4.90E+01	<	2.70E+01
Cs-134	<	6.40E+00	<	2.90E+00
Cs-137	<	5.40E+00	<	2.70E+00
Ba-140	<	8.60E+00	<	6.20E+00
La-140	<	9.90E+00	<	7.10E+00
Ce-141	<	8.20E+00	<	5.80E+00
Ce-144	<	3.00E+01	<	1.50E+01
H-3	<	4.20E+02	<	4.20E+02

Nuclide	Third Quarter		Fourth Quarter	
Be-7	<	5.60E+01	<	3.90E+01
K-40	<	8.00E+01	4.20E+01	+/- 1.30E+01
Mn-54	<	6.20E+00	<	3.70E+00
Co-58	<	5.90E+00	<	4.20E+00
Fe-59	<	1.20E+01	<	8.40E+00
Co-60	<	5.50E+00	<	4.70E+00
Zn-65	<	2.40E+01	<	9.90E+00
Zr-95	<	1.10E+01	<	7.60E+00
Ru-103	<	6.70E+00	<	4.80E+00
Ru-106	<	4.30E+01	<	3.80E+01
Cs-134	<	6.40E+00	<	3.80E+00
Cs-137	<	5.60E+00	<	3.80E+00
Ba-140	<	1.30E+01	<	1.20E+01
La-140	<	1.40E+01	<	1.20E+01
Ce-141	<	1.10E+01	<	6.70E+00
Ce-144	<	3.30E+01	<	2.40E+01
H-3	<	4.60E+02	<	4.30E+02

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**FERMI 2
SEDIMENT ANALYSIS**

**S-1 (Indicator)
(pCi/kg dry)**

Nuclide	31-MAY		13-NOV	
Sr-89	<	2.10E+02	<	2.30E+02
Sr-90	<	1.80E+02	<	1.50E+02
Be-7	<	2.40E+02	<	4.10E+02
K-40		1.26E+04 +/- 4.00E+02		1.34E+04 +/- 3.50E+02
Mn-54	<	2.80E+01	<	2.50E+01
Co-58	<	3.10E+01	<	4.60E+01
Fe-59	<	9.50E+01	<	2.00E+02
Co-60	<	2.90E+01	<	2.50E+01
Zn-65	<	8.50E+01	<	1.40E+02
Zr-95	<	4.40E+01	<	9.80E+01
Ru-103	<	2.70E+01	<	7.40E+01
Ru-106	<	1.80E+02	<	2.00E+02
Cs-134	<	2.20E+01	<	7.70E+01
Cs-137	<	2.20E+01	<	1.90E+01
Ba-140	<	3.10E+02	<	6.70E+03
La-140	<	1.80E+02	<	3.10E+03
Ce-141	<	4.90E+01	<	1.60E+02
Ce-144	<	1.10E+02	<	1.30E+02

**S-2 (Indicator)
(pCi/kg dry)**

Nuclide	31-MAY		13-NOV	
Sr-89	<	4.40E+02	<	2.90E+02
Sr-90	<	2.90E+02	<	1.90E+02
Be-7	<	2.30E+02	<	6.10E+02
K-40		8.99E+03 +/- 2.40E+02		1.03E+04 +/- 3.50E+02
Mn-54	<	1.90E+01	<	3.30E+01
Co-58	<	3.00E+01	<	5.50E+01
Fe-59	<	8.20E+01	<	2.30E+02
Co-60	<	2.20E+01	<	2.90E+01
Zn-65	<	1.10E+02	<	1.60E+02
Zr-95	<	4.40E+01	<	1.00E+02
Ru-103	<	3.30E+01	<	1.00E+02
Ru-106	<	1.50E+02	<	2.90E+02
Cs-134	<	1.40E+01	<	1.20E+02
Cs-137	<	1.60E+01	<	3.10E+01
Ba-140	<	7.00E+02	<	7.40E+03
La-140	<	3.60E+02	<	4.90E+03
Ce-141	<	6.60E+01	<	2.50E+02
Ce-144	<	1.00E+02	<	2.30E+02

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**FERMI 2
SEDIMENT ANALYSIS**

**S-3 (Indicator)
(pCi/kg dry)**

Nuclide	31-MAY		13-NOV	
Sr-89	<	2.60E+02	<	2.30E+02
Sr-90	<	2.30E+02	<	1.40E+02
Be-7	<	2.90E+02	<	5.10E+02
K-40		7.30E+03 +/- 3.80E+02		1.23E+04 +/- 3.40E+02
Mn-54	<	3.00E+01	<	2.70E+01
Co-58	<	4.10E+01	<	4.50E+01
Fe-59	<	1.10E+02	<	1.70E+02
Co-60	<	3.20E+01	<	2.60E+01
Zn-65	<	1.50E+02	<	1.40E+02
Zr-95	<	6.50E+01	<	9.00E+01
Ru-103	<	3.00E+01	<	7.70E+01
Ru-106	<	2.20E+02	<	2.20E+02
Cs-134	<	2.00E+01	<	1.80E+01
Cs-137	<	2.80E+01	<	2.30E+01
Ba-140	<	3.70E+02	<	6.90E+03
La-140	<	1.90E+02	<	3.70E+03
Ce-141	<	5.90E+01	<	1.90E+02
Ce-144	<	1.30E+02	<	1.70E+02

**S-4 (Indicator)
(pCi/kg dry)**

Nuclide	5-JUN		28-NOV	
Sr-89	<	2.20E+02	<	1.80E+02
Sr-90	<	2.10E+02	<	1.30E+02
Be-7	<	4.70E+02	<	1.20E+03
K-40		1.13E+04 +/- 6.50E+02		8.74E+03 +/- 7.60E+02
Mn-54	<	5.30E+01	<	6.20E+01
Co-58	<	5.70E+01	<	1.20E+02
Fe-59	<	1.60E+02	<	3.20E+02
Co-60	<	5.30E+01	<	7.40E+01
Zn-65	<	1.60E+02	<	2.90E+02
Zr-95	<	1.10E+02	<	2.30E+02
Ru-103	<	5.10E+01	<	2.10E+02
Ru-106	<	3.70E+02	<	7.00E+02
Cs-134	<	8.00E+01	<	7.10E+01
Cs-137	<	5.20E+01	<	6.50E+01
Ba-140	<	5.70E+02	<	1.20E+04
La-140	<	3.00E+02	<	5.50E+03
Ce-141	<	9.60E+01	<	4.20E+02
Ce-144	<	2.80E+02	<	4.50E+02

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**FERMI 2
SEDIMENT ANALYSIS**

S-5 (Control)
(pCi/kg dry)

Nuclide	8-MAY		8-NOV	
Sr-89	<	2.80E+02	<	2.20E+02
Sr-90	<	2.30E+02	<	1.30E+02
Be-7	<	4.10E+02	<	1.10E+03
K-40		9.77E+03 +/- 3.50E+02		1.18E+04 +/- 7.00E+02
Mn-54	<	3.50E+01	<	7.90E+01
Co-58	<	4.00E+01	<	1.20E+02
Fe-59	<	1.20E+02	<	5.00E+02
Co-60	<	3.50E+01	<	6.50E+01
Zn-65	<	1.40E+02	<	2.60E+02
Zr-95	<	8.10E+01	<	2.20E+02
Ru-103	<	5.10E+01	<	2.30E+02
Ru-106	<	2.10E+02	<	7.10E+02
Cs-134	<	2.10E+01	<	5.80E+01
Cs-137		4.10E+01 +/- 1.10E+01	<	1.20E+02
Ba-140	<	1.40E+03	<	2.20E+04
La-140	<	7.60E+02	<	4.00E+04
Ce-141	<	1.00E+02	<	5.50E+02
Ce-144	<	1.40E+02	<	4.90E+02

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FISH ANALYSIS**

F-1 (Control)
(pCi/kg wet)

Nuclide	8-MAY Rock Bass		8-MAY White Bass		8-MAY White Perch	
Sr-89	<	2.10E+02	<	2.10E+02	<	1.90E+02
Sr-90	<	1.90E+02	<	2.10E+02	<	1.80E+02
Be-7	<	5.20E+02	<	6.20E+02	<	6.60E+02
K-40		2.37E+03 +/- 3.60E+02	<	1.40E+03		1.04E+03 +/- 3.00E+02
Mn-54	<	6.10E+01	<	4.70E+01	<	6.50E+01
Co-58	<	5.50E+01	<	7.80E+01	<	6.70E+01
Fe-59	<	2.00E+02	<	2.20E+02	<	2.20E+02
Co-60	<	3.70E+01	<	5.20E+01	<	6.30E+01
Zn-65	<	1.50E+02	<	1.70E+02	<	1.30E+02
Zr-95	<	8.60E+01	<	1.00E+02	<	1.60E+02
Ru-103	<	7.70E+01	<	5.20E+01	<	9.00E+01
Ru-106	<	4.30E+02	<	5.40E+02	<	5.70E+02
Cs-134	<	4.20E+01	<	6.50E+01	<	6.00E+01
Cs-137	<	4.10E+01	<	3.80E+01	<	5.90E+01
Ba-140	<	8.50E+01	<	6.10E+02	<	3.70E+02
La-140	<	9.80E+01	<	7.00E+02	<	4.30E+02
Ce-141	<	9.60E+01	<	1.00E+02	<	1.20E+02
Ce-144	<	1.60E+02	<	1.80E+02	<	2.80E+02

Nuclide	8-MAY Yellow Perch		23-OCT Walleye		23-OCT White Perch	
Sr-89	<	2.50E+02	<	4.50E+02	<	6.00E+02
Sr-90	<	2.40E+02	<	1.00E+02	<	1.30E+02
Be-7	<	3.30E+02	<	5.50E+02	<	1.70E+03
K-40	<	4.70E+02		2.90E+03 +/- 1.90E+02		3.95E+03 +/- 4.10E+02
Mn-54	<	3.20E+01	<	2.20E+01	<	7.20E+01
Co-58	<	3.70E+01	<	5.20E+01	<	5.70E+01
Fe-59	<	1.00E+02	<	1.90E+02	<	2.10E+02
Co-60	<	3.00E+01	<	2.00E+01	<	7.70E+01
Zn-65	<	9.10E+01	<	7.10E+01	<	1.90E+02
Zr-95	<	8.60E+01	<	9.70E+01	<	3.00E+02
Ru-103	<	4.80E+01	<	9.40E+01	<	3.60E+02
Ru-106	<	2.60E+02	<	1.90E+02	<	6.40E+02
Cs-134	<	3.60E+01	<	2.80E+01	<	8.70E+01
Cs-137	<	2.30E+01	<	2.10E+01	<	5.60E+01
Ba-140	<	2.20E+02	<	8.00E+03	<	2.70E+04
La-140	<	2.60E+02	<	8.00E+03	<	2.70E+04
Ce-141	<	5.30E+01	<	1.90E+02	<	6.20E+02
Ce-144	<	1.20E+02	<	8.90E+01	<	2.60E+02

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**FERMI 2
FISH ANALYSIS**

**F-2 (Indicator)
(pCi/kg wet)**

Nuclide	11-MAY Catfish		11-MAY Drum		11-MAY Walleye	
Sr-89	<	2.20E+02	<	2.40E+02	<	1.70E+02
Sr-90	<	2.40E+02	<	2.50E+02	<	1.70E+02
Be-7	<	4.20E+02	<	4.30E+02	<	4.30E+02
K-40		2.91E+03 +/- 3.20E+02		1.76E+03 +/- 2.90E+02		2.07E+03 +/- 3.80E+02
Mn-54	<	3.40E+01	<	4.30E+01	<	5.10E+01
Co-58	<	4.00E+01	<	5.30E+01	<	5.30E+01
Fe-59	<	1.20E+02	<	1.50E+02	<	1.70E+02
Co-60	<	3.80E+01	<	5.70E+01	<	5.80E+01
Zn-65	<	8.70E+01	<	9.20E+01	<	1.20E+02
Zr-95	<	7.50E+01	<	1.00E+02	<	9.90E+01
Ru-103	<	5.60E+01	<	5.70E+01	<	6.70E+01
Ru-106	<	4.30E+02	<	4.20E+02	<	5.00E+02
Cs-134	<	4.30E+01	<	4.40E+01	<	4.20E+01
Cs-137	<	4.20E+01	<	4.90E+01	<	5.50E+01
Ba-140	<	2.20E+02	<	2.60E+02	<	3.40E+02
La-140	<	2.60E+02	<	2.90E+02	<	3.90E+02
Ce-141	<	8.30E+01	<	7.90E+01	<	9.70E+01
Ce-144	<	2.00E+02	<	1.60E+02	<	2.00E+02

Nuclide	11-MAY White Bass		11-MAY White Perch		11-MAY Yellow Perch	
Sr-89	<	1.50E+02	<	2.00E+02	<	1.50E+02
Sr-90	<	1.70E+02	<	2.00E+02	<	1.50E+02
Be-7	<	4.20E+02	<	4.00E+02	<	5.40E+02
K-40		2.03E+03 +/- 3.30E+02		2.44E+03 +/- 2.80E+02		2.32E+03 +/- 3.60E+02
Mn-54	<	5.50E+01	<	3.70E+01	<	5.90E+01
Co-58	<	4.10E+01	<	4.40E+01	<	5.40E+01
Fe-59	<	1.20E+02	<	9.80E+01	<	1.70E+02
Co-60	<	4.70E+01	<	4.30E+01	<	7.60E+01
Zn-65	<	1.20E+02	<	1.00E+02	<	1.30E+02
Zr-95	<	1.30E+02	<	8.20E+01	<	1.30E+02
Ru-103	<	6.90E+01	<	6.40E+01	<	6.80E+01
Ru-106	<	3.50E+02	<	3.90E+02	<	4.60E+02
Cs-134	<	4.70E+01	<	3.90E+01	<	6.00E+01
Cs-137	<	3.80E+01	<	3.50E+01	<	4.50E+01
Ba-140	<	2.50E+02	<	1.80E+02	<	2.70E+02
La-140	<	2.90E+02	<	2.10E+02	<	3.10E+02
Ce-141	<	8.00E+01	<	7.70E+01	<	7.60E+01
Ce-144	<	1.50E+02	<	1.80E+02	<	1.60E+02

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**FERMI 2
FISH ANALYSIS**

**F-2 (Indicator)
(pCi/kg wet)**

Nuclide	24-OCT Carp		24-OCT Catfish		24-OCT Large Mouth Bass	
Sr-89	<	5.00E+02	<	5.30E+02	<	5.50E+02
Sr-90	<	1.10E+02	<	1.40E+02	<	1.20E+02
Be-7	<	5.10E+02	<	3.80E+02	<	5.80E+02
K-40		2.33E+03 +/- 1.60E+02		2.52E+03 +/- 1.00E+02		2.53E+03 +/- 2.10E+02
Mn-54	<	2.20E+01	<	1.70E+01	<	2.70E+01
Co-58	<	4.10E+01	<	3.60E+01	<	5.40E+01
Fe-59	<	1.50E+02	<	1.40E+02	<	2.60E+02
Co-60	<	2.30E+01	<	1.50E+01	<	2.80E+01
Zn-65	<	4.30E+01	<	6.50E+01	<	7.80E+01
Zr-95	<	9.70E+01	<	7.20E+01	<	1.10E+02
Ru-103	<	8.50E+01	<	8.50E+01	<	1.10E+02
Ru-106	<	1.80E+02	<	1.50E+02	<	2.20E+02
Cs-134	<	2.50E+01	<	1.90E+01	<	2.80E+01
Cs-137	<	1.50E+01	<	1.30E+01	<	2.20E+01
Ba-140	<	5.20E+03	<	6.10E+03	<	7.20E+03
La-140	<	5.20E+03	<	6.10E+03	<	7.20E+03
Ce-141	<	1.70E+02	<	2.00E+02	<	2.10E+02
Ce-144	<	7.50E+01	<	7.50E+01	<	9.60E+01

Nuclide	24-OCT Walleye		24-OCT White Bass		24-OCT White Perch	
Sr-89	<	6.00E+02	<	5.80E+02	<	7.30E+02
Sr-90	<	1.50E+02	<	1.20E+02	<	1.80E+02
Be-7	<	6.00E+02	<	6.70E+02	<	4.90E+02
K-40		3.40E+03 +/- 2.20E+02		2.58E+03 +/- 2.20E+02		2.37E+03 +/- 1.70E+02
Mn-54	<	2.50E+01	<	3.10E+01	<	2.20E+01
Co-58	<	5.20E+01	<	5.70E+01	<	4.70E+01
Fe-59	<	2.40E+02	<	2.40E+02	<	2.30E+02
Co-60	<	2.40E+01	<	3.70E+01	<	2.60E+01
Zn-65	<	7.50E+01	<	8.00E+01	<	6.90E+01
Zr-95	<	1.10E+02	<	1.40E+02	<	8.80E+01
Ru-103	<	1.10E+02	<	1.20E+02	<	1.10E+02
Ru-106	<	2.40E+02	<	2.40E+02	<	2.10E+02
Cs-134	<	2.50E+01	<	3.20E+01	<	2.00E+01
Cs-137	<	2.20E+01	<	2.50E+01	<	2.10E+01
Ba-140	<	8.90E+03	<	8.20E+03	<	6.70E+03
La-140	<	8.90E+03	<	8.20E+03	<	6.70E+03
Ce-141	<	2.20E+02	<	2.10E+02	<	1.80E+02
Ce-144	<	1.30E+02	<	1.00E+02	<	1.10E+02

**FERMI 2
FISH ANALYSIS**

**F-2 (Indicator)
(pCi/kg wet)**

Nuclide	24-OCT	Yellow Perch
Sr-89	< 6.30E+02	
Sr-90	< 1.40E+02	
Be-7	< 5.80E+02	
K-40	2.81E+03	+/- 2.10E+02
Mn-54	< 2.40E+01	
Co-58	< 6.30E+01	
Fe-59	< 2.20E+02	
Co-60	< 3.10E+01	
Zn-65	< 7.80E+01	
Zr-95	< 1.10E+02	
Ru-103	< 1.10E+02	
Ru-106	< 2.50E+02	
Cs-134	< 2.40E+01	
Cs-137	< 2.70E+01	
Ba-140	< 8.10E+03	
La-140	< 8.10E+03	
Ce-141	< 2.00E+02	
Ce-144	< 1.20E+02	

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**FERMI 2
FISH ANALYSIS**

F-3 (Control)
(pCi/kg wet)

Nuclide	9-MAY Drum		9-MAY Walleye		9-MAY White Bass	
Sr-89	<	2.10E+02	<	2.50E+02	<	2.20E+02
Sr-90	<	2.10E+02	<	2.10E+02	<	2.20E+02
Be-7	<	7.40E+02	<	4.90E+02	<	4.70E+02
K-40		2.64E+03 +/- 4.30E+02		2.99E+03 +/- 3.40E+02		2.65E+03 +/- 3.20E+02
Mn-54	<	7.70E+01	<	4.50E+01	<	4.40E+01
Co-58	<	9.60E+01	<	4.00E+01	<	4.80E+01
Fe-59	<	2.10E+02	<	1.20E+02	<	1.20E+02
Co-60	<	6.00E+01	<	4.20E+01	<	4.00E+01
Zn-65	<	1.70E+02	<	1.20E+02	<	1.30E+02
Zr-95	<	1.40E+02	<	7.60E+01	<	1.00E+02
Ru-103	<	1.10E+02	<	6.30E+01	<	5.50E+01
Ru-106	<	6.60E+02	<	3.80E+02	<	4.00E+02
Cs-134	<	8.20E+01	<	3.10E+01	<	4.70E+01
Cs-137	<	7.40E+01	<	5.40E+01	<	4.60E+01
Ba-140	<	4.90E+02	<	1.90E+02	<	2.00E+02
La-140	<	5.70E+02	<	2.20E+02	<	2.30E+02
Ce-141	<	1.30E+02	<	9.40E+01	<	9.00E+01
Ce-144	<	3.20E+02	<	2.20E+02	<	2.10E+02

Nuclide	9-MAY White Perch		9-MAY Yellow Perch		4-OCT Carp	
Sr-89	<	1.70E+02	<	1.80E+02	<	1.00E+03
Sr-90	<	1.60E+02	<	1.70E+02	<	2.40E+02
Be-7	<	4.10E+02	<	4.70E+02	<	6.30E+02
K-40		2.61E+03 +/- 4.00E+02		1.96E+03 +/- 2.90E+02		2.20E+03 +/- 1.60E+02
Mn-54	<	6.10E+01	<	4.90E+01	<	2.10E+01
Co-58	<	5.90E+01	<	5.80E+01	<	5.70E+01
Fe-59	<	1.80E+02	<	1.50E+02	<	2.40E+02
Co-60	<	7.70E+01	<	5.40E+01	<	2.20E+01
Zn-65	<	1.10E+02	<	1.40E+02	<	6.50E+01
Zr-95	<	1.40E+02	<	1.10E+02	<	1.20E+02
Ru-103	<	6.80E+01	<	8.20E+01	<	1.20E+02
Ru-106	<	5.00E+02	<	4.30E+02	<	2.20E+02
Cs-134	<	5.50E+01	<	5.20E+01	<	2.50E+01
Cs-137	<	6.50E+01	<	4.40E+01	<	2.00E+01
Ba-140	<	2.50E+02	<	2.90E+02	<	2.20E+04
La-140	<	2.80E+02	<	3.30E+02	<	2.20E+04
Ce-141	<	1.40E+02	<	9.50E+01	<	2.70E+02
Ce-144	<	2.80E+02	<	2.00E+02	<	1.20E+02

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**FERMI 2
FISH ANALYSIS**

**F-3 (Control)
(pCi/kg wet)**

Nuclide	4-OCT Walleye		4-OCT White Bass		4-OCT White Perch	
Sr-89	<	8.80E+02	<	8.60E+02	<	7.30E+02
Sr-90	<	1.90E+02	<	1.90E+02	<	1.70E+02
Be-7	<	4.60E+02	<	5.10E+02	<	6.60E+02
K-40		2.88E+03 +/- 1.30E+02		2.57E+03 +/- 1.10E+02		2.49E+03 +/- 1.50E+02
Mn-54	<	1.80E+01	<	1.70E+01	<	2.00E+01
Co-58	<	4.10E+01	<	4.50E+01	<	5.60E+01
Fe-59	<	1.90E+02	<	1.90E+02	<	2.50E+02
Co-60	<	1.50E+01	<	1.40E+01	<	2.10E+01
Zn-65	<	4.60E+01	<	4.30E+01	<	6.30E+01
Zr-95	<	7.80E+01	<	8.30E+01	<	1.10E+02
Ru-103	<	9.60E+01	<	9.50E+01	<	1.30E+02
Ru-106	<	1.40E+02	<	1.50E+02	<	2.10E+02
Cs-134	<	1.50E+01	<	1.50E+01	<	2.00E+01
Cs-137	<	1.40E+01	<	1.60E+01	<	1.90E+01
Ba-140	<	1.40E+04	<	1.30E+04	<	1.90E+04
La-140	<	1.40E+04	<	1.30E+04	<	1.90E+04
Ce-141	<	1.80E+02	<	2.30E+02	<	2.50E+02
Ce-144	<	8.00E+01	<	9.30E+01	<	1.00E+02

Appendix D

Environmental Program Execution

Environmental Program Execution

On occasions, samples cannot be collected. This can be due to a variety of events, such as equipment malfunction, loss of electrical power, severe weather conditions, or vandalism. In 2007, missed samples were a result of missing field TLDs and loss of electrical power and sample line sediment blockage to water sampling equipment. The following sections list all missed samples, changes and corrective actions taken during 2007. These missed and additional grab samples did not have a significant impact on the execution of the REMP.

Direct Radiation Monitoring

All TLDs are placed in the field in inconspicuous locations to minimize the loss of TLDs due to vandalism. During 2007, two hundred sixty-eight (268) TLDs were placed in the field for the REMP program and all but two (2) TLDs were collected and processed. There were no major changes to the Direct Radiation Monitoring program during 2007.

- T-31 was found missing during the second quarter collection and was replaced with the next quarter's TLD.
- T-32 was found missing during the third quarter collection and was replaced with the next quarter's TLD.

Atmospheric Monitoring

During 2007, two hundred sixty (260) air samples were placed in the field, all particulate filters and charcoal filters were collected and processed. There were no changes to the Atmospheric Monitoring program during 2007.

Terrestrial Monitoring

During 2007, all scheduled terrestrial monitoring samples were collected. There were no changes to the Terrestrial Monitoring program during 2007.

Milk Sampling

All scheduled milk samples were collected in 2007.

Garden Sampling

All scheduled garden samples were collected in 2007.

Groundwater Sampling

All scheduled groundwater samples were collected in 2007.

Aquatic Monitoring

During 2007, all scheduled aquatic monitoring samples were collected. There were no changes to the Aquatic Monitoring program during 2007.

Drinking Water Sampling

All scheduled drinking water samples were collected in 2007.

Surface Water Sampling

All scheduled surface water samples were collected in 2007.

- During weekly flow-checks on 4/18/2007, a sample line sediment blockage was found at SW-2 and a grab sample was collected. The sample line was repaired and equipment restored to operation. For this reason, the second quarter composite sample for this location is considered to be less than representative.
- During weekly flow-checks on 11/21/2007, sampler DW-2 was found not operating due to loss of electrical power to the equipment. A grab sample was collected and the operating authority restored the power to the equipment. For this reason, the fourth quarter composite sample for this location is considered to be less than representative.

Sediment Sampling

All scheduled sediment samples were collected in 2007.

Fish Sampling

All scheduled fish samples were collected in 2007.

Appendix E

Effluent and Radwaste Data

Regulatory Limits for Radioactive Effluents

The Nuclear Regulatory Commission (NRC) limits on liquid and gaseous effluents are incorporated into the Fermi 2 Offsite Dose Calculation Manual. These limits prescribe the maximum doses and dose rates due to radioactive effluents resulting from normal operation of Fermi 2. These limits are described in the following sections.

A. Gaseous Effluents

- I. Dose rate due to radioactivity released in gaseous effluents to areas at and beyond the site boundary shall be limited to the following:
 - a) Noble gases

Less than or equal to 500 mrem/year to the total body.
Less than or equal to 3000 mrem/year to the skin.
 - b) Iodine-131, iodine-133, tritium, and for all radionuclides in particulate form with half lives greater than 8 days

Less than or equal to 1500 mrem/year to any organ.
- II. Air dose due to noble gases to areas at and beyond the site boundary shall be limited to the following:
 - a) Less than or equal to 5 mrad for gamma radiation
Less than or equal to 10 mrad for beta radiation
- During any calendar quarter
 - b) Less than or equal to 10 mrad for gamma radiation
Less than or equal to 20 mrad for beta radiation
- During any calendar year
- III. Dose to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives greater than 8 days in gaseous effluents released to areas at and beyond the site boundary shall be limited to the following:

- a) Less than or equal to 7.5 mrem to any organ
- During any calendar quarter

- b) Less than or equal to 15 mrem to any organ
- During any calendar year

Note: The calculated site boundary dose rates for Fermi 2 are based on identification of individual isotopes and on use of dose factors specific to each identified isotope or a highly conservative dose factor. Average energy values are not used in these calculations, and therefore, need not be reported.

B. Liquid Effluents

- I. The concentration of radioactive material released in liquid effluents to unrestricted areas shall be limited to ten times the concentrations specified in Title 10 of the Code of Federal Regulations (10 CFR) Part 20 (Standards for Protection Against Radiation), Appendix B, Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases, as required by the Fermi 2 Offsite Dose Calculation Manual. For dissolved or entrained noble gases, the concentration shall be limited to 2E-4 (.0002) microcuries/ml total activity. This limit is based on the Xe-135 air submersion dose limit converted to an equivalent concentration in water as discussed in the International Commission on Radiological Protection (ICRP) Publication 2.

- II. The dose or dose commitment to a member of the public from radioactive materials in liquid effluents released to unrestricted areas shall be limited to the following:
 - a) Less than or equal to 1.5 mrem to the total body
Less than or equal to 5 mrem to any organ
- During any calendar quarter

 - b) Less than or equal to 3 mrem to the total body
Less than or equal to 10 mrem to any organ
- During any calendar year

Measurements and Approximations of Total Activity in Radioactive Effluents

As required by NRC Regulatory Guide 1.21, this section describes the methods used to measure the total radioactivity in effluent releases and to estimate the overall errors associated with these measurements. The effluent monitoring systems are described in Chapter 11.4 of the Fermi 2 Updated Final Safety Analysis Report (UFSAR).

A. Gaseous Effluents

I. Fission and Activation Gases

Samples are obtained from each of the six plant radiation monitors which continuously monitor the five ventilation exhaust points. The fission and activation gases are quantified by gamma spectroscopy analysis of periodic samples.

The summary values reported are the sums of all fission and activation gases quantified at all monitored release points.

II. Radioiodines

Samples are obtained from each of the six plant radiation monitors which continuously monitor the five ventilation exhaust points. The radioiodines are entrained on charcoal and then quantified by gamma spectroscopy analysis. For each sample, the duration of sampling and continuous flow rate through the charcoal are used in determining the concentration of radioiodines. From the flow rate of the ventilation system, a rate of release can be determined.

The summary values reported are the sums of all radioiodines quantified at all continuously monitored release points.

III. Particulates

Samples are obtained from each of the six plant effluent radiation monitors which continuously monitor the five ventilation exhaust points. The particulates are collected on a filter and then quantified by gamma spectroscopy analysis.

For each sample, the duration of sampling and continuous flow rate through the filter are used in determining the concentration of particulates. From the flow rate of the ventilation system, a rate of release can be determined.

Quarterly, the filters from each ventilation release point are composited and then radiochemically separated and analyzed for strontium (Sr)-89/90 using various analytical methods.

The summary values reported are the sums of all particulates quantified at all monitored release points.

IV. Tritium

Samples are obtained from each of the six plant effluent radiation monitors which continuously monitor the five ventilation exhaust points. The sample is passed through a bottle containing water and the tritium is "washed" out to the collecting water. Portions of the collecting water are analyzed for tritium using liquid scintillation counting techniques. For each sample, the duration of sample and sample flow rate is used to determine the concentration. From the flow rate of the ventilation system, a release rate can be determined.

The summary values reported are the sums of all tritium quantified at all monitored release points.

V. Gross Alpha

The gaseous particulate filters from the six plant effluent radiation monitors are stored for one week to allow for decay of naturally occurring alpha emitters. These filters are then analyzed for gross alpha radioactivity by gas proportional counting, and any such radioactivity found is assumed to be plant related. The quantity of alpha emitters released can then be determined from sample flow rate, sample duration, and stack flow rate.

The summary values reported are the sums of all alpha emitters quantified at all monitored release points.

B. Liquid Effluents

The liquid radwaste processing system and the liquid effluent monitoring system are described in the Fermi 2 UFSAR. Fermi 2 released no radioactive liquid effluents in 2007.

C. Statistical Measurement Uncertainties

The statistical uncertainty of the measurements in this section has been calculated and summarized in the following table:

Measurement Type	Sample Type	One Sigma Uncertainty
Fission and Activation Gases	Gaseous	30%
Radioiodines	Gaseous	17%
Particulates	Gaseous	16%
Tritium	Gaseous	25%
Gross Alpha	Gaseous	16%

Gaseous Releases by Individual Nuclide

Values in the following tables which are preceded by the “less than” symbol represent the lower limit of detection (LLD) in units of microcuries per cubic centimeter ($\mu\text{Ci}/\text{cc}$) for individual samples, and indicate that the nuclide in question was not detected in gaseous effluent samples in the indicated quarter of 2007. For quantities of gross alpha radioactivity and tritium in gaseous effluents, see Tables 3 and 4 on page 13 of this report.

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A. Particulate Radionuclides (Curies)

Nuclide	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Cr-51	1.13E-04	2.35E-05	4.58E-05	4.14E-04
Mn-54	1.01E-05	3.88E-06	1.75E-05	7.58E-05
Co-58	1.05E-05	<2.5E-13	1.38E-05	4.12E-05
Co-60	2.48E-05	3.08E-06	4.22E-05	1.07E-04
Zn-65	9.10E-06	<4.3E-13	8.58E-06	<4.3E-13
Fe-59	<4.0E-13	<4.0E-13	<4.0E-13	4.95E-05
Na-24	3.56E-05	7.25E-05	<2.6E-13	<2.6E-13
Zn-69m	1.86E-04	4.42E-05	<5.1E-13	1.87E-05
Tc-99m	1.25E-04	5.39E-05	6.33E-05	<6.6E-13
Ba-139	8.27E-02	5.32E-02	5.11E-02	5.45E-02
La-140	3.84E-05	1.94E-05	8.50E-06	5.94E-05
Ba-140	6.61E-06	<3.4E-13	<3.4E-13	2.43E-05
Y-91m	3.12E-03	2.65E-03	6.12E-04	5.71E-03
Sr-91	9.63E-05	<6.1E-12	<6.1E-12	<6.1E-12
Rb-89	1.65E-02	<6.1E-10	<6.1E-10	2.55E-02
Cs-138	3.87E-02	3.21E-02	3.49E-02	3.47E-02
As-76	7.03E-03	1.31E-02	5.60E-03	3.33E-03
Br-82	1.58E-05	5.01E-05	2.03E-05	2.33E-05
Ag-110m	4.38E-06	<2.2E-13	<2.2E-13	<2.2E-13
Sr-89	3.03E-05	1.43E-05	2.28E-05	3.14E-05
Sr-90	7.79E-06	1.50E-06	<5.5E-15	<5.5E-15
Cs-134	<1.3E-13	<1.3E-13	<1.3E-13	<1.3E-13
Cs-137	<1.6E-13	<1.6E-13	<1.6E-13	<1.6E-13
Ce-141	<1.4E-13	<1.4E-13	<1.4E-13	<1.4E-13
Ce-143	<3.6E-13	<3.6E-13	<3.6E-13	<3.6E-13
Ce-144	<2.5E-13	<2.5E-13	<2.5E-13	<2.5E-13
Total	1.49E-01	1.01E-01	9.25E-02	1.25E-01

B. Noble Gases (Curies)

Nuclide	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Kr-87	<8.7E-08	<8.7E-08	<8.7E-08	<8.7E-08
Kr-88	<1.0E-07	<1.0E-07	<1.0E-07	<1.0E-07
Xe-133	<5.7E-08	<5.7E-08	<5.7E-08	<5.7E-08
Xe-133m	<1.1E-07	<1.1E-07	<1.1E-07	<1.1E-07
Xe-135	<1.5E-08	<1.5E-08	<1.5E-08	<1.5E-08
Xe-138	<3.8E-05	<3.8E-05	<3.8E-05	<3.8E-05
Total	<3.8E-05	<3.8E-05	<3.8E-05	<3.8E-05

C. Radioiodines (Curies)

Nuclide	Quarter 1	Quarter 2	Quarter 3	Quarter 4
I-131	4.48E-04	5.26E-04	6.66E-04	1.05E-03
I-132	2.70E-03	3.39E-03	3.39E-03	4.35E-04
I-133	2.98E-03	4.40E-03	4.30E-03	1.20E-03
I-134	1.13E-03	4.65E-03	2.16E-03	<3.3E-11
I-135	1.55E-03	4.36E-03	2.68E-03	<8.0E-12
Total	8.81E-03	1.73E-02	1.32E-02	2.69E-03

Shipments of Radwaste

Fermi 2 complies with the extensive federal regulations which govern radioactive waste shipments. Radioactive solid waste shipments from the Fermi 2 site consist of waste generated during water treatment, radioactive trash, irradiated components, etc. Shipment destinations are either licensed burial sites or intermediate processing facilities. Waste shipped to intermediate processing facilities is shipped directly from these facilities to licensed burial sites after processing. The following tables contain estimates of major nuclide composition, by class of waste, of Fermi 2 solid radwaste received at the Barnwell, SC, burial facility or at the Envirocare, UT, facility in 2007.

- a. **Spent resins, sludges, etc.** Waste in this category in 2007 was Class A or Class B waste and consisted of spent resins and sludges. It was shipped in either High Integrity Containers or Polyethylene Liners, within shielded transportation casks, directly to the Barnwell, SC, or Clive, UT, burial facilities. Waste sent directly to a disposal facility was dewatered prior to shipment. All quantities were determined by measurement.

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Class A Resin:

Radionuclide	Activity (mCi)	Percent of Total Activity
Ag-110m	1.70E+01	0.01
C-14	1.25E+02	0.04
Ce-144	2.27E+00	<0.01
Co-57	2.46E-01	<0.01
Co-58	1.65E+02	0.05
Co-60	1.03E+05	33.38
Cs-134	4.92E+01	0.02
Cs-137	5.59E+02	0.18
Fe-55	1.70E+05	55.09
H-3	1.23E+02	0.04
Mn-54	1.75E+04	5.68
Ni-63	3.55E+03	1.15
Pu-241	3.46E+00	<0.01
Sr-90	9.63E+00	<0.01
Zn-65	1.34E+04	4.36
Total	3.08E+05	100

2. Class B Resin:

Radionuclide	Activity (mCi)	Percent of Total Activity
Am-241	3.98E-03	<0.01
C-14	9.02E+00	<0.01
Cm-242	7.87E-04	<0.01
Cm-243	1.60E-02	<0.01
Cm-244	1.56E-02	<0.01
Co-57	5.52E+01	0.01
Co-58	1.31E+03	0.21
Co-60	1.92E+05	30.25
Cr-51	1.56E+01	<0.01
Cs-134	4.08E+02	0.06
Cs-137	9.82E+03	1.55
Fe-55	3.43E+05	54.15
H-3	3.15E+01	<0.01
Mn-54	6.32E+04	9.98
Ni-63	7.14E+03	1.13
Pu-238	1.12E-02	<0.01
Pu-239	2.76E-03	<0.01
Pu-240	2.76E-03	<0.01
Sr-90	9.75E+00	<0.01
Zn-65	1.69E+04	2.66
Total	6.33E+05	100

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3. Class C Resin: None shipped

b. Dry compressible waste, contaminated equipment, etc. Waste in this category in 2007 was shipped in strong tight containers, and was classified as dry active waste (DAW). All waste in this category was Class A waste. The DAW was compacted, and sent for direct disposal or incinerated by an intermediate processor. All quantities were determined by measurement.

Radionuclide	Activity (mCi)	Percent of Total Activity
C-14 (LLD)	8.51E+01	NA
Co-58	6.23E+00	0.56%
Co-60	2.07E+02	18.53%
Cr-51	1.31E+01	1.18%
Cs-137	2.76E-01	0.02%
Fe-55	7.07E+02	63.40%
Fe-59	4.59E+00	0.41%
H-3	1.15E+02	10.34%
I-129 (LLD)	3.50E+00	NA
Mn-54	5.16E+01	4.63%
Ni-63	3.93E-01	0.04%
Tc-99 (LLD)	6.50E+01	NA
Zn-65	9.90E+00	0.89%
Total Activity	1.11E+03	100%

c. Irradiated components, control rods, etc. No waste in this category was shipped.

d. Other No waste in this category was shipped to a disposal site.

Appendix F

Interlaboratory Comparison Data
Areva NP Inc. Environmental Laboratory's
Quality Assurance Programs

Interlaboratory Comparison Program for 2007

In an interlaboratory comparison program, participant laboratories receive from a commerce source, environmental samples of known activity concentration for analysis. After the samples have been analyzed by the laboratory, the manufacturer of the sample reports the known activity concentration of the samples to the laboratory. The laboratory compares its results to the reported concentrations to determine any significant deviations, investigates such deviations if found, and initiates corrective action if necessary. Participation in this program provides assurance that the contract laboratory is capable of meeting accepted criteria for radioactivity analysis.

Included in this Appendix are selected tables from the Semi-Annual Status Reports covering the Areva NP Inc. Environmental Laboratory's Quality Assurance Programs for the first and second halves of 2007.

For the report covering January – June 2007, the laboratory achieved:

- 99.3% of 443 individual QC analyses evaluated during this semi-annual period met E-LAB acceptance criteria for bias, while
- 99.7% of 305 QC analyses met the Laboratory QC acceptance criteria for precision.

For the report covering July – December 2007, the laboratory achieved:

- 96.2% of 372 individual QC analyses evaluated during this semi-annual period met E-LAB acceptance criteria for bias, while
- 100% of 184 QC analyses met the Laboratory QC acceptance criteria for precision.

TABLE 2

**AREVA NP ENVIRONMENTAL LABORATORY
ECKERT & ZIELGLER ANALYTICS ENVIRONMENTAL CROSS CHECK PROGRAM
PERFORMANCE EVALUATION**

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	Ratio E-LAB/ Analytics	Evaluation
E5222-162	4th/2006	Water	H-3	pCi/L	14570	14800	0.99	Agreement
E5223-162	4th/2006	Water	Sr-89	pCi/L	68.8	72.6	0.95	Agreement
E5223-162	4th/2006	Water	Sr-90	pCi/L	5.56	5.9	0.94	Agreement
E5224-162	4th/2006	Filter	Gross Alpha	pCi	63.3	67.2	0.94	Agreement
E5224-162	4th/2006	Filter	Gross Beta	pCi	209.6	203	1.03	Agreement
E5225-162	4th/2006	Filter	Ce-141	pCi	179.0	185	0.97	Agreement
E5225-162	4th/2006	Filter	Cr-51	pCi	277.9	273	1.02	Agreement
E5225-162	4th/2006	Filter	Cs-134	pCi	89.1	92.7	0.96	Agreement
E5225-162	4th/2006	Filter	Cs-137	pCi	158.8	149	1.06	Agreement
E5225-162	4th/2006	Filter	Co-58	pCi	54.0	52.8	1.02	Agreement
E5225-162	4th/2006	Filter	Mn-54	pCi	71.2	69.8	1.02	Agreement
E5225-162	4th/2006	Filter	Fe-59	pCi	51.0	50.2	1.02	Agreement
E5225-162	4th/2006	Filter	Zn-65	pCi	104.3	103	1.01	Agreement
E5225-162	4th/2006	Filter	Co-60	pCi	166.7	177	0.94	Agreement
E5226-162	4th/2006	Filter	Sr-89	pCi	69.5	74.2	0.94	Agreement
E5226-162	4th/2006	Filter	Sr-90	pCi	6.46	6.06	1.07	Agreement
E5227-162	4th/2006	Milk	I-131LL	pCi/L	71.0	70.8	1.00	Agreement
E5227-162	4th/2006	Milk	I-131	pCi/L	64.8	70.8	0.91	Agreement
E5227-162	4th/2006	Milk	Ce-141	pCi/L	277.7	294	0.94	Agreement
E5227-162	4th/2006	Milk	Cr-51	pCi/L	430.7	433	0.99	Agreement
E5227-162	4th/2006	Milk	Cs-134	pCi/L	141.4	147	0.96	Agreement
E5227-162	4th/2006	Milk	Cs-137	pCi/L	233.9	237	0.99	Agreement
E5227-162	4th/2006	Milk	Co-58	pCi/L	83.1	83.8	0.99	Agreement
E5227-162	4th/2006	Milk	Mn-54	pCi/L	110.6	111	1.00	Agreement
E5227-162	4th/2006	Milk	Fe-59	pCi/L	82.3	79.7	1.03	Agreement
E5227-162	4th/2006	Milk	Zn-65	pCi/L	171.4	164	1.05	Agreement
E5227-162	4th/2006	Milk	Co-60	pCi/L	273.1	281	0.97	Agreement
E5228-162	4th/2006	Charcoal	I-131	pCi	84.2	87.1	0.97	Agreement

TABLE 2
(continued)
AREVA NP ENVIRONMENTAL LABORATORY
ECKERT & ZIELGLER ANALYTICS ENVIRONMENTAL CROSS CHECK PROGRAM
PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	Ratio E-LAB/ Analytics	Evaluation
E5238-162	1st/2007	Water	Gross Alpha	pCi/L	117	112	1.05	Agreement
E5238-162	1st/2007	Water	Gross Beta	pCi/L	104	100	1.04	Agreement
E5239-162	1st/2007	Water	I-131LL	pCi/L	88.3	89.8	0.98	Agreement
E5239-162	1st/2007	Water	I-131	pCi/L	74.3	89.8	0.83	Agreement
E5239-162	1st/2007	Water	Ce-141	pCi/L	257	258	1.00	Agreement
E5239-162	1st/2007	Water	Cr-51	pCi/L	218	213	1.02	Agreement
E5239-162	1st/2007	Water	Cs-134	pCi/L	93.6	97.1	0.96	Agreement
E5239-162	1st/2007	Water	Cs-137	pCi/L	197	204	0.97	Agreement
E5239-162	1st/2007	Water	Co-58	pCi/L	86.2	85.8	1.00	Agreement
E5239-162	1st/2007	Water	Mn-54	pCi/L	155	158	0.98	Agreement
E5239-162	1st/2007	Water	Fe-59	pCi/L	87.1	91.7	0.95	Agreement
E5239-162	1st/2007	Water	Zn-65	pCi/L	886	869	1.02	Agreement
E5239-162	1st/2007	Water	Co-60	pCi/L	131	132	0.99	Agreement
E5240-162	1st/2007	Water	Sr-89	pCi/L	127	137	0.92	Agreement
E5240-162	1st/2007	Water	Sr-90	pCi/L	9.39	9.99	0.94	Agreement
E5241-162	1st/2007	Charcoal	I-131	pCi	67.6	70.2	0.96	Agreement
E5242-162	1st/2007	Filter	Gross Alpha	pCi	67.2	69.1	0.97	Agreement
E5242-162	1st/2007	Filter	Gross Beta	pCi	69.4	61.9	1.12	Agreement
E5243-162	1st/2007	Milk	I-131LL	pCi/L	85.1	85.2	1.00	Agreement
E5243-162	1st/2007	Milk	I-131	pCi/L	75.4	85.2	0.88	Agreement
E5243-162	1st/2007	Milk	Ce-141	pCi/L	294	297	0.99	Agreement
E5243-162	1st/2007	Milk	Cr-51	pCi/L	226	245	0.92	Agreement
E5243-162	1st/2007	Milk	Cs-134	pCi/L	104	112	0.93	Agreement
E5243-162	1st/2007	Milk	Cs-137	pCi/L	228	234	0.97	Agreement
E5243-162	1st/2007	Milk	Co-58	pCi/L	98.1	98.8	0.99	Agreement
E5243-162	1st/2007	Milk	Mn-54	pCi/L	184	182	1.01	Agreement
E5243-162	1st/2007	Milk	Fe-59	pCi/L	109	106	1.03	Agreement
E5243-162	1st/2007	Milk	Zn-65	pCi/L	1041	1000	1.04	Agreement
E5243-162	1st/2007	Milk	Co-60	pCi/L	148	152	0.98	Agreement
E5244-162	1st/2007	Milk	Sr-89	pCi/L	126	137	0.92	Agreement
E5244-162	1st/2007	Milk	Sr-90	pCi/L	8.85	10	0.88	Agreement

TABLE 2
(continued)
AREVA NP ENVIRONMENTAL LABORATORY
ECKERT & ZIELGLER ANALYTICS ENVIRONMENTAL CROSS CHECK PROGRAM
PERFORMANCE EVALUATION

Sample Number	Quarter/Year	Sample Media	Nuclide	Units	Reported Value	Known Value	Ratio E-LAB/Analytics	Evaluation
E5334-162	2nd/2007	Water	H-3	pCi/L	8520	(1)		
E5335-162	2nd/2007	Filter	Gross Alpha	pCi	122.7	(1)		
E5335-162	2nd/2007	Filter	Gross Beta	pCi	137.9	(1)		
E5335-162	2nd/2007	Filter	Ce-141	pCi/L	94.1	(1)		
E5335-162	2nd/2007	Filter	Cr-51	pCi/L	230	(1)		
E5335-162	2nd/2007	Filter	Cs-134	pCi/L	114.3	(1)		
E5335-162	2nd/2007	Filter	Cs-137	pCi/L	86.3	(1)		
E5335-162	2nd/2007	Filter	Co-58	pCi/L	98.4	(1)		
E5335-162	2nd/2007	Filter	Mn-54	pCi/L	83.8	(1)		
E5335-162	2nd/2007	Filter	Fe-59	pCi/L	79	(1)		
E5335-162	2nd/2007	Filter	Zn-65	pCi/L	166.5	(1)		
E5335-162	2nd/2007	Filter	Co-60	pCi/L	112.4	(1)		
E5337-162	2nd/2007	Filter	Sr-89	pCi/L	71.4	(1)		
E5337-162	2nd/2007	Filter	Sr-90	pCi/L	10.1	(1)		
E5338-162	2nd/2007	Milk	I-131LL	pCi/L	73.5	(1)		
E5338-162	2nd/2007	Milk	I-131	pCi/L	75	(1)		
E5338-162	2nd/2007	Milk	Ce-141	pCi/L	167.5	(1)		
E5338-162	2nd/2007	Milk	Cr-51	pCi/L	446.7	(1)		
E5338-162	2nd/2007	Milk	Cs-134	pCi/L	222.5	(1)		
E5338-162	2nd/2007	Milk	Cs-137	pCi/L	164.8	(1)		
E5338-162	2nd/2007	Milk	Co-58	pCi/L	203.4	(1)		
E5338-162	2nd/2007	Milk	Mn-54	pCi/L	177.9	(1)		
E5338-162	2nd/2007	Milk	Fe-59	pCi/L	170	(1)		
E5338-162	2nd/2007	Milk	Zn-65	pCi/L	342.9	(1)		
E5338-162	2nd/2007	Milk	Co-60	pCi/L	237.5	(1)		

(1) - Results have been submitted for evaluation.

TABLE 4

DEPARTMENT OF ENERGY MIXED ANALYTE
PERFORMANCE EVALUATION PROGRAM

SAMPLE ID	MATRIX/ UNITS	REFERENCE DATE	RADIO- NUCLIDE	REPORTED MEAN VALUE Bq/Units	MAPEP VALUE Bq/Units	% Bias	EVALUATION
MAPEP-07-RdF17	Filter (Bq/filter)	1-Jan-07	Cs-134	3.59	4.196	-14.4	Agreement
MAPEP-07-RdF17	Filter (Bq/filter)	1-Jan-07	Cs-137	2.53	2.5693	-1.5	Agreement
MAPEP-07-RdF17	Filter (Bq/filter)	1-Jan-07	Co-57	3.31	2.8876	14.6	Agreement
MAPEP-07-RdF17	Filter (Bq/filter)	1-Jan-07	Co-60	2.83	2.9054	-2.6	Agreement
MAPEP-07-RdF17	Filter (Bq/filter)	1-Jan-07	Mn-54	3.54	3.5185	0.6	Agreement
MAPEP-07-RdF17	Filter (Bq/filter)	1-Jan-07	Sr-90	0.565	0.6074	-7.0	Agreement
MAPEP-07-RdF17	Filter (Bq/filter)	1-Jan-07	Zn-65	2.25	2.628	-16.1	Agreement
MAPEP-07-MaS17	Soil (Bq/kg)	1-Jan-07	Cs-134	358.2	327.4	9.4	Agreement
MAPEP-07-MaS17	Soil (Bq/kg)	1-Jan-07	Cs-137	875.9	799.7	9.5	Agreement
MAPEP-07-MaS17	Soil (Bq/kg)	1-Jan-07	Co-57	518.6	471.2	10.1	Agreement
MAPEP-07-MaS17	Soil (Bq/kg)	1-Jan-07	Co-60	296.9	274.7	8.1	Agreement
MAPEP-07-MaS17	Soil (Bq/kg)	1-Jan-07	Mn-54	766.7	685.2	11.9	Agreement
MAPEP-07-MaS17	Soil (Bq/kg)	1-Jan-07	K-40	655	602	8.8	Agreement
MAPEP-07-MaS17	Soil (Bq/kg)	1-Jan-07	Zn-65	595.6	536.8	11.0	Agreement
MAPEP-07-RdV17	Vegetation (Bq/sample)	1-Jan-07					(1)
MAPEP-07-MaW17	Water (Bq/L)	1-Jan-07	Cs-134	82.43	83.5	-1.3	Agreement
MAPEP-07-MaW17	Water (Bq/L)	1-Jan-07	Cs-137	158.6	163	-2.7	Agreement
MAPEP-07-MaW17	Water (Bq/L)	1-Jan-07	Co-57	139.17	143.7	-3.2	Agreement
MAPEP-07-MaW17	Water (Bq/L)	1-Jan-07	Co-60	26.68	26.9	-0.8	Agreement
MAPEP-07-MaW17	Water (Bq/L)	1-Jan-07	H-3	303	283	7.1	Agreement
MAPEP-07-MaW17	Water (Bq/L)	1-Jan-07	Mn-54	122.8	123.8	-0.8	Agreement
MAPEP-07-MaW17	Water (Bq/L)	1-Jan-07	Sr-90	8.55	8.87	-3.6	Agreement
MAPEP-07-MaW17	Water (Bq/L)	1-Jan-07	Zn-65	116.3	114.8	1.3	Agreement

(1) - Vegetation sample not analyzed this round due to difficulties encountered with provided sample.

TABLE 6

**INTRA-LABORATORY ENVIRONMENTAL PROCESS CONTROL RESULTS BY
AREVA NP ENVIRONMENTAL LABORATORY
ACCEPTANCE CRITERIA, MEDIA, AND MEASUREMENT CATEGORIES
JANUARY - JUNE 2007**

	Bias Criteria (1)				Precision Criteria (2), (3)			
	1	2	3	4	1	2	3	4
I. Air Particulate								
Beta	117	13	0	0	0	0	0	0
II. Air Charcoal								
Gamma-Quantitative	48	12	4	0	0	0	0	0
III. Food (Aquatic/Terrestrial)								
Gamma	0	0	0	0	11	0	9	0
IV. Milk								
Gamma	0	0	0	0	8	2	8	0
Iodine (LL)	0	0	0	0	0	0	0	0
V. Soil/Sed.								
Gamma	1	1	0	0	0	0	0	0
Ni-63	1	0	0	0	0	0	0	0
Sr-90	0	0	0	1	0	0	0	0
VI. Vegetation (Aquatic/Terrestrial)								
Gamma	0	0	0	0	5	3	11	0
VII. Water								
Gross Alpha	3	3	1	1	3	2	2	0
Gross Beta	7	3	1	0	4	2	1	1
Gamma	8	9	1	0	0	4	22	0
Iodine (LL)	0	0	0	0	0	0	0	0
Ni-63	4	0	2	0	0	2	2	0
Sr-90	4	2	5	0	4	2	4	0
Tritium	8	6	1	1	4	5	9	0
Total Number in Range:	201	49	15	3	39	22	68	1
Percentage of Total Processed:	75.0	18.3	5.6	1.1	30.0	16.9	52.3	0.8
Sum of Analyses:	268				130			

(1) Percent Bias by Deviation Category as noted in Table 1, Footnote (1)

(2) Percent Precision by Deviation Category as noted in Table 1, Footnote (2)

(3) Most Precision data generated from non-positive client samples for specific contractual evaluation

* Total may not equal 100 due to rounding

TABLE 7

**AREVA NP ENVIRONMENTAL LABORATORY
ENVIRONMENTAL INTRA-LABORATORY AND INTER-LABORATORY
DATA SUMMARY BIAS AND PRECISION BY MEDIA
JANUARY - JUNE 2007**

	Bias Criteria (1)				Precision Criteria (2), (3)			
	1	2	3	4	1	2	3	4
I. Air Filter								
Gross Alpha	4	2	0	0	6	0	0	0
Gross Beta	120	13	3	0	6	0	0	0
Gamma	20	7	0	0	27	0	0	0
Sr-89	1	0	1	0	0	2	0	0
Sr-90	1	0	1	0	0	2	0	0
II. Charcoal								
Gamma-Quantitative	52	13	5	0	3	3	0	0
III. Food (Aquatic/Terrestrial)								
Gamma	0	0	0	0	11	0	9	0
IV. Milk								
Gamma	42	13	5	0	60	9	9	0
Iodine (LL)	4	1	1	0	4	1	1	0
Sr-89	1	2	0	0	3	0	0	0
Sr-90	1	0	2	0	1	1	1	0
V. Soil/Sediment								
Gamma	1	1	0	0	0	0	0	0
Ni-63	1	0	0	0	0	0	0	0
Sr-90	0	0	0	1	0	0	0	0
VI. Vegetation (Aquatic/Terrestrial)								
Gamma	0	0	0	0	5	3	11	0
VII. Water								
Gross Alpha	4	5	1	1	6	2	2	0
Gross Beta	9	3	2	0	6	3	1	1
Gamma	28	15	5	0	26	7	23	0
Iodine (LL)	2	1	0	0	2	1	0	0
Ni-63	4	0	2	0	0	2	2	0
Sr-89	3	2	1	0	6	0	0	0
Sr-90	5	7	5	0	10	2	4	0
Tritium	11	6	1	1	7	5	9	0
Total Number in Range:	314	91	35	3	189	43	72	1
Percentage of Total Processed:	70.9	20.5	7.9	0.7	62.0	14.1	23.6	0.3
Sum of Analyses:	443				305			

(1) Percent Bias by Deviation Category as noted in Table 1, Footnote (1)

(2) Percent Precision by Deviation Category as noted in Table 1, Footnote (2)

(3) Most Precision data generated from non-positive client samples for specific contractual evaluation

* Total may not equal 100 due to rounding.

** Totals summarize Internal PCs and Analytics Cross Check programs

TABLE 8

**AREVA NP ENVIRONMENTAL LABORATORY
ENVIRONMENTAL INTRA-LABORATORY AND INTER-LABORATORY
DATA SUMMARY BIAS AND PRECISION BY ANALYSIS TYPE
JANUARY - JUNE 2007**

	Bias Criteria (1)				Precision Criteria (2), (3)			
	1	2	3	4	1	2	3	4
I. Gross Alpha								
Air Filter	4	2	0	0	6	0	0	0
Water	4	5	1	1	6	2	2	0
II. Gross Beta								
Air Filter	120	13	3	0	6	0	0	0
Water	9	3	2	0	6	3	1	1
III. Gamma								
Air Filter	20	7	0	0	27	0	0	0
Charcoal-Quantitative	52	13	5	0	3	3	0	0
Food	0	0	0	0	11	0	9	0
Milk	42	13	5	0	60	9	9	0
Soil/Sediment	1	1	0	0	0	0	0	0
Vegetation	0	0	0	0	5	3	11	0
Water	28	15	5	0	26	7	23	0
IV. Iodine (LL)								
Milk	4	1	1	0	4	1	1	0
Water	2	1	0	0	2	1	0	0
V. Ni-63								
Soil/Sediment	1	0	0	0	0	0	0	0
Water	4	0	2	0	0	2	2	0
V. Sr-89								
Air Filter	1	0	1	0	0	2	0	0
Milk	1	2	0	0	3	0	0	0
Water	3	2	1	0	6	0	0	0
VI. Sr-90								
Air Filter	1	0	1	0	0	2	0	0
Milk	1	0	2	0	1	1	1	0
Soil/Sediment	0	0	0	1	0	0	0	0
Water	5	7	5	0	10	2	4	0
VII. Tritium								
Water	11	6	1	1	7	5	9	0
Total Number in Range:	314	91	35	3	189	43	72	1
Percentage of Total Processed:	70.9	20.5	7.9	0.7	62.0	14.1	23.6	0.3
Sum of Analyses:	443				305			

(1) Percent Bias by Deviation Category as noted in Table 1, Footnote (1)

(2) Percent Precision by Deviation Category as noted in Table 1, Footnote (2)

(3) Most Precision data generated from non-positive client samples for specific contractual evaluation

* Total may not equal 100 due to rounding.

** Totals summarize Internal PCs and Analytics Cross Check programs

TABLE 10

ECKERT & ZIEGLER ANALYTICS RADIOCHEMISTRY CROSSCHECK PROGRAM RESULTS BY
 AREVA NP ENVIRONMENTAL LABORATORY
 ACCEPTANCE CRITERIA, MEDIA, AND MEASUREMENT CATEGORIES
 JANUARY - JUNE 2007

	Bias Criteria (1)				Precision Criteria (2)			
	1	2	3	4	1	2	3	4
I. Water								
Fe-55	3	1	2	0	3	3	0	0
Sr-89	3	2	1	0	4	2	0	0
Sr-90	2	2	2	0	2	4	0	0
Total Number in Range:	8	5	5	0	9	9	0	0
Percentage of Total Processed:	44.4	27.8	27.8	0.0	50.0	50.0	0.0	0.0
Sum of Analyses:	18				18			

(1) Percent Bias by Deviation Category as noted in Table 12, Footnote (1)

(2) Percent Precision by Deviation Category as noted in Table 12, Footnote (2)

* Total may not equal 100 due to rounding

TABLE 11

AREVA NP ENVIRONMENTAL LABORATORY
 ECKERT & ZIEGLER ANALYTICS RADIOCHEMISTRY CROSS-CHECK
 PERFORMANCE EVALUATION

Sample Number	Quarter/Year	Sample Media	Nuclide	Units	Mean	Known Value	Ratio	Evaluation
					Reported Value		E-LAB/Analytics	
A21176-162	1st/2007	Liquid	Fe-55	uCi/cc	7.75E-04	6.97E-04	1.11	Agreement
A21177-162	1st/2007	Liquid	Sr-89	uCi/cc	8.21E-03	7.96E-03	1.03	Agreement
A21177-162	1st/2007	Liquid	Sr-90	uCi/cc	3.96E-04	4.01E-04	0.99	Agreement
A21481-162	2nd/2007	Liquid	Fe-55	uCi/cc	9.24E-04	9.02E-04	1.02	Agreement
A21482-162	2nd/2007	Liquid	Sr-89	uCi/cc	1.96E-02	2.00E-02	0.98	Agreement
A21482-162	2nd/2007	Liquid	Sr-90	uCi/cc	1.82E-03	1.87E-03	0.97	Agreement

TABLE 16

**CONDITION REPORT (CR) STATUS
JANUARY - JUNE 2007**

CR #	(OPEN) INITIATION DATE	(CLOSED) CLOSE-OUT DATE	DESCRIPTION	STATUS AS OF 07/01/07
CR 06-16	18-Oct-06	1-May-07	Analytics environmental cross check for Sr-90 in air filter failed to meet acceptance criteria	CLOSED - Sample was re-eluted from Sr column and results were determined to meet acceptance criteria. Documentation was reviewed and no errors were identified. Sr-90 3rd party QC results were reviewed with no significant problems noted with Analytics samples. Backgrounds and blanks are being updated on a more frequent basis.
CR 06-17	19-Oct-06	2-Jan-07	Procedure required reading for two chemists was noted to be incomplete.	CLOSED - A detailed review of required reading compliance was conducted. All missing training was completed. A review of the impact on quality was performed with no problems noted. A modification to the process for issuing training was made. Instead of each supervisor sending training notices to their employees, a single training coordinator will provide the notices from a master training matrix that is approved and maintained by the LQARC.
CR 06-18	20-Oct-06	20-Jun-07	Numerous contract review forms were identified to have not been completed as required.	CLOSED - A review of all contract files was completed to identify any missing forms. These forms have been generated and approved. A new procedure detailing contract review is in effect that includes tracking forms for all new and revised contracts.
CR 06-19	13-Nov-06	1-May-07	MAPEP vegetation gamma spectroscopy results were evaluated as "Warning."	CLOSED - Problems with non-homogeneity of the MAPEP vegetation gamma sample. A backup sample has been obtained. Per MAPEP Coordinator, non-homogeneity of sample prohibits use as calibration standard. Future vegetation samples to be analyzed in elevated geometry.
CR 06-20	13-Nov-06		MAPEP soil gamma spectroscopy results were evaluated as "Not Acceptable."	OPEN - A backup sample has obtained from MAPEP and will be recounted for extended count to evaluate previous failure.
CR 06-21	13-Nov-06		MAPEP air particulate Sr-90 results were evaluated as "Warning."	OPEN - A backup sample has been obtained to permit reprocessing. Filter dissolution testing as well as instrument background and analytical blank testing is being conducted.
CR 06-22	15-Nov-06		IAEA gamma spectroscopy sample results for soil, grass, and water had radionuclides evaluated as "Warning" and "Not Acceptable."	OPEN - Reprocessing of the 3 matrices is being conducted to determine the source of any errors.
CR 06-23	21-Nov-06	1-May-07	Problems were encountered during the processing of ERA Proficiency Test set RAD-67 (LSN L11509): 1) gross alpha/beta sample prep not completed until report due date, 2) 2 reports listed incorrect "Method," 3) no analytical blank for gross alpha/beta.	CLOSED - 1) gross beta failed PT limits due to insufficient time for radon daughter decay. Results from recount the next day indicated successful results. All chemists have been reminded of the need to utilize the LIMS processing work lists. Management has been reminded to more closely track PT samples with hard due dates. 2) LIMS V&V to add "Methods" to reports found to be incorrectly completed. LIMS reports have been modified to include "methods". V+V of change in process. 3) Chemists have been reminded of the need to perform blanks as required by QA Manual.
CR 06-24	5-Dec-06	1-May-07	Part 61 Process Check sample for I-129 failed precision limits but had acceptable bias results.	CLOSED - The I-129 precipitate was noted to have an unusual color/consistency but exhibited a stable weight. When recovery values are removed, the activity values are extremely consistent. The stability of the chemicals, reagents, standards used in processing failed to identify a problem. The heating block was noted to have some edge positions that do not heat to same degree as internal positions. Insufficient distillation time determined to be cause of failure. Analyst counseled, procedure already contains sufficient details.

TABLE 16

**CONDITION REPORT (CR) STATUS
JANUARY - JUNE 2007**

CR #	(OPEN) INITIATION DATE	(CLOSED) CLOSE-OUT DATE	DESCRIPTION	STATUS AS OF 12/31/06
LO-CAR-2006-00135 NUPIC Audit Finding	16-Nov-06	23-Mar-07	A gamma spectroscopy unit was not tagged out of service with the procedurally required "Do Not Use" tag.	CLOSED - The unit has been properly tagged, personnel have been re-trained to the procedure, and the improper tags have been destroyed.
2006-00136 NUPIC Audit Finding	16-Nov-06	23-Mar-07	A vendor audit finding was issued using a form not in an approved procedure/manual.	CLOSED - Condition Report Manual 180 has been revised to include the form for vendor findings.
LO-CAR-2006-00137 NUPIC Audit Finding	16-Nov-06	23-Mar-07	The QA Manual 100 requires additional controls for: 1) record controls, 2) audit definition and lead auditor qualifications, and 3) procurement controls.	CLOSED - QA Manual 100 has been revised to incorporate recommended verbiage for the three areas noted to enhance existing controls.
CR 07-01	4-Jan-07	15-Feb-07	Environmental water sample reported by E-LAB to have positive Cs-137 activity that was not confirmed by independent laboratory	CLOSED - Sample was determined to have been cross-contaminated during pre-analysis filtering by another environmental sample that contained high amounts of Cs-137 that was not disclosed by the client. New sample receipt protocol implemented to preclude cross contamination of environmental samples.
CR 07-02	9-Jan-07		Internal QA Assessment noted 4 admin issues not addressed by QA Plan: 1) missing cross-reference, 2) biennial testing by NVLAP, 3) incorrect company reference on forms, 4) failure to set anomaly flags for CER/LER.	OPEN - 1) Cross reference document has been created. 2) QC schedule updated for 2007 to have internal NVLAP dosimeter test, 3) Procedure has been updated, 4) anomaly flags have been set and verified for other CER/LERs.
CR 07-03	11-Jan-07		C-14 Part 61 PC had high positive bias (33.7%).	OPEN - Results from subsequent C-14 PC had acceptable bias. Data compared with no deficiencies noted. Single C-14 spikes to be submitted monthly for evaluation.
CR 07-04	23-Jan-07		3 Gross beta in water samples noted by 2 clients that results were inconsistent with previous results	OPEN - Data reviewers were retrained on trending mechanisms. Gross alpha/beta in water procedure revised to describe recount mechanism, causes of disparate results under investigation.
CR 07-05	31-Jan-07	7-Feb-07	Four client samples indicated non-positive activity for Ni-63 while referee lab found positive activity.	CLOSED - Samples were re-processed and results compared favorably with referee lab. Cause identified to be communication deficiency. Sr-89/90 chemist prepared samples using Sr-89/90 only procedure vice multi-nuclide sequential procedure which caused loss of Ni-63 in processing fraction.
CR 07-06	21-Mar-07		Client sample processing deadlines were missed	OPEN - A project manager assigned to track client sample processing to ensure future deadlines are met. Daily status updates provided to the client for the remainder of the project. Awaiting VP approval for closure - all actions completed.
CR 07-07	21-Mar-07		Environmental water sample MDC for gamma not met due to delay in preparing composite	OPEN - Client notified. Composite sample management controls and processing are now under a single point of accountability. Modifying worksheet to clarify MDC requirement.
CR 07-08	21-Mar-07	1-May-07	A set of H-3 samples (L12012), duplicate and matrix spike were apparently mis-labeled during processing	CLOSED - Performance issues addressed, matrix spike samples regenerated and reprocessed successfully. Chemist has been counseled concerning attention to detail.
CR 07-09	4-Apr-07		Environmental dosimeter result questioned by client.	OPEN - New ECF generated and result was updated using the new value. Evaluation of ECF generation periodicity being performed.

TABLE 1

ECKERT & ZIEGLER ANALYTICS ENVIRONMENTAL CROSSCHECK PROGRAM RESULTS BY
 AREVA NP ENVIRONMENTAL LABORATORY
 ACCEPTANCE CRITERIA, MEDIA, AND MEASUREMENT CATEGORIES
 JULY - DECEMBER 2007

	Bias Criteria (1)				Precision Criteria (2)			
	1	2	3	4	1	2	3	4
I. Air Particulate								
Alpha	3	0	0	3	6	0	0	0
Beta	3	0	3	0	6	0	0	0
Gamma	6	10	6	5	20	7	0	0
Sr-89	0	0	3	0	3	0	0	0
Sr-90	1	0	0	2	0	1	2	0
II. Charcoal								
Gamma	1	2	0	0	2	1	0	0
II. Milk								
Gamma	33	19	6	2	48	8	4	0
Iodine (LL)	4	1	1	0	4	2	0	0
Sr-89	2	0	1	0	2	1	0	0
Sr-90	2	1	0	0	1	2	0	0
III. Water								
Alpha	2	1	0	0	3	0	0	0
Beta	3	0	0	0	3	0	0	0
Gamma	18	7	4	1	27	3	0	0
H-3	1	2	0	0	3	0	0	0
I-131 (LL)	1	2	0	0	2	1	0	0
Sr-89	0	0	0	0	0	0	0	0
Sr-90	0	0	0	0	0	0	0	0
Total Number in Range:	80	45	24	13	130	26	6	0
Percentage of Total Processed:	49.4	27.8	14.8	8.0	80.2	16.0	3.7	0.0
Sum of Analyses:	162				162			

(1) Percent Bias by Deviation Category as noted in Table 1, Footnote (1)

(2) Percent Precision by Deviation Category as noted in Table 1, Footnote (2)

* Total may not equal 100 due to rounding

TABLE 2

**AREVA NP ENVIRONMENTAL LABORATORY
ECKERT & ZIELGLER ANALYTICS ENVIRONMENTAL CROSS CHECK PROGRAM
PERFORMANCE EVALUATION**

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	Ratio E-LAB/ Analytics	Evaluation
E5334-162	2nd/2007	Water	H-3	pCi/L	8520	9040	0.94	Agreement
E5335-162	2nd/2007	Filter	Gross Alpha	pCi	122.7	125	0.98	Agreement
E5335-162	2nd/2007	Filter	Gross Beta	pCi	127	112	1.13	Agreement
E5335-162	2nd/2007	Filter	Ce-141	pCi	94.1	107	0.88	Agreement
E5335-162	2nd/2007	Filter	Cr-51	pCi	230	273	0.84	Non-Agreement (1)
E5335-162	2nd/2007	Filter	Cs-134	pCi	114.3	129	0.89	Agreement
E5335-162	2nd/2007	Filter	Cs-137	pCi	86.3	90.1	0.96	Agreement
E5335-162	2nd/2007	Filter	Co-58	pCi	98.4	106	0.93	Agreement
E5335-162	2nd/2007	Filter	Mn-54	pCi	83.3	88.5	0.94	Agreement
E5335-162	2nd/2007	Filter	Fe-59	pCi	79	89.0	0.89	Agreement
E5335-162	2nd/2007	Filter	Zn-65	pCi	167	178	0.94	Agreement
E5335-162	2nd/2007	Filter	Co-60	pCi	112	127	0.89	Agreement
E5337-162	2nd/2007	Filter	Sr-89	pCi	71.4	91.2	0.78	Agreement
E5337-162	2nd/2007	Filter	Sr-90	pCi	10.1	12.4	0.82	Agreement
E5338-162	2nd/2007	Milk	I-131LL	pCi/L	73.5	70.1	1.05	Agreement
E5338-162	2nd/2007	Milk	I-131	pCi/L	75	70.1	1.07	Agreement
E5338-162	2nd/2007	Milk	Ce-141	pCi/L	168	200	0.84	Non-Agreement (2)
E5338-162	2nd/2007	Milk	Cr-51	pCi/L	447	512	0.87	Agreement
E5338-162	2nd/2007	Milk	Cs-134	pCi/L	223	242	0.92	Agreement
E5338-162	2nd/2007	Milk	Cs-137	pCi/L	165	169	0.98	Agreement
E5338-162	2nd/2007	Milk	Co-58	pCi/L	203	198	1.02	Agreement
E5338-162	2nd/2007	Milk	Mn-54	pCi/L	178	166	1.07	Agreement
E5338-162	2nd/2007	Milk	Fe-59	pCi/L	170	167	1.02	Agreement
E5338-162	2nd/2007	Milk	Zn-65	pCi/L	343	334	1.03	Agreement
E5338-162	2nd/2007	Milk	Co-60	pCi/L	238	238	1.00	Agreement

TABLE 2
(continued)
AREVA NP ENVIRONMENTAL LABORATORY
ECKERT & ZIELGLER ANALYTICS ENVIRONMENTAL CROSS CHECK PROGRAM
PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	Ratio E-LAB/ Analytics	Evaluation
E5430-162	3rd /2007	Water	Gross Alpha	pCi/L	112	109	1.03	Agreement
E5430-162	3rd /2007	Water	Gross Beta	pCi/L	218	214	1.02	Agreement
E5431-162	3rd /2007	Water	I-131LL	pCi/L	83.4	80.1	1.04	Agreement
E5431-162	3rd /2007	Water	I-131	pCi/L	80.2	80.1	1.00	Agreement
E5431-162	3rd /2007	Water	Ce-141	pCi/L	176	182	0.97	Agreement
E5431-162	3rd /2007	Water	Cr-51	pCi/L	228	249	0.92	Agreement
E5431-162	3rd /2007	Water	Cs-134	pCi/L	111	127	0.87	Agreement
E5431-162	3rd /2007	Water	Cs-137	pCi/L	112	112	1.00	Agreement
E5431-162	3rd /2007	Water	Co-58	pCi/L	94.3	98.1	0.96	Agreement
E5431-162	3rd /2007	Water	Mn-54	pCi/L	141	144	0.98	Agreement
E5431-162	3rd /2007	Water	Fe-59	pCi/L	94.8	95.1	1.00	Agreement
E5431-162	3rd /2007	Water	Zn-65	pCi/L	186	174	1.07	Agreement
E5431-162	3rd /2007	Water	Co-60	pCi/L	120	127	0.94	Agreement
E5432-162	3rd /2007	Charcoal	I-131	pCi	66.5	69.6	0.96	Agreement
E5433-162	3rd /2007	Filter	Gross Alpha	pCi	86.4	105	0.82	Non-Agreement (3)
E5433-162	3rd /2007	Filter	Gross Beta	pCi	190	196	0.97	Agreement
E5434-162	3rd /2007	Milk	I-131LL	pCi/L	87.2	85.2	1.02	Agreement
E5434-162	3rd /2007	Milk	I-131	pCi/L	82.9	85.2	0.97	Agreement
E5434-162	3rd /2007	Milk	Ce-141	pCi/L	196	211	0.93	Agreement
E5434-162	3rd /2007	Milk	Cr-51	pCi/L	282	289	0.97	Agreement
E5434-162	3rd /2007	Milk	Cs-134	pCi/L	141	147	0.96	Agreement
E5434-162	3rd /2007	Milk	Cs-137	pCi/L	126	131	0.96	Agreement
E5434-162	3rd /2007	Milk	Co-58	pCi/L	111	114	0.97	Agreement
E5434-162	3rd /2007	Milk	Mn-54	pCi/L	171	168	1.02	Agreement
E5434-162	3rd /2007	Milk	Fe-59	pCi/L	112	111	1.01	Agreement
E5434-162	3rd /2007	Milk	Zn-65	pCi/L	212	202	1.05	Agreement
E5434-162	3rd /2007	Milk	Co-60	pCi/L	145	148	0.98	Agreement
E5435-162	3rd /2007	Milk	Sr-89	pCi/L	89.2	94.9	0.94	Agreement
E5435-162	3rd /2007	Milk	Sr-90	pCi/L	12.9	13.1	0.98	Agreement

(1) Cr-51 on filter outside of acceptance limit. CR 08-02 generated.

(2) Ce-141 in milk outside of acceptance limit. CR 08-02 generated.

(3) Gross alpha on filter outside of acceptance limit. CR 08-01 generated.

TABLE 2
(continued)
AREVA NP ENVIRONMENTAL LABORATORY
ECKERT & ZIELGLER ANALYTICS ENVIRONMENTAL CROSS CHECK PROGRAM
PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Reported Value	Known Value	Ratio E-LAB/ Analytics	Evaluation
E5527-162	4th/2007	Water	H-3	pCi/L	9003	(4)		
E5528-162	4th/2007	Water	Sr-89	pCi/L	87.1	(4)		
E5528-162	4th/2007	Water	Sr-90	pCi/L	14.4	(4)		
E5530-162	4th/2007	Filter	Gross Alpha	pCi	102.7	(4)		
E5530-162	4th/2007	Filter	Gross Beta	pCi	166.1	(4)		
E5531-162	4th/2007	Filter	Ce-141	pCi	84.1	(4)		
E5531-162	4th/2007	Filter	Cr-51	pCi	311.7	(4)		
E5531-162	4th/2007	Filter	Cs-134	pCi	82.3	(4)		
E5531-162	4th/2007	Filter	Cs-137	pCi	108.9	(4)		
E5531-162	4th/2007	Filter	Co-58	pCi	107.5	(4)		
E5531-162	4th/2007	Filter	Mn-54	pCi	117.2	(4)		
E5531-162	4th/2007	Filter	Fe-59	pCi	86.6	(4)		
E5531-162	4th/2007	Filter	Zn-65	pCi	135.3	(4)		
E5531-162	4th/2007	Filter	Co-60	pCi	123.1	(4)		
E5532-162	4th/2007	Filter	Sr-89	pCi	45.9	(4)		
E5532-162	4th/2007	Filter	Sr-90	pCi	7.2	(4)		
E5533-162	4th/2007	Milk	I-131LL	pCi/L	59.2	(4)		
E5533-162	4th/2007	Milk	I-131	pCi/L	58.5	(4)		
E5533-162	4th/2007	Milk	Ce-141	pCi/L	136.0	(4)		
E5533-162	4th/2007	Milk	Cr-51	pCi/L	516.7	(4)		
E5533-162	4th/2007	Milk	Cs-134	pCi/L	137.0	(4)		
E5533-162	4th/2007	Milk	Cs-137	pCi/L	166.2	(4)		
E5533-162	4th/2007	Milk	Co-58	pCi/L	166.5	(4)		
E5533-162	4th/2007	Milk	Mn-54	pCi/L	200.9	(4)		
E5533-162	4th/2007	Milk	Fe-59	pCi/L	155.0	(4)		
E5533-162	4th/2007	Milk	Zn-65	pCi/L	222.9	(4)		
E5533-162	4th/2007	Milk	Co-60	pCi/L	205.1	(4)		
E5529-162	4th/2007	Charcoal	I-131	pCi	69.8	(4)		

(4) - Results have been submitted for evaluation.

TABLE 5

ENVIRONMENTAL RESOURCE ASSOCIATES PROFICIENCY TEST RESULTS
AREVA NP ENVIRONMENTAL LABORATORY

ERA LOT #/ REF. DATE	MATRIX/ UNITS	RADIO- NUCLIDE	REPORTED MEAN VALUE pCi/L	ERA VALUE pCi/L	ERA CONTROL LIMITS	ERA WARNING LIMITS	EVALUATION
RAD 70/ 07-09-2007	Water pCi/L	Gross Alpha	27.6	27.1	15.4-38.8		Acceptable
RAD 70/ 07-09-2007	Water pCi/L	Gross Beta	10.7	11.5	2.84-20.2		Acceptable
RAD 70/ 07-09-2007	Water pCi/L	Tritium	1540	1770	1180-2360		Acceptable
RAD 70/ 07-09-2007	Water pCi/L	Ba-133	16.9	19.4	10.7-28.1		Acceptable
RAD 70/ 07-09-2007	Water pCi/L	Cs-134	69	68.9	60.2-77.6		Acceptable
RAD 70/ 07-09-2007	Water pCi/L	Cs-137	57.5	61.3	52.6-70		Acceptable
RAD 70/ 07-09-2007	Water pCi/L	Co-60	33.7	33.5	24.8-42.2		Acceptable
RAD 70/ 07-09-2007	Water pCi/L	Zn-65	61.9	54.6	45.2-64.0		Acceptable
RAD 70/ 07-09-2007	Water pCi/L	I-131	26.4	26.5	21.3-31.7		Acceptable

TABLE 6

INTRA-LABORATORY ENVIRONMENTAL PROCESS CONTROL RESULTS BY
 AREVA NP ENVIRONMENTAL LABORATORY
 ACCEPTANCE CRITERIA, MEDIA, AND MEASUREMENT CATEGORIES
 JULY - DECEMBER 2007

	Bias Criteria (1)				Precision Criteria (2), (3)			
	1	2	3	4	1	2	3	4
I. Air Particulate								
Beta	112	6	1	0	0	0	0	0
Sr-90	0	0	1	0	0	0	0	0
II. Air Charcoal								
Gamma-Quantitative	46	15	1	0	0	0	0	0
III. Food (Aquatic/Terrestrial)								
Gamma	0	0	0	0	0	0	0	0
IV. Milk								
Gamma	0	0	0	0	0	0	0	0
Iodine (LL)	4	0	1	0	4	0	1	0
V. Soil/Sed.								
Gamma	1	4	1	0	0	0	0	0
Ni-63	0	0	0	0	0	0	0	0
Sr-90	0	0	0	0	0	0	0	0
VI. Vegetation (Aquatic/Terrestrial)								
Gamma	0	0	0	0	0	0	0	0
VII. Water								
Gross Alpha	0	0	0	0	0	0	0	0
Gross Beta	0	0	0	0	0	0	0	0
Gamma	6	0	0	0	6	0	0	0
Iodine (LL)	0	0	0	0	0	0	0	0
Ni-63	0	0	0	0	0	0	0	0
Sr-90	0	0	0	0	0	0	0	0
Tritium	2	7	1	1	9	0	2	0
Total Number in Range:	171	32	6	1	19	0	3	0
Percentage of Total Processed:	81.4	15.2	2.9	0.5	86.4	0.0	13.6	0.0
Sum of Analyses:	210				22			

(1) Percent Bias by Deviation Category as noted in Table 1, Footnote (1)

(2) Percent Precision by Deviation Category as noted in Table 1, Footnote (2)

(3) Most Precision data generated from non-positive client samples for specific contractual evaluation

* Total may not equal 100 due to rounding

TABLE 7

**AREVA NP ENVIRONMENTAL LABORATORY
ENVIRONMENTAL INTRA-LABORATORY AND INTER-LABORATORY
DATA SUMMARY BIAS AND PRECISION BY MEDIA
JULY - DECEMBER 2007**

	Bias Criteria (1)				Precision Criteria (2), (3)			
	1	2	3	4	1	2	3	4
I. Air Filter								
Gross Alpha	3	0	0	3	6	0	0	0
Gross Beta	115	6	4	0	6	0	0	0
Gamma	6	10	6	5	20	7	0	0
Sr-89	0	0	3	0	3	0	0	0
Sr-90	1	0	1	2	0	1	2	0
II. Charcoal								
Gamma-Quantitative	47	17	1	0	2	1	0	0
III. Food (Aquatic/Terrestrial)								
Gamma	0	0	0	0	0	0	0	0
IV. Milk								
Gamma	33	19	6	2	48	8	4	0
Iodine (LL)	8	1	2	0	8	2	1	0
Sr-89	2	0	1	0	2	1	0	0
Sr-90	2	1	0	0	1	2	0	0
V. Soil/Sediment								
Gamma	1	4	1	0	0	0	0	0
Ni-63	0	0	0	0	0	0	0	0
Sr-90	0	0	0	0	0	0	0	0
VI. Vegetation (Aquatic/Terrestrial)								
Gamma	0	0	0	0	0	0	0	0
VII. Water								
Gross Alpha	2	1	0	0	3	0	0	0
Gross Beta	3	0	0	0	3	0	0	0
Gamma	24	7	4	1	33	3	0	0
Iodine (LL)	1	2	0	0	2	1	0	0
Ni-63	0	0	0	0	0	0	0	0
Sr-89	0	0	0	0	0	0	0	0
Sr-90	0	0	0	0	0	0	0	0
Tritium	3	9	1	1	12	0	2	0
Total Number in Range:	251	77	30	14	149	26	9	0
Percentage of Total Processed:	67.5	20.7	8.1	3.8	81.0	14.1	4.9	0.0
Sum of Analyses:	372				184			

(1) Percent Bias by Deviation Category as noted in Table 1, Footnote (1)

(2) Percent Precision by Deviation Category as noted in Table 1, Footnote (2)

(3) Most Precision data generated from non-positive client samples for specific contractual evaluation

* Total may not equal 100 due to rounding.

** Totals summarize Internal PCs and Analytics Cross Check programs

TABLE 8

**AREVA NP ENVIRONMENTAL LABORATORY
ENVIRONMENTAL INTRA-LABORATORY AND INTER-LABORATORY
DATA SUMMARY BIAS AND PRECISION BY ANALYSIS TYPE
JULY - DECEMBER 2007**

	Bias Criteria (1)				Precision Criteria (2), (3)			
	1	2	3	4	1	2	3	4
I. Gross Alpha								
Air Filter	3	0	0	3	6	0	0	0
Water	2	1	0	0	3	0	0	0
II. Gross Beta								
Air Filter	115	6	4	0	6	0	0	0
Water	3	0	0	0	3	0	0	0
III. Gamma								
Air Filter	6	10	6	5	20	7	0	0
Charcoal-Quantitative	47	17	1	0	2	1	0	0
Food	0	0	0	0	0	0	0	0
Milk	33	19	6	2	48	8	4	0
Soil/Sediment	1	4	1	0	0	0	0	0
Vegetation	0	0	0	0	0	0	0	0
Water	24	7	4	1	33	3	0	0
IV. Iodine (LL)								
Milk	8	1	2	0	8	2	1	0
Water	1	2	0	0	2	1	0	0
V. Ni-63								
Soil/Sediment	0	0	0	0	0	0	0	0
Water	0	0	0	0	0	0	0	0
V. Sr-89								
Air Filter	0	0	3	0	3	0	0	0
Milk	2	0	1	0	2	1	0	0
Water	0	0	0	0	0	0	0	0
VI. Sr-90								
Air Filter	1	0	1	2	0	1	2	0
Milk	2	1	0	0	1	2	0	0
Soil/Sediment	0	0	0	0	0	0	0	0
Water	0	0	0	0	0	0	0	0
VII. Tritium								
Water	3	9	1	1	12	0	2	0
Total Number in Range:	251	77	30	14	149	26	9	0
Percentage of Total Processed:	67.5	20.7	8.1	3.8	81.0	14.1	4.9	0.0
Sum of Analyses:	372				184			

(1) Percent Bias by Deviation Category as noted in Table 1, Footnote (1)

(2) Percent Precision by Deviation Category as noted in Table 1, Footnote (2)

(3) Most Precision data generated from non-positive client samples for specific contractual evaluation

* Total may not equal 100 due to rounding.

** Totals summarize Internal PCs and Analytics Cross Check programs

TABLE 10

ECKERT & ZIEGLER ANALYTICS RADIOCHEMISTRY CROSSCHECK PROGRAM RESULTS BY
 AREVA NP ENVIRONMENTAL LABORATORY
 ACCEPTANCE CRITERIA, MEDIA, AND MEASUREMENT CATEGORIES
 JULY - DECEMBER 2007

	Bias Criteria (1)				Precision Criteria (2)			
	1	2	3	4	1	2	3	4
I. Water								
Fe-55	1	2	2	1	3	2	1	0
Sr-89	2	2	2	0	2	4	0	0
Sr-90	1	2	3	0	2	2	2	0
Total Number in Range:	4	6	7	1	7	8	3	0
Percentage of Total Processed:	22.2	33.3	38.9	5.6	38.9	44.4	16.7	0.0
Sum of Analyses:	18				18			

(1) Percent Bias by Deviation Category as noted in Table 12, Footnote (1)

(2) Percent Precision by Deviation Category as noted in Table 12, Footnote (2)

* Total may not equal 100 due to rounding

TABLE 11

AREVA NP ENVIRONMENTAL LABORATORY
 ECKERT & ZIEGLER ANALYTICS RADIOCHEMISTRY CROSS-CHECK
 PERFORMANCE EVALUATION

Sample Number	Quarter/ Year	Sample Media	Nuclide	Units	Mean		Ratio	Evaluation
					Reported Value	Known Value	E-LAB/ Analytics	
A21629-162	3rd/2007	Liquid	Fe-55	uCi/cc	2.76E-03	2.16E-03	1.28	Non-Agreement
A21630-162	3rd/2007	Liquid	Sr-89	uCi/cc	9.84E-03	9.99E-03	0.99	Agreement
A21630-162	3rd/2007	Liquid	Sr-90	uCi/cc	8.87E-04	9.50E-04	0.93	Agreement
A21973-162	4th/2007	Liquid	Fe-55	uCi/cc	1.06E-03	9.99E-04	1.06	Agreement
A21974-162	4th/2007	Liquid	Sr-89	uCi/cc	6.95E-03	7.04E-03	0.99	Agreement
A21974-162	4th/2007	Liquid	Sr-90	uCi/cc	7.67E-04	7.89E-04	0.97	Agreement

TABLE 16
CONDITION REPORT (CR) STATUS
JULY - DECEMBER 2007

CR #	(OPEN) INITIATION DATE	(CLOSED) CLOSE-OUT DATE	DESCRIPTION	STATUS AS OF 07/01/07
CR 07-03	11-Jan-07	15-Dec-07	Entergy IP environmental water sample was noted by client to have Cs 137 activity that was not confirmed by independent laboratory	CLOSED - Results from subsequent C-14 PC had acceptable bias. Data compared with no deficiencies noted. Single C-14 spikes to be submitted monthly for evaluation.
CR 07-04	23-Jan-07	14-Dec-07	3 Gross beta in water samples noted by 2 clients that results were inconsistent with previous results	CLOSED - Data reviewers were retrained on trending mechanisms. Gross alpha/beta in water procedure 320 revision 24 was issued on 08/24/07 to describe the appropriate recount mechanism.
CR 07-06	21-Mar-07	28-Nov-07	Client sample processing deadlines were missed	CLOSED - A project manager was assigned to track client sample processing to ensure future deadlines are met. Daily status updates provided to the client for the remainder of the project. All actions completed. VP approved closure on 11/26/07.
CR 07-07	21-Mar-07	19-Dec-07	Environmental water sample MDC for gamma not met due to delay in preparing composite	CLOSED - Client notified. Composite sample management controls and processing are now under a single point of accountability. Mechanisms were put in place to assure timely preparation of composite samples.
CR 07-10	23-May-07	13-Dec-07	Part 61 sample drum found amongst empty drums ready for shipment back to clients.	CLOSED - 1) Package was immediately surveyed and sample receipt completed. 2) The empty drum, storage area was inspected to identify additional drums not received. None identified. 3) The sample receipt process was counseled with E-Lab personnel. See additional information below. 4) The client was contacted and advised of the potential for a delay reporting results due to the delay in receipt of samples
CR 07-11	17-Jul-07	19-Dec-07	Part 61 blank sample indicated positive for Fe + Ni	CLOSED - Positive blanks were a result of overcrowding on the hot plate. 1) Batch sizes have been reduced to reduce the potential for contamination. 2) The processing chemist has been instructed to use glass covers during evaporation. 3) The processing chemist was interviewed and instructed on good laboratory practices.
CR 07-13	30-Jul-07		A prepared Matrix Spike sample was inadvertently analyzed as a Laboratory Control Standard with a similar source identification number.	OPEN - Awaiting the results of an investigation to identify affected sample sets and to evaluate impact on data quality.
CR 07-14	2-Aug-07	13-Dec-07	Gamma spectroscopy MDC for La-140 was not met.	CLOSED - The client was notified of the cause of the failure. Data packages are being reviewed in a more timely manner, permitting sufficient time to recount or reprocess, as required.
CR 07-15	2-Aug-07	19-Dec-07	H-3 Laboratory Control Standard results were out of range low.	CLOSED - An insufficient volume of LCS media was provided resulting in a low volume of distillate. This resulted in steps being taken by the chemist that were not in accordance with the procedure. The chemist was instructed to stop processing and notify the radiochemistry lead if the procedure can not be followed precisely.
CR 07-16	25-Sep-07	13-Dec-07	Fish samples indicated positive for Sr-90 due to Sr-85 tracer contamination in Y-90 vials.	CLOSED - Samples were reprocessed with an additional step to ensure that calcium resulting from fish bones present in the field prepared samples was removed as part of the Sr-90 processing.
CR 07-17	5-Nov-07	17-Dec-07	Progress Energy Part 61 gamma results didn't meet MDC for Nb-94 and Cs-137	CLOSED - Personnel responsible for assuring required MDCs are met were retrained, including retraining on E-Lab procedure 1102. A new Part 61 Sample Information form was generated for tracking requirements.
CR07-18	6-Nov-07	19-Dec-07	1 of 3 Tritium Process Checks for 2nd Qtr 07 out of range high	CLOSED - An interview with the processing chemist indicated that poor cleaning of glassware was the probable cause of the high bias. The chemist was counseled on proper glassware cleaning techniques and the necessity to follow procedure.
CR 07-19	25-Nov-07		SNAP Project Matrix Spike and LCS analysis results identified as out of range.	OPEN - The Federal Group Project Manager was provided with the QC summary report on 12/14/07. An investigation is ongoing to identify the cause of the failures and to evaluate the impact on data quality.

TABLE 16
CONDITION REPORT (CR) STATUS
JULY - DECEMBER 2007

CR #	(OPEN) INITIATION DATE	(CLOSED) CLOSE-OUT DATE	DESCRIPTION	STATUS AS OF 12/31/06
CR 07-20	28-Nov-07		Performance and Documentation of QA Schedule Elements is untimely.	OPEN - 8 of 11 action items associated with this CR are complete. The remaining 3 items are pending.
CR 07-21	28-Nov-07		QC Summary for SCE contains incorrect data.	OPEN - The client was notified of the data inconsistencies, and an updated QC summary report was issued. An investigation into the cause of the inconsistencies and implementation of appropriate corrective actions are pending.
CR 07-22	4-Dec-07		Missing FORM M100.4	OPEN - A Client Purchase Order/Contract Review Form was missing for 1 client. Client contracts are being reviewed to determine if this is an isolated incident.
CR 07-23	5-Dec-07	19-Dec-07	Seeker gamma spec software incorrectly determined Nb-95 activity for Part 61 Progress Energy sample.	CLOSED- Updated results were provided to the client. No additional errors were identified by the review of several additional spectra. No problems were found from a review of the software library. Analysts were trained to identify similar errors when reviewing gamma spectrometry results.
CR 07-24	14-Dec-07		Low Level H-3 3rd party spike failed for one chemist by micro dist	OPEN - Analysis of additional 3rd party low-level H-3 samples have been put on the QC schedule for 2008. The cause of the initial failure is still under investigation.

TABLE 1
**PERCENTAGE OF INDIVIDUAL ANALYSES WHICH PASSED E-LAB INTERNAL CRITERIA
January-June 2007 ⁽¹⁾**

Dosimeter Type	Number of Dosimeters	Shallow (7 mg/cm ²)		Eye (300 mg/cm ²)		Deep (1000 mg/cm ²)	
		% Passed Bias Tolerance Limit ⁽²⁾	% Passed Precision Tolerance Limit ⁽³⁾	% Passed Bias Tolerance Limit ⁽²⁾	% Passed Precision Tolerance Limit ⁽³⁾	% Passed Bias Tolerance Limit ⁽²⁾	% Passed Precision Tolerance Limit ⁽³⁾
Panasonic 808 Whole Body	30	100	100	100	100	100	100
Panasonic 814 Whole Body	84	100	100	100	100	100	100
Extremity	0	-	-	N/A	N/A	N/A	N/A
Panasonic Environmental	36	100 (free in air)	100 (free in air)	N/A	N/A	N/A	N/A

⁽¹⁾ This table summarizes results of all depths for performance tests conducted by E-LAB and the Third-party tester for High Energy Photons.

**CONTROL LIMITS FOR E-LAB DOSIMETRY PERFORMANCE TESTS -
APPLICABLE TO INDIVIDUAL TEST DOSIMETERS IRRADIATED TO HIGH ENERGY PHOTONS**

Dosimeter Type	Tolerance Limits	
	Bias	Precision
Panasonic Whole Body	± 18.5%	± 16.1%
Extremity	± 32.6%	± 27.2%
Panasonic Environmental	± 20.1%	± 12.8%

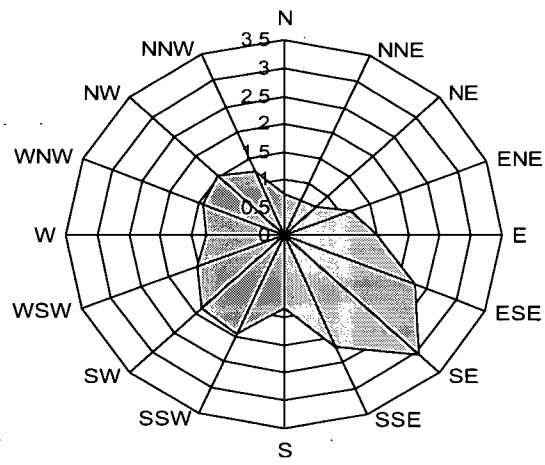
⁽²⁾ The percent deviation of individual results from the delivered dose is used to measure bias.

⁽³⁾ The percent deviation of individual results from the mean reported dose is used to measure precision.

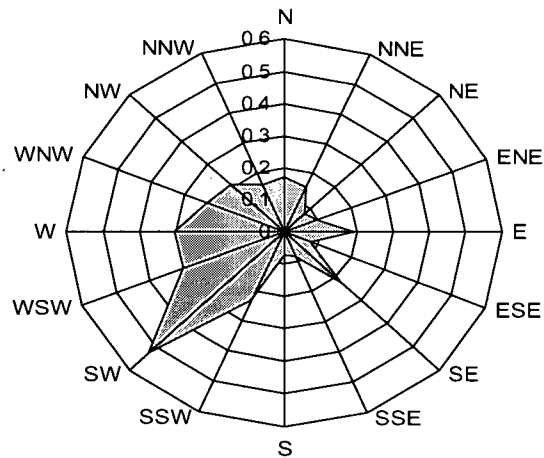
Appendix G
Meteorological Data

Wind direction frequency measured at 10 meters.

Stability Class A

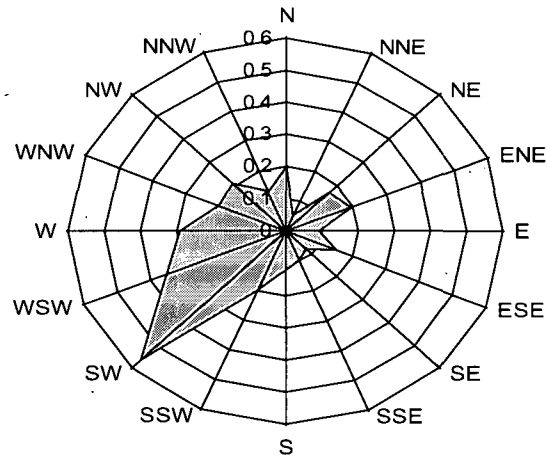


Stability Class B

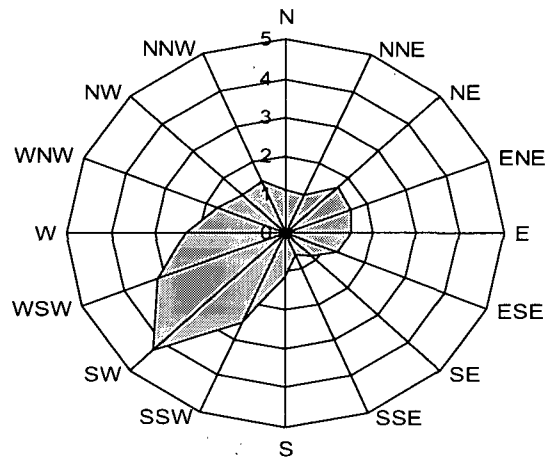


Wind direction frequency measured at 10 meters.

Stability Class C

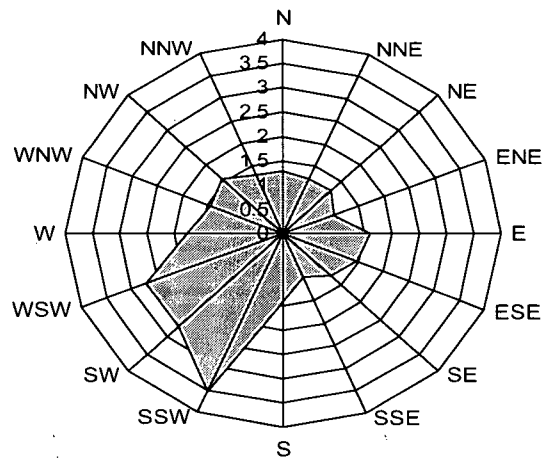


Stability Class D

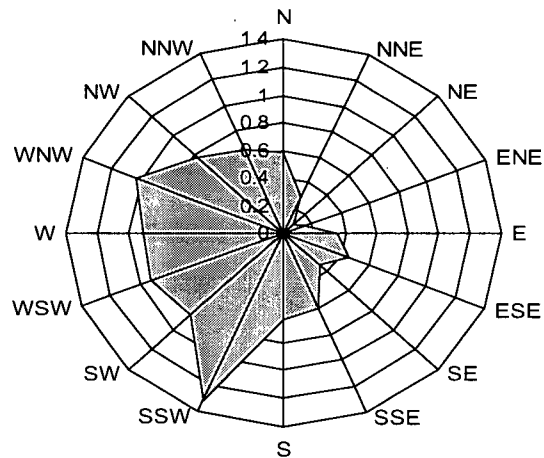


Wind direction frequency measured at 10 meters.

Stability Class E



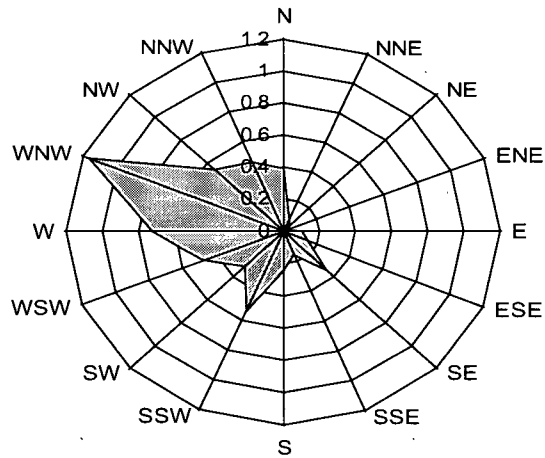
Stability Class F



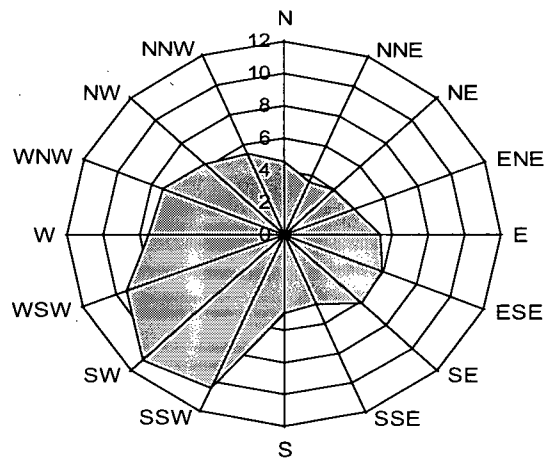
*Fermi 2 - 2007 Annual
Radioactive Effluent Release and
Radiological Environmental Operating Report*

Wind direction frequency measured at 10 meters.

Stability Class G



All Stability Classes



FERMI 2 2007

X/Q and D/Q Tables

PRINTOUT OF INPUT CARDS

1	00101	11100	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
2	Fermi 2 2007 Data																
3	9	7	1	15	5	2	0										
4	10.00	101.00	2.26	-8.00	0.00												
5	0.000	0.000	0.000	0.000	0.000	0.000	0.000										
6	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	2.000	1.000	1.000	3.000	1.000	1.000	0.000	2.000	1.000	1.000	3.000	3.000	11.000	8.000	4.000	0.000	
6	10.000	11.000	9.000	7.000	12.000	16.000	24.000	18.000	22.000	22.000	14.000	17.000	1.000	17.000	44.000	18.000	
6	20.000	19.000	20.000	28.000	25.000	72.000	85.000	63.000	44.000	57.000	31.000	39.000	31.000	33.000	39.000	34.000	
6	14.000	13.000	19.000	26.000	29.000	66.000	117.000	74.000	32.000	45.000	44.000	31.000	27.000	32.000	27.000	25.000	
6	15.000	6.000	13.000	24.000	27.000	34.000	36.000	28.000	15.000	35.000	50.000	33.000	32.000	21.000	9.000	17.000	
6	1.000	4.000	1.000	10.000	26.000	3.000	0.000	2.000	0.000	7.000	16.000	6.000	7.000	9.000	6.000	7.000	
6	3.000	4.000	0.000	3.000	8.000	3.000	0.000	0.000	0.000	1.000	2.000	1.000	0.000	2.000	1.000	4.000	
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
6	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
6	2.000	0.000	1.000	0.000	1.000	0.000	2.000	2.000	2.000	0.000	1.000	5.000	3.000	3.000	2.000	1.000	
6	2.000	2.000	1.000	2.000	0.000	3.000	2.000	2.000	1.000	3.000	5.000	6.000	9.000	4.000	8.000	8.000	
6	3.000	3.000	2.000	3.000	6.000	2.000	6.000	1.000	3.000	1.000	9.000	5.000	3.000	7.000	5.000	2.000	
6	5.000	7.000	2.000	1.000	6.000	1.000	7.000	1.000	1.000	9.000	15.000	4.000	7.000	3.000	2.000	3.000	
6	2.000	1.000	1.000	2.000	2.000	0.000	2.000	0.000	0.000	5.000	8.000	5.000	4.000	3.000	0.000	0.000	
6	1.000	0.000	0.000	1.000	1.000	0.000	0.000	0.000	0.000	2.000	6.000	1.000	0.000	0.000	1.000	0.000	
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.000	0.000	0.000	0.000	0.000	0.000	
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
6	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	1.000	0.000	
6	4.000	0.000	1.000	1.000	0.000	2.000	2.000	1.000	5.000	2.000	2.000	2.000	6.000	3.000	4.000	1.000	
6	5.000	2.000	1.000	0.000	1.000	2.000	1.000	2.000	3.000	3.000	7.000	5.000	5.000	6.000	3.000	3.000	
6	3.000	0.000	7.000	3.000	1.000	3.000	3.000	1.000	1.000	4.000	11.000	3.000	7.000	4.000	5.000	4.000	
6	3.000	1.000	4.000	9.000	1.000	4.000	0.000	2.000	1.000	6.000	8.000	15.000	2.000	1.000	4.000	1.000	
6	2.000	1.000	1.000	2.000	3.000	2.000	0.000	3.000	0.000	2.000	4.000	5.000	4.000	1.000	0.000	2.000	
6	0.000	0.000	0.000	1.000	2.000	0.000	1.000	0.000	0.000	0.000	15.000	0.000	0.000	2.000	1.000	0.000	
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	
6	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	3.000	0.000	0.000	0.000	
6	10.000	5.000	4.000	3.000	0.000	0.000	3.000	2.000	2.000	6.000	7.000	10.000	16.000	14.000	8.000	7.000	
6	16.000	26.000	16.000	6.000	3.000	8.000	7.000	10.000	13.000	17.000	30.000	55.000	39.000	28.000	32.000	39.000	
6	13.000	24.000	34.000	18.000	15.000	20.000	17.000	14.000	18.000	34.000	69.000	76.000	56.000	36.000	26.000	43.000	
6	17.000	11.000	44.000	22.000	27.000	32.000	24.000	9.000	28.000	46.000	82.000	77.000	46.000	30.000	29.000	17.000	
6	24.000	13.000	33.000	42.000	20.000	43.000	13.000	10.000	31.000	79.000	118.000	46.000	31.000	23.000	20.000	13.000	
6	8.000	7.000	14.000	31.000	28.000	5.000	5.000	5.000	4.000	29.000	39.000	6.000	6.000	14.000	3.000	8.000	
6	8.000	4.000	0.000	12.000	24.000	4.000	3.000	1.000	0.000	5.000	15.000	0.000	1.000	0.000	1.000	0.000	
6	0.000	5.000	0.000	2.000	11.000	0.000	0.000	0.000	0.000	0.000	5.000	0.000	0.000	0.000	0.000	0.000	
6	2.000	0.000	2.000	3.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.000	2.000	2.000	0.000	
6	7.000	7.000	6.000	5.000	7.000	5.000	6.000	7.000	13.000	9.000	23.000	39.000	42.000	38.000	26.000	14.000	
6	24.000	42.000	18.000	8.000	14.000	20.000	13.000	23.000	31.000	39.000	78.000	100.000	54.000	48.000	57.000	54.000	
6	30.000	40.000	43.000	19.000	30.000	46.000	33.000	28.000	41.000	71.000	57.000	72.000	35.000	29.000	31.000	28.000	
6	15.000	11.000	25.000	29.000	38.000	36.000	33.000	15.000	27.000	78.000	30.000	17.000	16.000	6.000	12.000	11.000	
6	21.000	6.000	9.000	15.000	27.000	18.000	21.000	9.000	7.000	86.000	35.000	7.000	2.000	0.000	6.000	3.000	

6	9.000	0.000	1.000	4.000	18.000	2.000	2.000	3.000	2.000	19.000	6.000	0.000	1.000	1.000	3.000	0.000
6	2.000	0.000	0.000	1.000	3.000	0.000	0.000	0.000	0.000	4.000	3.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	1.000	1.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	2.000	1.000
6	11.000	5.000	0.000	2.000	2.000	2.000	4.000	8.000	16.000	17.000	19.000	39.000	38.000	46.000	31.000	20.000
6	14.000	12.000	6.000	1.000	2.000	13.000	5.000	15.000	23.000	30.000	41.000	33.000	36.000	36.000	30.000	22.000
6	19.000	1.000	0.000	2.000	8.000	15.000	6.000	15.000	6.000	25.000	7.000	2.000	3.000	3.000	2.000	12.000
6	4.000	4.000	1.000	3.000	5.000	9.000	7.000	7.000	6.000	22.000	3.000	3.000	0.000	0.000	0.000	0.000
6	2.000	3.000	0.000	3.000	2.000	0.000	4.000	2.000	2.000	16.000	1.000	1.000	0.000	4.000	2.000	1.000
6	0.000	0.000	0.000	1.000	4.000	0.000	1.000	1.000	0.000	3.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	6.000	0.000	0.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
6	9.000	5.000	1.000	0.000	0.000	0.000	1.000	2.000	5.000	5.000	10.000	25.000	48.000	69.000	29.000	19.000
6	19.000	1.000	2.000	0.000	1.000	4.000	7.000	4.000	6.000	17.000	8.000	12.000	12.000	31.000	17.000	19.000
6	5.000	0.000	1.000	1.000	1.000	2.000	6.000	4.000	6.000	7.000	5.000	2.000	1.000	0.000	0.000	2.000
6	1.000	0.000	0.000	1.000	3.000	3.000	2.000	1.000	4.000	10.000	2.000	0.000	0.000	0.000	1.000	0.000
6	0.000	0.000	0.000	0.000	1.000	2.000	11.000	2.000	0.000	7.000	0.000	1.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	2.000	0.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	111.	0.750	2.500	4.500	6.500	8.500	11.500	14.500	18.500	23.500	0.000	0.000	0.000	0.000	0.000	0.000

VRDIST,VRCCR NOT INPUTTED.

10	918.	918.	918.	918.	918.	918.	918.	918.	918.	918.	918.	918.	918.	918.	918.	918.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

12 11 11 2 10 2

13 SITE BOUNDARY

14 11 1825.0 10 1646.0 11 579.0 1 1417.0 2 1542.0 3 1920.0 4 1798.0 5 1390.0

6 1082.0 7 915.0 8 990.0

13 Residences

14 9 1776.0 11 1773.0 10 1646.0 8 1743.0 7 1700.0 6 1103.0 5 1861.0 4 2547.0

3 2025.0 2 1826.0 1 1640.0

13 MILK COW

14 7 5874.0 6 3672.0

13 VEGETABLE GARDEN

14 9 2633.0 10 2894.0 11 3200.0 8 4107.0 7 4435.0 2 2414.0 3 7062.0 5 5123.0

6 2936.0 4 5173.0

13 Visitor Center/Ice F

14 2 470.0 13 470.0

15 Reactor Bldg

16 11.800 2.190 51.2 47.5 2300.0 51.2 0.00

17 A 0 0 0

15 Turbine Bldg

16 3.310 7.460 40.1 40.1 5130.0 40.1 0.00

17 B 0 0 0

Fermi 2 2007 Data

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

ATMOSPHERIC STABILITY CLASS A

UMAX (M/S)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
0.34	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012
1.12	0.023	0.012	0.012	0.035	0.012	0.012	0.000	0.023	0.012	0.012	0.035	0.035	0.127	0.093	0.046	0.000	0.487
2.01	0.116	0.127	0.104	0.081	0.139	0.185	0.278	0.209	0.255	0.255	0.162	0.197	0.012	0.197	0.510	0.209	3.036
2.91	0.232	0.220	0.232	0.324	0.290	0.834	0.985	0.730	0.510	0.661	0.359	0.452	0.359	0.382	0.452	0.394	7.417
3.80	0.162	0.151	0.220	0.301	0.336	0.765	1.356	0.858	0.371	0.521	0.510	0.359	0.313	0.371	0.313	0.290	7.197
5.14	0.174	0.070	0.151	0.278	0.313	0.394	0.417	0.324	0.174	0.406	0.579	0.382	0.371	0.243	0.104	0.197	4.578
6.48	0.012	0.046	0.012	0.116	0.301	0.035	0.000	0.023	0.000	0.081	0.185	0.070	0.081	0.104	0.070	0.081	1.217
8.27	0.035	0.046	0.000	0.035	0.093	0.035	0.000	0.000	0.000	0.012	0.023	0.012	0.000	0.023	0.012	0.046	0.371
10.51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	0.75	0.67	0.73	1.17	1.49	2.26	3.04	2.17	1.32	1.95	1.85	1.51	1.26	1.41	1.51	1.22	24.31

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

ATMOSPHERIC STABILITY CLASS B

UMAX (M/S)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
0.34	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.12	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.035
2.01	0.023	0.000	0.012	0.000	0.012	0.000	0.023	0.023	0.000	0.000	0.012	0.058	0.035	0.035	0.023	0.012	0.267
2.91	0.023	0.023	0.012	0.023	0.000	0.035	0.023	0.023	0.012	0.035	0.058	0.070	0.104	0.046	0.093	0.093	0.672
3.80	0.035	0.035	0.023	0.035	0.070	0.023	0.070	0.012	0.035	0.012	0.104	0.058	0.035	0.081	0.058	0.023	0.707
5.14	0.058	0.081	0.023	0.012	0.070	0.012	0.081	0.012	0.012	0.104	0.174	0.046	0.081	0.035	0.023	0.035	0.858
6.48	0.023	0.012	0.012	0.023	0.023	0.000	0.023	0.000	0.000	0.058	0.093	0.058	0.046	0.035	0.000	0.000	0.406
8.27	0.012	0.000	0.000	0.012	0.012	0.000	0.000	0.000	0.000	0.023	0.070	0.012	0.000	0.000	0.012	0.000	0.151
10.51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	0.000	0.000	0.000	0.000	0.023
TOTAL	0.17	0.15	0.08	0.10	0.19	0.08	0.22	0.08	0.07	0.23	0.53	0.30	0.30	0.23	0.21	0.16	3.12

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

ATMOSPHERIC STABILITY CLASS C

UMAX (M/S)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
0.34	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.12	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.012	0.000	0.035
2.01	0.046	0.000	0.012	0.012	0.000	0.023	0.023	0.012	0.058	0.023	0.023	0.023	0.070	0.035	0.046	0.012	0.417
2.91	0.058	0.023	0.012	0.000	0.012	0.023	0.012	0.023	0.035	0.035	0.081	0.058	0.058	0.070	0.035	0.035	0.568
3.80	0.035	0.000	0.081	0.035	0.012	0.035	0.035	0.012	0.012	0.046	0.127	0.035	0.081	0.046	0.058	0.046	0.695
5.14	0.035	0.012	0.046	0.104	0.012	0.046	0.000	0.023	0.012	0.070	0.093	0.174	0.023	0.012	0.046	0.012	0.719
6.48	0.023	0.012	0.012	0.023	0.035	0.023	0.000	0.035	0.000	0.023	0.046	0.058	0.046	0.012	0.000	0.023	0.371
8.27	0.000	0.000	0.000	0.012	0.023	0.000	0.012	0.000	0.000	0.000	0.174	0.000	0.000	0.023	0.012	0.000	0.255
10.51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.012
TOTAL	0.20	0.05	0.17	0.19	0.09	0.15	0.08	0.10	0.12	0.20	0.56	0.35	0.29	0.20	0.21	0.13	3.07

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

ATMOSPHERIC STABILITY CLASS D

UMAX (M/S)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
0.34	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.035	0.000	0.000	0.000	0.058
1.12	0.116	0.058	0.046	0.035	0.000	0.000	0.035	0.023	0.023	0.070	0.081	0.116	0.185	0.162	0.093	0.081	1.124
2.01	0.185	0.301	0.185	0.070	0.035	0.093	0.081	0.116	0.151	0.197	0.348	0.637	0.452	0.324	0.371	0.452	3.998
2.91	0.151	0.278	0.394	0.209	0.174	0.232	0.197	0.162	0.209	0.394	0.800	0.881	0.649	0.417	0.301	0.498	5.945
3.80	0.197	0.127	0.510	0.255	0.313	0.371	0.278	0.104	0.324	0.533	0.950	0.892	0.533	0.348	0.336	0.197	6.270
5.14	0.278	0.151	0.382	0.487	0.232	0.498	0.151	0.116	0.359	0.916	1.367	0.533	0.359	0.267	0.232	0.151	6.478
6.48	0.093	0.081	0.162	0.359	0.324	0.058	0.058	0.058	0.046	0.336	0.452	0.070	0.070	0.162	0.035	0.093	2.457
8.27	0.093	0.046	0.000	0.139	0.278	0.046	0.035	0.012	0.000	0.058	0.174	0.000	0.012	0.000	0.012	0.000	0.904
10.51	0.000	0.058	0.000	0.023	0.127	0.000	0.000	0.000	0.000	0.000	0.058	0.000	0.000	0.000	0.000	0.000	0.267
TOTAL	1.12	1.10	1.68	1.58	1.48	1.30	0.83	0.59	1.11	2.50	4.23	3.14	2.29	1.68	1.38	1.47	27.50

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

ATMOSPHERIC STABILITY CLASS E

UMAX (M/S)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
0.34	0.023	0.000	0.023	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.023	0.023	0.000	0.151
1.12	0.081	0.081	0.070	0.058	0.081	0.058	0.070	0.081	0.151	0.104	0.267	0.452	0.487	0.440	0.301	0.162	2.944
2.01	0.278	0.487	0.209	0.093	0.162	0.232	0.151	0.267	0.359	0.452	0.904	1.159	0.626	0.556	0.661	0.626	7.220
2.91	0.348	0.464	0.498	0.220	0.348	0.533	0.382	0.324	0.475	0.823	0.661	0.834	0.406	0.336	0.359	0.324	7.336
3.80	0.174	0.127	0.290	0.336	0.440	0.417	0.382	0.174	0.313	0.904	0.348	0.197	0.185	0.070	0.139	0.127	4.624
5.14	0.243	0.070	0.104	0.174	0.313	0.209	0.243	0.104	0.081	0.997	0.406	0.081	0.023	0.000	0.070	0.035	3.152
6.48	0.104	0.000	0.012	0.046	0.209	0.023	0.023	0.035	0.023	0.220	0.070	0.000	0.012	0.012	0.035	0.000	0.823
8.27	0.023	0.000	0.000	0.012	0.035	0.000	0.000	0.000	0.000	0.046	0.035	0.000	0.000	0.000	0.000	0.000	0.151
10.51	0.000	0.000	0.000	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023
TOTAL	1.27	1.23	1.21	1.00	1.59	1.47	1.25	0.99	1.40	3.55	2.69	2.72	1.76	1.44	1.59	1.27	26.42

JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

ATMOSPHERIC STABILITY CLASS F

UMAX (M/S)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
0.34	0.000	0.000	0.012	0.012	0.000	0.000	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.000	0.023	0.012	0.139
1.12	0.127	0.058	0.000	0.023	0.023	0.023	0.046	0.093	0.185	0.197	0.220	0.452	0.440	0.533	0.359	0.232	3.013
2.01	0.162	0.139	0.070	0.012	0.023	0.151	0.058	0.174	0.267	0.348	0.475	0.382	0.417	0.417	0.348	0.255	3.697
2.91	0.220	0.012	0.000	0.023	0.093	0.174	0.070	0.174	0.070	0.290	0.081	0.023	0.035	0.035	0.023	0.139	1.460
3.80	0.046	0.046	0.012	0.035	0.058	0.104	0.081	0.081	0.070	0.255	0.035	0.035	0.000	0.000	0.000	0.000	0.858
5.14	0.023	0.035	0.000	0.035	0.023	0.000	0.046	0.023	0.023	0.185	0.012	0.012	0.000	0.046	0.023	0.012	0.498
6.48	0.000	0.000	0.000	0.012	0.046	0.000	0.012	0.012	0.000	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.116
8.27	0.000	0.000	0.000	0.000	0.070	0.000	0.000	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.093
10.51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	0.58	0.29	0.09	0.15	0.34	0.45	0.32	0.59	0.63	1.32	0.83	0.92	0.90	1.03	0.78	0.65	9.87

Fermi 2 2007 Data

Reactor Bldg
 NO DECAY, UNDEPLETED
 CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	
S	3.113E-06	1.055E-06	6.114E-07	3.424E-07	1.668E-07	1.038E-07	7.273E-08	5.468E-08	4.313E-08	3.523E-08	2.955E-08	
SSW	1.951E-06	6.660E-07	4.077E-07	2.453E-07	1.293E-07	8.266E-08	5.831E-08	4.382E-08	3.444E-08	2.798E-08	2.333E-08	
SW	2.055E-06	7.471E-07	4.787E-07	2.880E-07	1.474E-07	9.191E-08	6.365E-08	4.717E-08	3.667E-08	2.954E-08	2.445E-08	
WSW	2.475E-06	8.549E-07	5.054E-07	2.847E-07	1.360E-07	8.237E-08	5.630E-08	4.146E-08	3.213E-08	2.585E-08	2.139E-08	
W	4.062E-06	1.361E-06	7.695E-07	4.161E-07	1.881E-07	1.099E-07	7.323E-08	5.297E-08	4.050E-08	3.224E-08	2.645E-08	
WNW	3.604E-06	1.137E-06	6.448E-07	3.605E-07	1.735E-07	1.051E-07	7.181E-08	5.286E-08	4.097E-08	3.297E-08	2.729E-08	
NW	4.241E-06	1.243E-06	6.500E-07	3.473E-07	1.640E-07	9.914E-08	6.783E-08	5.010E-08	3.898E-08	3.150E-08	2.618E-08	
NNW	2.922E-06	8.631E-07	4.626E-07	2.546E-07	1.251E-07	7.799E-08	5.468E-08	4.117E-08	3.253E-08	2.661E-08	2.235E-08	
N	2.854E-06	9.273E-07	5.435E-07	3.143E-07	1.598E-07	1.011E-07	7.143E-08	5.400E-08	4.277E-08	3.505E-08	2.947E-08	
NNE	8.338E-06	2.778E-06	1.603E-06	8.837E-07	4.113E-07	2.463E-07	1.676E-07	1.233E-07	9.567E-08	7.712E-08	6.399E-08	
NE	6.128E-06	2.176E-06	1.336E-06	7.757E-07	3.824E-07	2.353E-07	1.624E-07	1.204E-07	9.381E-08	7.579E-08	6.296E-08	
ENE	4.332E-06	1.530E-06	9.745E-07	6.022E-07	3.277E-07	2.138E-07	1.532E-07	1.166E-07	9.265E-08	7.602E-08	6.393E-08	
E	3.047E-06	1.077E-06	6.803E-07	4.233E-07	2.372E-07	1.589E-07	1.163E-07	9.002E-08	7.252E-08	6.021E-08	5.116E-08	
ESE	3.227E-06	1.058E-06	6.229E-07	3.734E-07	2.066E-07	1.392E-07	1.028E-07	8.039E-08	6.537E-08	5.474E-08	4.688E-08	
SE	3.079E-06	1.011E-06	5.946E-07	3.546E-07	1.929E-07	1.279E-07	9.321E-08	7.210E-08	5.811E-08	4.828E-08	4.106E-08	
SSE	2.730E-06	8.900E-07	5.357E-07	3.233E-07	1.745E-07	1.139E-07	8.188E-08	6.256E-08	4.991E-08	4.111E-08	3.470E-08	

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	
S	2.531E-08	1.462E-08	1.017E-08	6.370E-09	4.557E-09	3.509E-09	2.831E-09	2.360E-09	2.015E-09	1.753E-09	1.547E-09	
SSW	1.986E-08	1.115E-08	7.572E-09	4.572E-09	3.184E-09	2.402E-09	1.907E-09	1.569E-09	1.324E-09	1.141E-09	9.982E-10	
SW	2.068E-08	1.135E-08	7.601E-09	4.504E-09	3.100E-09	2.318E-09	1.826E-09	1.493E-09	1.254E-09	1.075E-09	9.370E-10	
WSW	1.810E-08	9.967E-09	6.700E-09	3.995E-09	2.762E-09	2.072E-09	1.637E-09	1.342E-09	1.129E-09	9.696E-10	8.463E-10	
W	2.224E-08	1.201E-08	7.997E-09	4.728E-09	3.257E-09	2.439E-09	1.927E-09	1.579E-09	1.329E-09	1.142E-09	9.975E-10	
WNW	2.311E-08	1.280E-08	8.660E-09	5.224E-09	3.646E-09	2.757E-09	2.195E-09	1.810E-09	1.531E-09	1.322E-09	1.159E-09	
NW	2.227E-08	1.257E-08	8.632E-09	5.322E-09	3.772E-09	2.888E-09	2.321E-09	1.930E-09	1.645E-09	1.429E-09	1.260E-09	
NNW	1.917E-08	1.112E-08	7.748E-09	4.851E-09	3.466E-09	2.665E-09	2.148E-09	1.790E-09	1.527E-09	1.328E-09	1.171E-09	
N	2.529E-08	1.468E-08	1.022E-08	6.394E-09	4.563E-09	3.505E-09	2.822E-09	2.349E-09	2.003E-09	1.739E-09	1.533E-09	
NNE	5.430E-08	3.038E-08	2.072E-08	1.264E-08	8.888E-09	6.758E-09	5.401E-09	4.468E-09	3.791E-09	3.280E-09	2.881E-09	
NE	5.346E-08	2.988E-08	2.031E-08	1.232E-08	8.629E-09	6.540E-09	5.213E-09	4.303E-09	3.644E-09	3.148E-09	2.761E-09	
ENE	5.486E-08	3.175E-08	2.205E-08	1.374E-08	9.778E-09	7.498E-09	6.030E-09	5.013E-09	4.271E-09	3.707E-09	3.266E-09	
E	4.430E-08	2.656E-08	1.891E-08	1.219E-08	8.887E-09	6.933E-09	5.651E-09	4.750E-09	4.083E-09	3.572E-09	3.169E-09	
ESE	4.088E-08	2.518E-08	1.827E-08	1.207E-08	8.939E-09	7.061E-09	5.814E-09	4.928E-09	4.268E-09	3.757E-09	3.352E-09	
SE	3.558E-08	2.138E-08	1.522E-08	9.790E-09	7.118E-09	5.544E-09	4.513E-09	3.789E-09	3.255E-09	2.846E-09	2.523E-09	
SSE	2.988E-08	1.756E-08	1.233E-08	7.804E-09	5.618E-09	4.346E-09	3.520E-09	2.944E-09	2.521E-09	2.198E-09	1.945E-09	

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS) 51.20
 DIAMETER (METERS) 2.19
 EXIT VELOCITY (METERS) 11.80

REP. WIND HEIGHT (METERS) 51.2
 BUILDING HEIGHT (METERS) 47.5
 BLDG.MIN.CRS.SEC.AREA (SQ.METERS) 2300.0
 HEAT EMISSION RATE (CAL/SEC) 0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE WIND SPEED (METERS/SEC) /
 ELEVATED LESS THAN 2.360 /
 MIXED BETWEEN 2.360 AND 11.800 /
 GROUND LEVEL ABOVE 11.800 /

AT THE MEASURED WIND HEIGHT (10.0 METERS):

VENT RELEASE MODE WIND SPEED (METERS/SEC) /
 STABLE CONDITIONS
 ELEVATED LESS THAN 1.043 /
 MIXED BETWEEN 1.043 AND 5.215 /
 GROUND LEVEL ABOVE 5.215 /

WIND SPEED (METERS/SEC)
 UNSTABLE/NEUTRAL CONDITIONS
 LESS THAN 1.569
 BETWEEN 1.569 AND 7.844
 ABOVE 7.844

Fermi 2 2007 Data

Reactor Bldg

2.260 DAY DECAY, UNDEPLETED

CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	
S	3.112E-06	1.054E-06	6.105E-07	3.417E-07	1.663E-07	1.034E-07	7.228E-08	5.426E-08	4.274E-08	3.485E-08	2.918E-08	
SSW	1.949E-06	6.652E-07	4.071E-07	2.447E-07	1.289E-07	8.232E-08	5.801E-08	4.355E-08	3.418E-08	2.774E-08	2.311E-08	
SW	2.054E-06	7.464E-07	4.780E-07	2.875E-07	1.470E-07	9.152E-08	6.329E-08	4.683E-08	3.635E-08	2.923E-08	2.416E-08	
WSW	2.474E-06	8.543E-07	5.048E-07	2.842E-07	1.357E-07	8.203E-08	5.597E-08	4.114E-08	3.183E-08	2.555E-08	2.110E-08	
W	4.061E-06	1.360E-06	7.686E-07	4.155E-07	1.876E-07	1.095E-07	7.296E-08	5.273E-08	4.028E-08	3.204E-08	2.627E-08	
WNW	3.603E-06	1.136E-06	6.439E-07	3.599E-07	1.730E-07	1.048E-07	7.151E-08	5.260E-08	4.073E-08	3.274E-08	2.709E-08	
NW	4.239E-06	1.242E-06	6.491E-07	3.467E-07	1.636E-07	9.880E-08	6.753E-08	4.983E-08	3.873E-08	3.126E-08	2.596E-08	
NNW	2.921E-06	8.622E-07	4.619E-07	2.541E-07	1.247E-07	7.768E-08	5.440E-08	4.091E-08	3.229E-08	2.638E-08	2.213E-08	
N	2.852E-06	9.263E-07	5.427E-07	3.137E-07	1.593E-07	1.007E-07	7.106E-08	5.366E-08	4.245E-08	3.474E-08	2.917E-08	
NNE	8.334E-06	2.775E-06	1.601E-06	8.822E-07	4.103E-07	2.454E-07	1.668E-07	1.227E-07	9.508E-08	7.657E-08	6.347E-08	
NE	6.125E-06	2.174E-06	1.334E-06	7.743E-07	3.814E-07	2.345E-07	1.616E-07	1.197E-07	9.317E-08	7.519E-08	6.239E-08	
ENE	4.329E-06	1.528E-06	9.728E-07	6.009E-07	3.267E-07	2.129E-07	1.523E-07	1.158E-07	9.191E-08	7.531E-08	6.326E-08	
E	3.046E-06	1.075E-06	6.791E-07	4.223E-07	2.363E-07	1.581E-07	1.155E-07	8.926E-08	7.180E-08	5.951E-08	5.048E-08	
ESE	3.225E-06	1.056E-06	6.217E-07	3.725E-07	2.058E-07	1.385E-07	1.021E-07	7.970E-08	6.470E-08	5.409E-08	4.624E-08	
SE	3.077E-06	1.010E-06	5.936E-07	3.538E-07	1.922E-07	1.272E-07	9.257E-08	7.148E-08	5.751E-08	4.770E-08	4.050E-08	
SSE	2.728E-06	8.889E-07	5.347E-07	3.225E-07	1.739E-07	1.134E-07	8.140E-08	6.211E-08	4.948E-08	4.070E-08	3.432E-08	

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	
S	2.496E-08	1.431E-08	9.877E-09	6.089E-09	4.289E-09	3.253E-09	2.587E-09	2.126E-09	1.790E-09	1.536E-09	1.337E-09	
SSW	1.965E-08	1.097E-08	7.411E-09	4.425E-09	3.048E-09	2.274E-09	1.786E-09	1.453E-09	1.213E-09	1.033E-09	8.945E-10	
SW	2.040E-08	1.110E-08	7.371E-09	4.292E-09	2.903E-09	2.133E-09	1.653E-09	1.329E-09	1.098E-09	9.269E-10	7.952E-10	
WSW	1.782E-08	9.716E-09	6.465E-09	3.776E-09	2.558E-09	1.881E-09	1.458E-09	1.172E-09	9.685E-10	8.169E-10	7.006E-10	
W	2.206E-08	1.186E-08	7.869E-09	4.614E-09	3.151E-09	2.340E-09	1.833E-09	1.490E-09	1.244E-09	1.060E-09	9.183E-10	
WNW	2.292E-08	1.264E-08	8.515E-09	5.093E-09	3.525E-09	2.644E-09	2.087E-09	1.706E-09	1.432E-09	1.226E-09	1.066E-09	
NW	2.205E-08	1.238E-08	8.453E-09	5.152E-09	3.611E-09	2.733E-09	2.172E-09	1.787E-09	1.506E-09	1.294E-09	1.129E-09	
NNW	1.895E-08	1.093E-08	7.566E-09	4.676E-09	3.298E-09	2.504E-09	1.993E-09	1.639E-09	1.381E-09	1.186E-09	1.034E-09	
N	2.500E-08	1.442E-08	9.979E-09	6.159E-09	4.338E-09	3.288E-09	2.613E-09	2.146E-09	1.806E-09	1.549E-09	1.348E-09	
NNE	5.381E-08	2.996E-08	2.033E-08	1.227E-08	8.542E-09	6.428E-09	5.085E-09	4.164E-09	3.497E-09	2.995E-09	2.605E-09	
NE	5.292E-08	2.941E-08	1.987E-08	1.191E-08	8.238E-09	6.167E-09	4.854E-09	3.957E-09	3.310E-09	2.823E-09	2.446E-09	
ENE	5.420E-08	3.116E-08	2.149E-08	1.320E-08	9.258E-09	6.995E-09	5.544E-09	4.542E-09	3.813E-09	3.263E-09	2.833E-09	
E	4.364E-08	2.593E-08	1.830E-08	1.158E-08	8.286E-09	6.346E-09	5.080E-09	4.194E-09	3.543E-09	3.046E-09	2.656E-09	
ESE	4.026E-08	2.460E-08	1.770E-08	1.151E-08	8.395E-09	6.529E-09	5.293E-09	4.418E-09	3.767E-09	3.267E-09	2.870E-09	
SE	3.504E-08	2.086E-08	1.472E-08	9.304E-09	6.648E-09	5.088E-09	4.072E-09	3.362E-09	2.840E-09	2.443E-09	2.131E-09	
SSE	2.951E-08	1.722E-08	1.201E-08	7.494E-09	5.318E-09	4.056E-09	3.239E-09	2.672E-09	2.256E-09	1.940E-09	1.693E-09	

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS) 51.20
 DIAMETER (METERS) 2.19
 EXIT VELOCITY (METERS) 11.80

REP. WIND HEIGHT (METERS) 51.2
 BUILDING HEIGHT (METERS) 47.5
 BLDG.MIN.CRS.SEC.AREA (SQ.METERS) 2300.0
 HEAT EMISSION RATE (CAL/SEC) 0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE WIND SPEED (METERS/SEC)
 ELEVATED LESS THAN 2.360
 MIXED BETWEEN 2.360 AND 11.800
 GROUND LEVEL ABOVE 11.800

/ AT THE MEASURED WIND HEIGHT (10.0 METERS):

VENT RELEASE MODE WIND SPEED (METERS/SEC)
 STABLE CONDITIONS
 ELEVATED LESS THAN 1.043
 MIXED BETWEEN 1.043 AND 5.215
 GROUND LEVEL ABOVE 5.215

WIND SPEED (METERS/SEC)
 UNSTABLE/NEUTRAL CONDITIONS
 LESS THAN 1.569
 BETWEEN 1.569 AND 7.844
 ABOVE 7.844

Fermi 2 2007 Data

Reactor Bldg
2.260 DAY DECAY, UNDEPLETED

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.896E-07	1.773E-07	7.336E-08	4.303E-08	2.930E-08	1.470E-08	6.131E-09	3.263E-09	2.130E-09	1.538E-09
SSW	3.923E-07	1.339E-07	5.871E-08	3.440E-08	2.320E-08	1.132E-08	4.477E-09	2.285E-09	1.457E-09	1.035E-09
SW	4.530E-07	1.536E-07	6.423E-08	3.663E-08	2.427E-08	1.151E-08	4.359E-09	2.147E-09	1.334E-09	9.290E-10
WSW	4.844E-07	1.448E-07	5.699E-08	3.210E-08	2.121E-08	1.007E-08	3.833E-09	1.893E-09	1.176E-09	8.188E-10
W	7.431E-07	2.036E-07	7.462E-08	4.070E-08	2.642E-08	1.235E-08	4.687E-09	2.354E-09	1.494E-09	1.062E-09
WNW	6.269E-07	1.842E-07	7.281E-08	4.108E-08	2.722E-08	1.309E-08	5.157E-09	2.656E-09	1.710E-09	1.228E-09
NW	6.464E-07	1.755E-07	6.879E-08	3.905E-08	2.608E-08	1.278E-08	5.201E-09	2.743E-09	1.790E-09	1.296E-09
NNW	4.585E-07	1.326E-07	5.521E-08	3.250E-08	2.221E-08	1.122E-08	4.706E-09	2.511E-09	1.642E-09	1.188E-09
N	5.261E-07	1.676E-07	7.200E-08	4.271E-08	2.928E-08	1.480E-08	6.198E-09	3.298E-09	2.150E-09	1.551E-09
NNE	1.542E-06	4.419E-07	1.701E-07	9.591E-08	6.377E-08	3.098E-08	1.241E-08	6.454E-09	4.173E-09	2.999E-09
NE	1.272E-06	4.034E-07	1.643E-07	9.391E-08	6.268E-08	3.040E-08	1.205E-08	6.194E-09	3.967E-09	2.828E-09
ENE	9.309E-07	3.370E-07	1.539E-07	9.241E-08	6.347E-08	3.199E-08	1.329E-08	7.018E-09	4.551E-09	3.267E-09
E	6.530E-07	2.429E-07	1.164E-07	7.211E-08	5.062E-08	2.648E-08	1.161E-08	6.357E-09	4.199E-09	3.049E-09
ESE	6.075E-07	2.129E-07	1.029E-07	6.494E-08	4.635E-08	2.502E-08	1.150E-08	6.532E-09	4.420E-09	3.268E-09
SE	5.796E-07	1.992E-07	9.337E-08	5.777E-08	4.061E-08	2.128E-08	9.327E-09	5.098E-09	3.366E-09	2.445E-09
SSE	5.191E-07	1.800E-07	8.222E-08	4.975E-08	3.443E-08	1.763E-08	7.530E-09	4.066E-09	2.675E-09	1.942E-09

Fermi 2 2007 Data

Reactor Bldg

8.000 DAY DECAY, DEPLETED

CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	
S	2.917E-06	9.696E-07	5.553E-07	3.094E-07	1.501E-07	9.314E-08	6.499E-08	4.867E-08	3.825E-08	3.113E-08	2.601E-08	
SSW	1.832E-06	6.129E-07	3.724E-07	2.244E-07	1.186E-07	7.577E-08	5.329E-08	3.990E-08	3.123E-08	2.528E-08	2.100E-08	
SW	1.930E-06	6.895E-07	4.401E-07	2.650E-07	1.354E-07	8.406E-08	5.791E-08	4.269E-08	3.301E-08	2.645E-08	2.179E-08	
WSW	2.328E-06	7.885E-07	4.616E-07	2.589E-07	1.230E-07	7.402E-08	5.029E-08	3.683E-08	2.839E-08	2.272E-08	1.870E-08	
W	3.808E-06	1.249E-06	6.961E-07	3.733E-07	1.668E-07	9.647E-08	6.374E-08	4.572E-08	3.469E-08	2.742E-08	2.235E-08	
WNW	3.403E-06	1.050E-06	5.886E-07	3.274E-07	1.565E-07	9.424E-08	6.395E-08	4.679E-08	3.605E-08	2.885E-08	2.376E-08	
NW	4.015E-06	1.150E-06	5.916E-07	3.136E-07	1.468E-07	8.797E-08	5.972E-08	4.379E-08	3.384E-08	2.718E-08	2.246E-08	
NNW	2.768E-06	7.994E-07	4.216E-07	2.306E-07	1.128E-07	7.005E-08	4.892E-08	3.669E-08	2.888E-08	2.354E-08	1.970E-08	
N	2.690E-06	8.561E-07	4.967E-07	2.866E-07	1.455E-07	9.187E-08	6.471E-08	4.878E-08	3.853E-08	3.148E-08	2.639E-08	
NNE	7.804E-06	2.545E-06	1.450E-06	7.937E-07	3.661E-07	2.175E-07	1.470E-07	1.075E-07	8.291E-08	6.648E-08	5.488E-08	
NE	5.744E-06	2.003E-06	1.222E-06	7.083E-07	3.481E-07	2.132E-07	1.464E-07	1.080E-07	8.379E-08	6.741E-08	5.576E-08	
ENE	4.069E-06	1.412E-06	8.963E-07	5.556E-07	3.033E-07	1.978E-07	1.414E-07	1.073E-07	8.501E-08	6.955E-08	5.833E-08	
E	2.867E-06	9.971E-07	6.277E-07	3.918E-07	2.205E-07	1.478E-07	1.080E-07	8.346E-08	6.710E-08	5.558E-08	4.713E-08	
ESE	3.039E-06	9.782E-07	5.715E-07	3.431E-07	1.907E-07	1.287E-07	9.504E-08	7.422E-08	6.027E-08	5.039E-08	4.309E-08	
SE	2.911E-06	9.379E-07	5.462E-07	3.260E-07	1.779E-07	1.180E-07	8.599E-08	6.641E-08	5.343E-08	4.431E-08	3.761E-08	
SSE	2.570E-06	8.214E-07	4.911E-07	2.970E-07	1.607E-07	1.048E-07	7.513E-08	5.723E-08	4.551E-08	3.737E-08	3.145E-08	

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	
S	2.220E-08	1.265E-08	8.693E-09	5.334E-09	3.752E-09	2.847E-09	2.267E-09	1.867E-09	1.570E-09	1.347E-09	1.172E-09	
SSW	1.781E-08	9.847E-09	6.601E-09	3.901E-09	2.671E-09	1.986E-09	1.556E-09	1.264E-09	1.051E-09	8.937E-10	7.706E-10	
SW	1.835E-08	9.877E-09	6.503E-09	3.749E-09	2.521E-09	1.847E-09	1.429E-09	1.148E-09	9.458E-10	7.968E-10	6.817E-10	
WSW	1.575E-08	8.503E-09	5.614E-09	3.247E-09	2.187E-09	1.603E-09	1.241E-09	9.951E-10	8.192E-10	6.891E-10	5.889E-10	
W	1.866E-08	9.826E-09	6.398E-09	3.648E-09	2.439E-09	1.781E-09	1.375E-09	1.103E-09	9.071E-10	7.630E-10	6.523E-10	
WNW	2.002E-08	1.087E-08	7.224E-09	4.233E-09	2.886E-09	2.139E-09	1.672E-09	1.353E-09	1.123E-09	9.511E-10	8.183E-10	
NW	1.899E-08	1.048E-08	7.052E-09	4.204E-09	2.899E-09	2.167E-09	1.706E-09	1.387E-09	1.155E-09	9.821E-10	8.473E-10	
NNW	1.684E-08	9.638E-09	6.627E-09	4.057E-09	2.844E-09	2.150E-09	1.707E-09	1.399E-09	1.172E-09	1.002E-09	8.682E-10	
N	2.259E-08	1.297E-08	8.945E-09	5.500E-09	3.869E-09	2.934E-09	2.335E-09	1.921E-09	1.613E-09	1.382E-09	1.201E-09	
NNE	4.635E-08	2.546E-08	1.709E-08	1.016E-08	6.999E-09	5.230E-09	4.115E-09	3.355E-09	2.798E-09	2.384E-09	2.061E-09	
NE	4.717E-08	2.596E-08	1.742E-08	1.034E-08	7.122E-09	5.320E-09	4.186E-09	3.412E-09	2.846E-09	2.425E-09	2.096E-09	
ENE	4.992E-08	2.858E-08	1.966E-08	1.206E-08	8.477E-09	6.428E-09	5.118E-09	4.213E-09	3.542E-09	3.038E-09	2.641E-09	
E	4.073E-08	2.421E-08	1.710E-08	1.088E-08	7.840E-09	6.054E-09	4.888E-09	4.070E-09	3.454E-09	2.987E-09	2.615E-09	
ESE	3.753E-08	2.298E-08	1.657E-08	1.085E-08	7.968E-09	6.247E-09	5.108E-09	4.299E-09	3.680E-09	3.206E-09	2.827E-09	
SE	3.253E-08	1.939E-08	1.370E-08	8.694E-09	6.248E-09	4.815E-09	3.881E-09	3.227E-09	2.734E-09	2.361E-09	2.065E-09	
SSE	2.701E-08	1.569E-08	1.091E-08	6.800E-09	4.834E-09	3.698E-09	2.966E-09	2.457E-09	2.076E-09	1.789E-09	1.562E-09	

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS) 51.20
DIAMETER (METERS) 2.19
EXIT VELOCITY (METERS) 11.80

REP. WIND HEIGHT (METERS) 51.2
BUILDING HEIGHT (METERS) 47.5
BLDG.MIN.CRS.SEC.AREA (SQ.METERS) 2300.0
HEAT EMISSION RATE (CAL/SEC) 0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE WIND SPEED (METERS/SEC) /
ELEVATED LESS THAN 2.360 /
MIXED BETWEEN 2.360 AND 11.800 /
GROUND LEVEL ABOVE 11.800 /

AT THE MEASURED WIND HEIGHT (10.0 METERS):

VENT RELEASE MODE WIND SPEED (METERS/SEC) /
ELEVATED LESS THAN 1.043 /
MIXED BETWEEN 1.043 AND 5.215 /
GROUND LEVEL ABOVE 5.215 /

WIND SPEED (METERS/SEC)
UNSTABLE/NEUTRAL CONDITIONS
LESS THAN 1.569
BETWEEN 1.569 AND 7.844
ABOVE 7.844

Fermi 2 2007 Data

Reactor Bldg

8.000 DAY DECAY, DEPLETED

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.381E-07	1.602E-07	6.597E-08	3.851E-08	2.612E-08	1.301E-08	5.377E-09	2.856E-09	1.868E-09	1.348E-09
SSW	3.601E-07	1.231E-07	5.393E-08	3.144E-08	2.109E-08	1.017E-08	3.955E-09	1.997E-09	1.267E-09	8.948E-10
SW	4.177E-07	1.414E-07	5.879E-08	3.328E-08	2.190E-08	1.026E-08	3.815E-09	1.860E-09	1.151E-09	7.983E-10
WSW	4.441E-07	1.314E-07	5.124E-08	2.864E-08	1.880E-08	8.829E-09	3.302E-09	1.614E-09	9.982E-10	6.905E-10
W	6.754E-07	1.814E-07	6.526E-08	3.507E-08	2.248E-08	1.027E-08	3.722E-09	1.794E-09	1.106E-09	7.647E-10
WNW	5.751E-07	1.668E-07	6.516E-08	3.638E-08	2.388E-08	1.128E-08	4.299E-09	2.151E-09	1.357E-09	9.527E-10
NW	5.921E-07	1.577E-07	6.088E-08	3.415E-08	2.257E-08	1.085E-08	4.257E-09	2.178E-09	1.390E-09	9.834E-10
NNW	4.207E-07	1.200E-07	4.966E-08	2.908E-08	1.978E-08	9.901E-09	4.089E-09	2.158E-09	1.401E-09	1.003E-09
N	4.832E-07	1.530E-07	6.558E-08	3.877E-08	2.649E-08	1.332E-08	5.540E-09	2.944E-09	1.922E-09	1.383E-09
NNE	1.402E-06	3.951E-07	1.500E-07	8.367E-08	5.516E-08	2.638E-08	1.030E-08	5.256E-09	3.360E-09	2.387E-09
NE	1.167E-06	3.682E-07	1.489E-07	8.448E-08	5.603E-08	2.688E-08	1.048E-08	5.347E-09	3.418E-09	2.428E-09
ENE	8.595E-07	3.125E-07	1.428E-07	8.549E-08	5.854E-08	2.936E-08	1.216E-08	6.451E-09	4.216E-09	3.040E-09
E	6.050E-07	2.262E-07	1.088E-07	6.738E-08	4.726E-08	2.472E-08	1.091E-08	6.064E-09	4.069E-09	2.987E-09
ESE	5.604E-07	1.970E-07	9.569E-08	6.049E-08	4.319E-08	2.337E-08	1.084E-08	6.251E-09	4.294E-09	3.206E-09
SE	5.354E-07	1.842E-07	8.671E-08	5.366E-08	3.771E-08	1.978E-08	8.719E-09	4.823E-09	3.226E-09	2.362E-09
SSE	4.782E-07	1.661E-07	7.588E-08	4.576E-08	3.156E-08	1.608E-08	6.840E-09	3.708E-09	2.457E-09	1.790E-09

Fermi 2 2007 Data

Reactor Bldg

CORRECTED USING STANDARD OPEN TERRAIN FACTORS

***** RELATIVE DEPOSITION PER UNIT AREA (M**⁻²) AT FIXED POINTS BY DOWNWIND SECTORS *****

DIRECTION FROM SITE	DISTANCES IN MILES										
	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	3.178E-08	1.339E-08	7.481E-09	3.786E-09	1.459E-09	7.559E-10	4.588E-10	3.076E-10	2.204E-10	1.658E-10	1.293E-10
SSW	2.210E-08	9.601E-09	5.470E-09	2.820E-09	1.110E-09	5.819E-10	3.560E-10	2.399E-10	1.726E-10	1.301E-10	1.015E-10
SW	2.506E-08	1.170E-08	6.988E-09	3.685E-09	1.479E-09	7.757E-10	4.731E-10	3.182E-10	2.285E-10	1.721E-10	1.344E-10
WSW	3.923E-08	1.685E-08	9.447E-09	4.777E-09	1.843E-09	9.493E-10	5.728E-10	3.824E-10	2.733E-10	2.052E-10	1.598E-10
W	5.909E-08	2.362E-08	1.279E-08	6.303E-09	2.363E-09	1.201E-09	7.189E-10	4.771E-10	3.395E-10	2.540E-10	1.974E-10
WNW	4.814E-08	2.165E-08	1.191E-08	5.935E-09	2.258E-09	1.160E-09	7.001E-10	4.677E-10	3.347E-10	2.516E-10	1.964E-10
NW	5.748E-08	2.578E-08	1.378E-08	6.732E-09	2.509E-09	1.282E-09	7.721E-10	5.153E-10	3.687E-10	2.773E-10	2.165E-10
NNW	3.905E-08	1.765E-08	9.465E-09	4.632E-09	1.728E-09	8.850E-10	5.340E-10	3.570E-10	2.557E-10	1.924E-10	1.503E-10
N	2.945E-08	1.364E-08	7.764E-09	3.951E-09	1.525E-09	7.898E-10	4.791E-10	3.212E-10	2.304E-10	1.735E-10	1.356E-10
NNE	8.386E-08	3.453E-08	1.916E-08	9.627E-09	3.684E-09	1.891E-09	1.139E-09	7.591E-10	5.418E-10	4.062E-10	3.161E-10
NE	8.177E-08	3.572E-08	2.061E-08	1.064E-08	4.195E-09	2.178E-09	1.321E-09	8.842E-10	6.331E-10	4.758E-10	3.708E-10
ENE	4.668E-08	2.204E-08	1.311E-08	6.927E-09	2.793E-09	1.474E-09	9.043E-10	6.105E-10	4.397E-10	3.318E-10	2.594E-10
E	3.575E-08	1.701E-08	1.001E-08	5.261E-09	2.113E-09	1.117E-09	6.866E-10	4.642E-10	3.348E-10	2.528E-10	1.977E-10
ESE	3.370E-08	1.577E-08	9.097E-09	4.701E-09	1.848E-09	9.691E-10	5.928E-10	3.997E-10	2.877E-10	2.171E-10	1.698E-10
SE	3.197E-08	1.526E-08	8.828E-09	4.541E-09	1.759E-09	9.200E-10	5.622E-10	3.790E-10	2.730E-10	2.062E-10	1.614E-10
SSE	2.831E-08	1.314E-08	7.558E-09	3.920E-09	1.553E-09	8.186E-10	5.026E-10	3.397E-10	2.449E-10	1.850E-10	1.447E-10

DIRECTION FROM SITE	DISTANCES IN MILES										
	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	1.037E-10	4.727E-11	2.863E-11	1.490E-11	9.420E-12	6.705E-12	5.133E-12	4.122E-12	3.436E-12	2.924E-12	2.546E-12
SSW	8.150E-11	3.723E-11	2.251E-11	1.169E-11	7.395E-12	5.260E-12	4.026E-12	3.234E-12	2.698E-12	2.297E-12	2.001E-12
SW	1.079E-10	4.904E-11	2.935E-11	1.506E-11	9.472E-12	6.689E-12	5.071E-12	4.026E-12	3.316E-12	2.789E-12	2.397E-12
WSW	1.282E-10	5.813E-11	3.503E-11	1.814E-11	1.145E-11	8.075E-12	6.103E-12	4.815E-12	3.939E-12	3.287E-12	2.795E-12
W	1.580E-10	7.147E-11	4.326E-11	2.243E-11	1.410E-11	9.919E-12	7.479E-12	5.896E-12	4.821E-12	4.025E-12	3.429E-12
WNW	1.577E-10	7.206E-11	4.378E-11	2.312E-11	1.484E-11	1.067E-11	8.213E-12	6.588E-12	5.477E-12	4.632E-12	3.989E-12
NW	1.741E-10	7.995E-11	4.899E-11	2.628E-11	1.704E-11	1.235E-11	9.559E-12	7.678E-12	6.383E-12	5.389E-12	4.621E-12
NNW	1.209E-10	5.564E-11	3.414E-11	1.834E-11	1.191E-11	8.666E-12	6.738E-12	5.443E-12	4.553E-12	3.866E-12	3.339E-12
N	1.090E-10	4.993E-11	3.027E-11	1.589E-11	1.017E-11	7.345E-12	5.694E-12	4.616E-12	3.879E-12	3.319E-12	2.901E-12
NNE	2.532E-10	1.147E-10	6.916E-11	3.571E-11	2.246E-11	1.585E-11	1.205E-11	9.612E-12	7.968E-12	6.747E-12	5.848E-12
NE	2.973E-10	1.347E-10	8.070E-11	4.139E-11	2.599E-11	1.827E-11	1.382E-11	1.095E-11	9.013E-12	7.579E-12	6.514E-12
ENE	2.084E-10	9.509E-11	5.712E-11	2.950E-11	1.866E-11	1.329E-11	1.020E-11	8.223E-12	6.886E-12	5.884E-12	5.147E-12
E	1.589E-10	7.275E-11	4.386E-11	2.280E-11	1.450E-11	1.039E-11	8.016E-12	6.493E-12	5.464E-12	4.687E-12	4.115E-12
ESE	1.365E-10	6.264E-11	3.794E-11	1.988E-11	1.271E-11	9.186E-12	7.160E-12	5.858E-12	4.977E-12	4.305E-12	3.813E-12
SE	1.299E-10	5.997E-11	3.650E-11	1.928E-11	1.236E-11	9.003E-12	7.019E-12	5.717E-12	4.821E-12	4.138E-12	3.630E-12
SSE	1.163E-10	5.336E-11	3.232E-11	1.692E-11	1.080E-11	7.755E-12	5.993E-12	4.852E-12	4.077E-12	3.491E-12	3.056E-12

Fermi 2 2007 Data

Reactor Bldg

***** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS *****

SEGMENT BOUNDARIES IN MILES

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	7.153E-09	1.664E-09	4.776E-10	2.245E-10	1.306E-10	5.152E-11	1.551E-11	6.800E-12	4.150E-12	2.936E-12
SSW	5.210E-09	1.255E-09	3.698E-10	1.756E-10	1.026E-10	4.053E-11	1.219E-11	5.336E-12	3.256E-12	2.306E-12
SW	6.568E-09	1.657E-09	4.918E-10	2.327E-10	1.358E-10	5.337E-11	1.575E-11	6.784E-12	4.054E-12	2.800E-12
WSW	9.016E-09	2.098E-09	5.971E-10	2.785E-10	1.615E-10	6.343E-11	1.892E-11	8.186E-12	4.849E-12	3.298E-12
W	1.231E-08	2.722E-09	7.507E-10	3.463E-10	1.996E-10	7.817E-11	2.336E-11	1.006E-11	5.939E-12	4.040E-12
WNW	1.142E-08	2.587E-09	7.299E-10	3.410E-10	1.984E-10	7.853E-11	2.403E-11	1.080E-11	6.629E-12	4.645E-12
NW	1.332E-08	2.902E-09	8.053E-10	3.758E-10	2.188E-10	8.711E-11	2.722E-11	1.249E-11	7.722E-12	5.399E-12
NNW	9.136E-09	1.999E-09	5.568E-10	2.605E-10	1.519E-10	6.059E-11	1.899E-11	8.760E-12	5.474E-12	3.874E-12
N	7.374E-09	1.737E-09	4.988E-10	2.347E-10	1.370E-10	5.432E-11	1.654E-11	7.437E-12	4.643E-12	3.330E-12
NNE	1.834E-08	4.208E-09	1.188E-09	5.522E-10	3.195E-10	1.252E-10	3.725E-11	1.609E-11	9.682E-12	6.776E-12
NE	1.954E-08	4.732E-09	1.375E-09	6.449E-10	3.747E-10	1.468E-10	4.328E-11	1.855E-11	1.103E-11	7.609E-12
ENE	1.234E-08	3.125E-09	9.388E-10	4.474E-10	2.619E-10	1.034E-10	3.082E-11	1.349E-11	8.279E-12	5.908E-12
E	9.453E-09	2.370E-09	7.125E-10	3.405E-10	1.997E-10	7.906E-11	2.379E-11	1.054E-11	6.536E-12	4.705E-12
ESE	8.626E-09	2.091E-09	6.159E-10	2.928E-10	1.715E-10	6.808E-11	2.070E-11	9.314E-12	5.894E-12	4.322E-12
SE	8.351E-09	2.004E-09	5.843E-10	2.778E-10	1.630E-10	6.508E-11	2.003E-11	9.105E-12	5.748E-12	4.152E-12
SSE	7.181E-09	1.753E-09	5.217E-10	2.492E-10	1.461E-10	5.799E-11	1.762E-11	7.861E-12	4.883E-12	3.504E-12

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS)	51.20	REP. WIND HEIGHT (METERS)	51.2
DIAMETER (METERS)	2.19	BUILDING HEIGHT (METERS)	47.5
EXIT VELOCITY (METERS)	11.80	BLDG. MIN. CRS. SEC. AREA (SQ. METERS)	2300.0
		HEAT EMISSION RATE (CAL/SEC)	0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE	WIND SPEED (METERS/SEC)
ELEVATED	LESS THAN 2.360
MIXED	BETWEEN 2.360 AND 11.800
GROUND LEVEL	ABOVE 11.800

/ AT THE MEASURED WIND HEIGHT (10.0 METERS):

VENT RELEASE MODE	WIND SPEED (METERS/SEC)	WIND SPEED (METERS/SEC)
ELEVATED	LESS THAN 1.043	UNSTABLE/NEUTRAL CONDITIONS
MIXED	BETWEEN 1.043 AND 5.215	LESS THAN 1.569
GROUND LEVEL	ABOVE 5.215	BETWEEN 1.569 AND 7.844
		ABOVE 7.844

Fermi 2 2007 Data

Reactor Bldg

CORRECTED USING STANDARD OPEN TERRAIN FACTORS
SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DISTANCE (MILES)	DISTANCE (METERS)	X/Q			D/Q (PER SQ.METER)	
					(SEC/CUB.METER) NO DECAY	(SEC/CUB.METER) 2.260 DAY DECAY	(SEC/CUB.METER) 8.000 DAY DECAY		
					UNDEPLETED	UNDEPLETED	DEPLETED		
A	SITE BOUNDARY	NE	1.13	1825.	6.2E-07	6.2E-07	5.6E-07	8.0E-09	
A	SITE BOUNDARY	NNE	1.02	1646.	8.4E-07	8.4E-07	7.6E-07	9.1E-09	
A	SITE BOUNDARY	NE	0.36	579.	3.4E-06	3.4E-06	3.2E-06	5.4E-08	
A	SITE BOUNDARY	S	0.88	1417.	4.4E-07	4.4E-07	4.0E-07	5.1E-09	
A	SITE BOUNDARY	SSW	0.96	1542.	2.6E-07	2.6E-07	2.4E-07	3.1E-09	
A	SITE BOUNDARY	SW	1.19	1920.	2.1E-07	2.1E-07	2.0E-07	2.5E-09	
A	SITE BOUNDARY	WSW	1.12	1798.	2.3E-07	2.3E-07	2.1E-07	3.7E-09	
A	SITE BOUNDARY	W	0.86	1390.	5.6E-07	5.6E-07	5.1E-07	9.0E-09	
A	SITE BOUNDARY	WNW	0.67	1082.	7.3E-07	7.3E-07	6.7E-07	1.4E-08	
A	SITE BOUNDARY	NW	0.57	915.	9.8E-07	9.8E-07	9.0E-07	2.1E-08	
A	SITE BOUNDARY	NNW	0.62	990.	6.0E-07	6.0E-07	5.5E-07	1.3E-08	
A	Residences	N	1.10	1776.	2.6E-07	2.6E-07	2.4E-07	3.1E-09	
A	Residences	NE	1.10	1773.	6.5E-07	6.5E-07	5.9E-07	8.5E-09	
A	Residences	NNE	1.02	1646.	8.4E-07	8.4E-07	7.6E-07	9.1E-09	
A	Residences	NNW	1.08	1743.	2.2E-07	2.2E-07	2.0E-07	3.8E-09	
A	Residences	NW	1.06	1700.	3.1E-07	3.1E-07	2.8E-07	5.9E-09	
A	Residences	WNW	0.69	1103.	7.1E-07	7.1E-07	6.5E-07	1.4E-08	
A	Residences	W	1.16	1861.	3.1E-07	3.1E-07	2.8E-07	4.4E-09	
A	Residences	WSW	1.58	2547.	1.2E-07	1.2E-07	1.1E-07	1.6E-09	
A	Residences	SW	1.26	2025.	2.0E-07	2.0E-07	1.8E-07	2.2E-09	
A	Residences	SSW	1.13	1826.	2.0E-07	2.0E-07	1.8E-07	2.1E-09	
A	Residences	S	1.02	1640.	3.3E-07	3.3E-07	3.0E-07	3.6E-09	
A	MILK COW	NW	3.65	5874.	3.6E-08	3.6E-08	3.2E-08	3.4E-10	
A	MILK COW	WNW	2.28	3672.	8.4E-08	8.3E-08	7.5E-08	8.6E-10	
A	VEGETABLE GARDEN	N	1.64	2633.	1.4E-07	1.4E-07	1.3E-07	1.2E-09	
A	VEGETABLE GARDEN	NNE	1.80	2894.	3.0E-07	3.0E-07	2.6E-07	2.4E-09	
A	VEGETABLE GARDEN	NE	1.99	3200.	2.4E-07	2.4E-07	2.2E-07	2.2E-09	
A	VEGETABLE GARDEN	NNW	2.55	4107.	5.3E-08	5.3E-08	4.7E-08	5.1E-10	
A	VEGETABLE GARDEN	NW	2.76	4435.	5.7E-08	5.7E-08	5.0E-08	6.2E-10	
A	VEGETABLE GARDEN	SSW	1.50	2414.	1.3E-07	1.3E-07	1.2E-07	1.1E-09	
A	VEGETABLE GARDEN	SW	4.39	7062.	2.5E-08	2.5E-08	2.3E-08	1.4E-10	
A	VEGETABLE GARDEN	W	3.18	5123.	4.8E-08	4.7E-08	4.1E-08	4.2E-10	
A	VEGETABLE GARDEN	WNW	1.82	2936.	1.2E-07	1.2E-07	1.1E-07	1.4E-09	
A	VEGETABLE GARDEN	WSW	3.21	5173.	3.7E-08	3.7E-08	3.3E-08	3.3E-10	
A	Visitor Center/Ice F	SSW	0.29	470.	1.5E-06	1.5E-06	1.4E-06	1.9E-08	

A Visitor Center/Ice F E 0.29 470. 2.3E-06 2.3E-06 2.2E-06 3.1E-08

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS)	51.20	REP. WIND HEIGHT (METERS)	51.2
DIAMETER (METERS)	2.19	BUILDING HEIGHT (METERS)	47.5
EXIT VELOCITY (METERS)	11.80	BLDG.MIN.CRS.SEC.AREA (SQ.METERS)	2300.0
		HEAT EMISSION RATE (CAL/SEC)	0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE	WIND SPEED (METERS/SEC)
ELEVATED	LESS THAN 2.360
MIXED	BETWEEN 2.360 AND 11.800
GROUND LEVEL	ABOVE 11.800

/ AT THE MEASURED WIND HEIGHT (10.0 METERS):

VENT RELEASE MODE	WIND SPEED (METERS/SEC)
ELEVATED	LESS THAN 1.043
MIXED	BETWEEN 1.043 AND 5.215
GROUND LEVEL	ABOVE 5.215

WIND SPEED (METERS/SEC)
UNSTABLE/NEUTRAL CONDITIONS
LESS THAN 1.569
BETWEEN 1.569 AND 7.844
ABOVE 7.844

Fermi 2 2007 Data

Turbine Bldg

NO DECAY, UNDEPLETED

CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	
S	1.686E-05	5.501E-06	2.940E-06	1.508E-06	6.267E-07	3.493E-07	2.266E-07	1.612E-07	1.219E-07	9.633E-08	7.865E-08	
SSW	1.148E-05	4.032E-06	2.217E-06	1.130E-06	4.592E-07	2.512E-07	1.605E-07	1.127E-07	8.429E-08	6.597E-08	5.341E-08	
SW	1.120E-05	3.955E-06	2.133E-06	1.075E-06	4.312E-07	2.342E-07	1.489E-07	1.042E-07	7.769E-08	6.065E-08	4.899E-08	
WSW	8.754E-06	2.989E-06	1.592E-06	7.980E-07	3.211E-07	1.755E-07	1.123E-07	7.900E-08	5.921E-08	4.641E-08	3.763E-08	
W	1.195E-05	4.087E-06	2.191E-06	1.099E-06	4.380E-07	2.364E-07	1.496E-07	1.043E-07	7.757E-08	6.045E-08	4.877E-08	
WNW	1.568E-05	5.137E-06	2.748E-06	1.384E-06	5.562E-07	3.018E-07	1.916E-07	1.340E-07	9.995E-08	7.806E-08	6.310E-08	
NW	1.438E-05	4.455E-06	2.304E-06	1.160E-06	4.747E-07	2.615E-07	1.682E-07	1.189E-07	8.949E-08	7.045E-08	5.736E-08	
NNW	1.289E-05	4.065E-06	2.180E-06	1.109E-06	4.561E-07	2.521E-07	1.626E-07	1.152E-07	8.684E-08	6.846E-08	5.579E-08	
N	1.667E-05	5.525E-06	2.990E-06	1.527E-06	6.269E-07	3.464E-07	2.233E-07	1.581E-07	1.192E-07	9.393E-08	7.653E-08	
NNE	3.397E-05	1.136E-05	6.132E-06	3.115E-06	1.264E-06	6.915E-07	4.424E-07	3.113E-07	2.334E-07	1.832E-07	1.487E-07	
NE	3.303E-05	1.128E-05	6.102E-06	3.088E-06	1.244E-06	6.778E-07	4.321E-07	3.031E-07	2.267E-07	1.774E-07	1.437E-07	
ENE	3.260E-05	1.120E-05	6.093E-06	3.118E-06	1.282E-06	7.097E-07	4.580E-07	3.244E-07	2.446E-07	1.928E-07	1.571E-07	
E	2.641E-05	8.753E-06	4.730E-06	2.443E-06	1.027E-06	5.785E-07	3.786E-07	2.713E-07	2.065E-07	1.641E-07	1.347E-07	
ESE	2.876E-05	9.163E-06	4.857E-06	2.516E-06	1.071E-06	6.085E-07	4.010E-07	2.891E-07	2.213E-07	1.767E-07	1.457E-07	
SE	2.227E-05	7.291E-06	3.921E-06	2.021E-06	8.497E-07	4.784E-07	3.131E-07	2.244E-07	1.708E-07	1.358E-07	1.115E-07	
SSE	2.043E-05	6.708E-06	3.605E-06	1.853E-06	7.706E-07	4.294E-07	2.785E-07	1.982E-07	1.499E-07	1.186E-07	9.687E-08	

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	
S	6.587E-08	3.536E-08	2.359E-08	1.407E-08	9.774E-09	7.378E-09	5.868E-09	4.837E-09	4.094E-09	3.534E-09	3.100E-09	
SSW	4.440E-08	2.316E-08	1.514E-08	8.774E-09	5.975E-09	4.442E-09	3.490E-09	2.848E-09	2.390E-09	2.048E-09	1.784E-09	
SW	4.064E-08	2.101E-08	1.364E-08	7.829E-09	5.296E-09	3.916E-09	3.063E-09	2.490E-09	2.082E-09	1.779E-09	1.546E-09	
WSW	3.131E-08	1.637E-08	1.071E-08	6.202E-09	4.220E-09	3.133E-09	2.458E-09	2.003E-09	1.679E-09	1.437E-09	1.250E-09	
W	4.042E-08	2.088E-08	1.358E-08	7.822E-09	5.310E-09	3.940E-09	3.091E-09	2.520E-09	2.113E-09	1.809E-09	1.576E-09	
WNW	5.239E-08	2.725E-08	1.781E-08	1.034E-08	7.057E-09	5.260E-09	4.143E-09	3.389E-09	2.849E-09	2.446E-09	2.135E-09	
NW	4.793E-08	2.554E-08	1.697E-08	1.008E-08	6.986E-09	5.267E-09	4.186E-09	3.450E-09	2.920E-09	2.522E-09	2.212E-09	
NNW	4.666E-08	2.492E-08	1.657E-08	9.838E-09	6.816E-09	5.134E-09	4.077E-09	3.357E-09	2.838E-09	2.449E-09	2.146E-09	
N	6.398E-08	3.411E-08	2.265E-08	1.341E-08	9.276E-09	6.976E-09	5.532E-09	4.549E-09	3.842E-09	3.311E-09	2.899E-09	
NNE	1.239E-07	6.527E-08	4.301E-08	2.523E-08	1.734E-08	1.298E-08	1.026E-08	8.415E-09	7.091E-09	6.099E-09	5.332E-09	
NE	1.195E-07	6.253E-08	4.101E-08	2.390E-08	1.636E-08	1.221E-08	9.627E-09	7.879E-09	6.628E-09	5.692E-09	4.969E-09	
ENE	1.313E-07	6.999E-08	4.648E-08	2.753E-08	1.904E-08	1.432E-08	1.136E-08	9.338E-09	7.885E-09	6.795E-09	5.949E-09	
E	1.134E-07	6.201E-08	4.193E-08	2.547E-08	1.791E-08	1.364E-08	1.092E-08	9.056E-09	7.699E-09	6.673E-09	5.873E-09	
ESE	1.230E-07	6.824E-08	4.657E-08	2.863E-08	2.030E-08	1.556E-08	1.252E-08	1.043E-08	8.898E-09	7.739E-09	6.831E-09	
SE	9.379E-08	5.123E-08	3.458E-08	2.092E-08	1.467E-08	1.115E-08	8.913E-09	7.379E-09	6.267E-09	5.427E-09	4.773E-09	
SSE	8.120E-08	4.372E-08	2.924E-08	1.749E-08	1.218E-08	9.209E-09	7.334E-09	6.054E-09	5.129E-09	4.433E-09	3.891E-09	

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS) 40.10
DIAMETER (METERS) 7.46
EXIT VELOCITY (METERS) 3.31

REP. WIND HEIGHT (METERS) 40.1
BUILDING HEIGHT (METERS) 40.1
BLDG.MIN.CRS.SEC.AREA (SQ.METERS) 5130.0
HEAT EMISSION RATE (CAL/SEC) 0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE WIND SPEED (METERS/SEC) /
ELEVATED LESS THAN 0.662 /
MIXED BETWEEN 0.662 AND 3.310 /
GROUND LEVEL ABOVE 3.310 /

AT THE MEASURED WIND HEIGHT (10.0 METERS):

VENT RELEASE MODE WIND SPEED (METERS/SEC) /
ELEVATED LESS THAN 0.331 /
MIXED BETWEEN 0.331 AND 1.653 /
GROUND LEVEL ABOVE 1.653 /

WIND SPEED (METERS/SEC)
UNSTABLE/NEUTRAL CONDITIONS
LESS THAN 0.468
BETWEEN 0.468 AND 2.339
ABOVE 2.339

Fermi 2 2007 Data

Turbine Bldg

2.260 DAY DECAY, UNDEPLETED

CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	
S	1.685E-05	5.493E-06	2.933E-06	1.503E-06	6.236E-07	3.470E-07	2.247E-07	1.595E-07	1.204E-07	9.496E-08	7.738E-08	
SSW	1.148E-05	4.026E-06	2.212E-06	1.126E-06	4.570E-07	2.496E-07	1.592E-07	1.116E-07	8.334E-08	6.512E-08	5.264E-08	
SW	1.119E-05	3.950E-06	2.129E-06	1.072E-06	4.294E-07	2.329E-07	1.478E-07	1.032E-07	7.683E-08	5.986E-08	4.826E-08	
WSW	8.750E-06	2.986E-06	1.589E-06	7.962E-07	3.199E-07	1.746E-07	1.115E-07	7.826E-08	5.853E-08	4.578E-08	3.703E-08	
W	1.195E-05	4.082E-06	2.187E-06	1.097E-06	4.365E-07	2.354E-07	1.487E-07	1.036E-07	7.696E-08	5.990E-08	4.827E-08	
WNW	1.567E-05	5.131E-06	2.743E-06	1.381E-06	5.541E-07	3.002E-07	1.904E-07	1.330E-07	9.907E-08	7.728E-08	6.239E-08	
NW	1.437E-05	4.449E-06	2.300E-06	1.157E-06	4.729E-07	2.601E-07	1.671E-07	1.179E-07	8.865E-08	6.970E-08	5.666E-08	
NNW	1.288E-05	4.059E-06	2.175E-06	1.106E-06	4.540E-07	2.506E-07	1.614E-07	1.141E-07	8.590E-08	6.760E-08	5.500E-08	
N	1.666E-05	5.516E-06	2.983E-06	1.522E-06	6.239E-07	3.441E-07	2.215E-07	1.566E-07	1.178E-07	9.269E-08	7.538E-08	
NNE	3.395E-05	1.134E-05	6.121E-06	3.107E-06	1.259E-06	6.879E-07	4.395E-07	3.088E-07	2.312E-07	1.812E-07	1.468E-07	
NE	3.300E-05	1.127E-05	6.088E-06	3.079E-06	1.239E-06	6.737E-07	4.288E-07	3.003E-07	2.242E-07	1.752E-07	1.417E-07	
ENE	3.257E-05	1.118E-05	6.077E-06	3.107E-06	1.276E-06	7.046E-07	4.538E-07	3.209E-07	2.414E-07	1.899E-07	1.544E-07	
E	2.638E-05	8.735E-06	4.716E-06	2.433E-06	1.021E-06	5.736E-07	3.745E-07	2.678E-07	2.034E-07	1.613E-07	1.321E-07	
ESE	2.873E-05	9.143E-06	4.841E-06	2.505E-06	1.064E-06	6.030E-07	3.965E-07	2.852E-07	2.178E-07	1.735E-07	1.427E-07	
SE	2.225E-05	7.276E-06	3.910E-06	2.014E-06	8.446E-07	4.745E-07	3.098E-07	2.215E-07	1.683E-07	1.335E-07	1.093E-07	
SSE	2.041E-05	6.695E-06	3.595E-06	1.846E-06	7.664E-07	4.262E-07	2.760E-07	1.959E-07	1.480E-07	1.168E-07	9.523E-08	

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	
S	6.469E-08	3.439E-08	2.272E-08	1.329E-08	9.056E-09	6.706E-09	5.233E-09	4.234E-09	3.517E-09	2.982E-09	2.568E-09	
SSW	4.368E-08	2.259E-08	1.465E-08	8.347E-09	5.589E-09	4.086E-09	3.156E-09	2.533E-09	2.090E-09	1.761E-09	1.509E-09	
SW	3.996E-08	2.046E-08	1.315E-08	7.396E-09	4.904E-09	3.556E-09	2.727E-09	2.175E-09	1.784E-09	1.496E-09	1.276E-09	
WSW	3.075E-08	1.591E-08	1.029E-08	5.825E-09	3.877E-09	2.817E-09	2.164E-09	1.728E-09	1.419E-09	1.191E-09	1.017E-09	
W	3.996E-08	2.052E-08	1.327E-08	7.553E-09	5.067E-09	3.715E-09	2.881E-09	2.321E-09	1.924E-09	1.628E-09	1.402E-09	
WNW	5.173E-08	2.673E-08	1.736E-08	9.944E-09	6.703E-09	4.932E-09	3.835E-09	3.096E-09	2.570E-09	2.179E-09	1.877E-09	
NW	4.727E-08	2.501E-08	1.650E-08	9.646E-09	6.588E-09	4.894E-09	3.833E-09	3.114E-09	2.597E-09	2.211E-09	1.913E-09	
NNW	4.592E-08	2.431E-08	1.603E-08	9.353E-09	6.369E-09	4.716E-09	3.682E-09	2.981E-09	2.478E-09	2.103E-09	1.813E-09	
N	6.291E-08	3.324E-08	2.187E-08	1.272E-08	8.639E-09	6.381E-09	4.970E-09	4.014E-09	3.330E-09	2.820E-09	2.426E-09	
NNE	1.222E-07	6.390E-08	4.181E-08	2.417E-08	1.636E-08	1.207E-08	9.401E-09	7.598E-09	6.310E-09	5.349E-09	4.609E-09	
NE	1.176E-07	6.102E-08	3.967E-08	2.272E-08	1.527E-08	1.120E-08	8.672E-09	6.972E-09	5.761E-09	4.861E-09	4.169E-09	
ENE	1.288E-07	6.801E-08	4.471E-08	2.595E-08	1.758E-08	1.295E-08	1.006E-08	8.103E-09	6.704E-09	5.661E-09	4.857E-09	
E	1.109E-07	5.993E-08	4.004E-08	2.373E-08	1.629E-08	1.211E-08	9.469E-09	7.666E-09	6.366E-09	5.391E-09	4.636E-09	
ESE	1.202E-07	6.592E-08	4.447E-08	2.672E-08	1.852E-08	1.387E-08	1.092E-08	8.891E-09	7.421E-09	6.313E-09	5.451E-09	
SE	9.176E-08	4.955E-08	3.305E-08	1.954E-08	1.339E-08	9.944E-09	7.771E-09	6.290E-09	5.225E-09	4.425E-09	3.807E-09	
SSE	7.966E-08	4.247E-08	2.812E-08	1.648E-08	1.125E-08	8.336E-09	6.507E-09	5.265E-09	4.373E-09	3.705E-09	3.189E-09	

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS) 40.10
 DIAMETER (METERS) 7.46
 EXIT VELOCITY (METERS) 3.31

REP. WIND HEIGHT (METERS) 40.1
 BUILDING HEIGHT (METERS) 40.1
 BLDG.MIN.CRS.SEC.AREA (SQ.METERS) 5130.0
 HEAT EMISSION RATE (CAL/SEC) 0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE WIND SPEED (METERS/SEC) /
 ELEVATED LESS THAN 0.662 /
 MIXED BETWEEN 0.662 AND 3.310 /
 GROUND LEVEL ABOVE 3.310 /

AT THE MEASURED WIND HEIGHT (10.0 METERS):

VENT RELEASE MODE WIND SPEED (METERS/SEC) /
 ELEVATED LESS THAN 0.331 /
 MIXED BETWEEN 0.331 AND 1.653 /
 GROUND LEVEL ABOVE 1.653 /

WIND SPEED (METERS/SEC)
 UNSTABLE/NEUTRAL CONDITIONS
 LESS THAN 0.468
 BETWEEN 0.468 AND 2.339
 ABOVE 2.339

Fermi 2 2007 Data

Turbine Bldg
2.260 DAY DECAY, UNDEPLETED

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.866E-06	6.962E-07	2.312E-07	1.219E-07	7.789E-08	3.594E-08	1.350E-08	6.743E-09	4.246E-09	2.987E-09
SSW	2.133E-06	5.136E-07	1.643E-07	8.447E-08	5.302E-08	2.375E-08	8.521E-09	4.115E-09	2.542E-09	1.765E-09
SW	2.064E-06	4.849E-07	1.526E-07	7.790E-08	4.863E-08	2.154E-08	7.567E-09	3.584E-09	2.184E-09	1.500E-09
WSW	1.547E-06	3.612E-07	1.150E-07	5.931E-08	3.730E-08	1.671E-08	5.951E-09	2.838E-09	1.735E-09	1.194E-09
W	2.124E-06	4.938E-07	1.538E-07	7.806E-08	4.864E-08	2.162E-08	7.718E-09	3.742E-09	2.330E-09	1.632E-09
WNW	2.668E-06	6.249E-07	1.967E-07	1.005E-07	6.285E-08	2.812E-08	1.015E-08	4.965E-09	3.107E-09	2.183E-09
NW	2.270E-06	5.304E-07	1.722E-07	8.980E-08	5.704E-08	2.617E-08	9.809E-09	4.921E-09	3.123E-09	2.215E-09
NNW	2.118E-06	5.084E-07	1.663E-07	8.699E-08	5.537E-08	2.543E-08	9.510E-09	4.743E-09	2.989E-09	2.107E-09
N	2.897E-06	6.991E-07	2.282E-07	1.193E-07	7.589E-08	3.478E-08	1.294E-08	6.418E-09	4.027E-09	2.825E-09
NNE	5.942E-06	1.416E-06	4.534E-07	2.343E-07	1.479E-07	6.704E-08	2.462E-08	1.215E-08	7.623E-09	5.360E-09
NE	5.901E-06	1.397E-06	4.427E-07	2.273E-07	1.427E-07	6.411E-08	2.318E-08	1.127E-08	6.996E-09	4.871E-09
ENE	5.891E-06	1.429E-06	4.675E-07	2.445E-07	1.555E-07	7.117E-08	2.640E-08	1.303E-08	8.129E-09	5.672E-09
E	4.594E-06	1.136E-06	3.849E-07	2.057E-07	1.329E-07	6.241E-08	2.405E-08	1.217E-08	7.686E-09	5.400E-09
ESE	4.759E-06	1.179E-06	4.070E-07	2.202E-07	1.435E-07	6.846E-08	2.702E-08	1.393E-08	8.910E-09	6.322E-09
SE	3.815E-06	9.398E-07	3.184E-07	1.702E-07	1.100E-07	5.159E-08	1.981E-08	9.993E-09	6.307E-09	4.433E-09
SSE	3.507E-06	8.552E-07	2.840E-07	1.498E-07	9.585E-08	4.435E-08	1.674E-08	8.381E-09	5.280E-09	3.712E-09

Fermi 2 2007 Data

Turbine Bldg

8.000 DAY DECAY, DEPLETED

CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	0.250	0.500	0.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	
S	1.569E-05	5.005E-06	2.623E-06	1.323E-06	5.360E-07	2.927E-07	1.866E-07	1.307E-07	9.744E-08	7.601E-08	6.133E-08	
SSW	1.069E-05	3.668E-06	1.978E-06	9.928E-07	3.933E-07	2.108E-07	1.322E-07	9.136E-08	6.735E-08	5.201E-08	4.159E-08	
SW	1.043E-05	3.598E-06	1.903E-06	9.440E-07	3.691E-07	1.964E-07	1.227E-07	8.452E-08	6.216E-08	4.790E-08	3.824E-08	
WSW	8.151E-06	2.720E-06	1.420E-06	7.004E-07	2.750E-07	1.475E-07	9.292E-08	6.447E-08	4.772E-08	3.699E-08	2.967E-08	
W	1.113E-05	3.718E-06	1.953E-06	9.632E-07	3.732E-07	1.968E-07	1.220E-07	8.355E-08	6.115E-08	4.695E-08	3.735E-08	
WNW	1.460E-05	4.674E-06	2.450E-06	1.213E-06	4.737E-07	2.510E-07	1.561E-07	1.072E-07	7.861E-08	6.045E-08	4.817E-08	
NW	1.339E-05	4.054E-06	2.055E-06	1.017E-06	4.048E-07	2.180E-07	1.375E-07	9.556E-08	7.082E-08	5.497E-08	4.416E-08	
NNW	1.200E-05	3.699E-06	1.944E-06	9.730E-07	3.896E-07	2.108E-07	1.335E-07	9.300E-08	6.911E-08	5.376E-08	4.327E-08	
N	1.552E-05	5.027E-06	2.668E-06	1.340E-06	5.360E-07	2.900E-07	1.837E-07	1.281E-07	9.524E-08	7.412E-08	5.969E-08	
NNE	3.162E-05	1.033E-05	5.466E-06	2.729E-06	1.076E-06	5.756E-07	3.611E-07	2.497E-07	1.843E-07	1.425E-07	1.142E-07	
NE	3.074E-05	1.026E-05	5.441E-06	2.709E-06	1.063E-06	5.669E-07	3.549E-07	2.450E-07	1.806E-07	1.395E-07	1.116E-07	
ENE	3.034E-05	1.019E-05	5.438E-06	2.740E-06	1.100E-06	5.975E-07	3.794E-07	2.651E-07	1.974E-07	1.538E-07	1.240E-07	
E	2.458E-05	7.963E-06	4.223E-06	2.148E-06	8.836E-07	4.893E-07	3.157E-07	2.235E-07	1.683E-07	1.325E-07	1.078E-07	
ESE	2.677E-05	8.335E-06	4.334E-06	2.211E-06	9.194E-07	5.132E-07	3.333E-07	2.373E-07	1.797E-07	1.421E-07	1.160E-07	
SE	2.074E-05	6.635E-06	3.501E-06	1.777E-06	7.300E-07	4.037E-07	2.603E-07	1.842E-07	1.387E-07	1.091E-07	8.871E-08	
SSE	1.901E-05	6.101E-06	3.217E-06	1.628E-06	6.602E-07	3.606E-07	2.300E-07	1.612E-07	1.203E-07	9.401E-08	7.596E-08	

SECTOR	ANNUAL AVERAGE CHI/Q (SEC/METER CUBED)				DISTANCE IN MILES FROM THE SITE							
	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000	
S	5.080E-08	2.610E-08	1.677E-08	9.408E-09	6.220E-09	4.497E-09	3.442E-09	2.739E-09	2.240E-09	1.873E-09	1.593E-09	
SSW	3.417E-08	1.702E-08	1.070E-08	5.823E-09	3.769E-09	2.683E-09	2.028E-09	1.598E-09	1.296E-09	1.077E-09	9.102E-10	
SW	3.136E-08	1.551E-08	9.693E-09	5.225E-09	3.357E-09	2.373E-09	1.782E-09	1.395E-09	1.125E-09	9.285E-10	7.802E-10	
WSW	2.445E-08	1.230E-08	7.776E-09	4.257E-09	2.763E-09	1.969E-09	1.488E-09	1.171E-09	9.474E-10	7.846E-10	6.611E-10	
W	3.056E-08	1.500E-08	9.331E-09	5.003E-09	3.203E-09	2.259E-09	1.694E-09	1.324E-09	1.067E-09	8.808E-10	7.404E-10	
WNW	3.946E-08	1.947E-08	1.215E-08	6.546E-09	4.206E-09	2.974E-09	2.235E-09	1.750E-09	1.413E-09	1.168E-09	9.828E-10	
NW	3.645E-08	1.851E-08	1.179E-08	6.539E-09	4.287E-09	3.080E-09	2.344E-09	1.856E-09	1.512E-09	1.260E-09	1.067E-09	
NNW	3.577E-08	1.826E-08	1.168E-08	6.513E-09	4.286E-09	3.088E-09	2.356E-09	1.870E-09	1.526E-09	1.273E-09	1.081E-09	
N	4.936E-08	2.524E-08	1.616E-08	9.032E-09	5.958E-09	4.302E-09	3.290E-09	2.617E-09	2.139E-09	1.788E-09	1.520E-09	
NNE	9.395E-08	4.715E-08	2.980E-08	1.634E-08	1.063E-08	7.590E-09	5.750E-09	4.537E-09	3.685E-09	3.063E-09	2.590E-09	
NE	9.178E-08	4.596E-08	2.903E-08	1.593E-08	1.039E-08	7.440E-09	5.653E-09	4.473E-09	3.641E-09	3.033E-09	2.571E-09	
ENE	1.027E-07	5.273E-08	3.392E-08	1.911E-08	1.269E-08	9.222E-09	7.092E-09	5.671E-09	4.656E-09	3.909E-09	3.336E-09	
E	8.996E-08	4.769E-08	3.140E-08	1.828E-08	1.242E-08	9.188E-09	7.167E-09	5.800E-09	4.808E-09	4.072E-09	3.501E-09	
ESE	9.719E-08	5.223E-08	3.470E-08	2.044E-08	1.401E-08	1.043E-08	8.182E-09	6.654E-09	5.540E-09	4.710E-09	4.065E-09	
SE	7.399E-08	3.909E-08	2.562E-08	1.480E-08	9.997E-09	7.355E-09	5.712E-09	4.604E-09	3.805E-09	3.212E-09	2.755E-09	
SSE	6.301E-08	3.260E-08	2.107E-08	1.194E-08	7.956E-09	5.795E-09	4.465E-09	3.575E-09	2.939E-09	2.471E-09	2.111E-09	

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS)	40.10	REP. WIND HEIGHT (METERS)	40.1
DIAMETER (METERS)	7.46	BUILDING HEIGHT (METERS)	40.1
EXIT VELOCITY (METERS)	3.31	BLDG.MIN.CRS.SEC.AREA (SQ.METERS)	5130.0
		HEAT EMISSION RATE (CAL/SEC)	0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE	WIND SPEED (METERS/SEC)
ELEVATED	LESS THAN 0.662
MIXED	BETWEEN 0.662 AND 3.310
GROUND LEVEL	ABOVE 3.310

/ AT THE MEASURED WIND HEIGHT (10.0 METERS):

VENT RELEASE MODE	WIND SPEED (METERS/SEC)	WIND SPEED (METERS/SEC)
	STABLE CONDITIONS	UNSTABLE/NEUTRAL CONDITIONS
ELEVATED	LESS THAN 0.331	LESS THAN 0.468
MIXED	BETWEEN 0.331 AND 1.653	BETWEEN 0.468 AND 2.339
GROUND LEVEL	ABOVE 1.653	ABOVE 2.339

Fermi 2 2007 Data

Turbine Bldg

8.000 DAY DECAY, DEPLETED

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.575E-06	6.028E-07	1.925E-07	9.877E-08	6.178E-08	2.744E-08	9.627E-09	4.535E-09	2.750E-09	1.878E-09
SSW	1.916E-06	4.454E-07	1.368E-07	6.836E-08	4.193E-08	1.802E-08	5.994E-09	2.711E-09	1.606E-09	1.080E-09
SW	1.853E-06	4.201E-07	1.271E-07	6.312E-08	3.855E-08	1.645E-08	5.387E-09	2.399E-09	1.403E-09	9.318E-10
WSW	1.389E-06	3.129E-07	9.611E-08	4.842E-08	2.991E-08	1.299E-08	4.375E-09	1.988E-09	1.176E-09	7.871E-10
W	1.906E-06	4.259E-07	1.266E-07	6.214E-08	3.768E-08	1.594E-08	5.165E-09	2.284E-09	1.332E-09	8.841E-10
WNW	2.395E-06	5.390E-07	1.618E-07	7.985E-08	4.859E-08	2.066E-08	6.751E-09	3.007E-09	1.760E-09	1.172E-09
NW	2.038E-06	4.579E-07	1.422E-07	7.185E-08	4.451E-08	1.951E-08	6.706E-09	3.108E-09	1.864E-09	1.263E-09
NNW	1.903E-06	4.398E-07	1.379E-07	7.009E-08	4.360E-08	1.923E-08	6.672E-09	3.115E-09	1.878E-09	1.277E-09
N	2.602E-06	6.053E-07	1.898E-07	9.658E-08	6.014E-08	2.657E-08	9.250E-09	4.339E-09	2.627E-09	1.792E-09
NNE	5.331E-06	1.221E-06	3.737E-07	1.871E-07	1.151E-07	4.984E-08	1.679E-08	7.664E-09	4.559E-09	3.072E-09
NE	5.298E-06	1.208E-06	3.674E-07	1.833E-07	1.125E-07	4.862E-08	1.638E-08	7.512E-09	4.493E-09	3.042E-09
ENE	5.294E-06	1.241E-06	3.918E-07	2.001E-07	1.249E-07	5.546E-08	1.955E-08	9.296E-09	5.690E-09	3.918E-09
E	4.132E-06	9.894E-07	3.251E-07	1.705E-07	1.085E-07	4.984E-08	1.859E-08	9.242E-09	5.812E-09	4.079E-09
ESE	4.279E-06	1.026E-06	3.429E-07	1.818E-07	1.168E-07	5.443E-08	2.075E-08	1.049E-08	6.666E-09	4.717E-09
SE	3.431E-06	8.177E-07	2.681E-07	1.404E-07	8.930E-08	4.086E-08	1.507E-08	7.403E-09	4.616E-09	3.218E-09
SSE	3.152E-06	7.420E-07	2.373E-07	1.220E-07	7.651E-08	3.423E-08	1.220E-08	5.839E-09	3.587E-09	2.476E-09

Fermi 2 2007 Data

Turbine Bldg

CORRECTED USING STANDARD OPEN TERRAIN FACTORS

***** RELATIVE DEPOSITION PER UNIT AREA (M**⁻²) AT FIXED POINTS BY DOWNWIND SECTORS *****

DIRECTION FROM SITE	DISTANCES IN MILES										
	0.25	0.50	0.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	8.812E-08	3.033E-08	1.572E-08	7.534E-09	2.735E-09	1.365E-09	8.079E-10	5.309E-10	3.746E-10	2.782E-10	2.148E-10
SSW	6.940E-08	2.400E-08	1.251E-08	6.019E-09	2.194E-09	1.096E-09	6.486E-10	4.263E-10	3.008E-10	2.234E-10	1.725E-10
SW	8.408E-08	2.886E-08	1.494E-08	7.152E-09	2.590E-09	1.290E-09	7.619E-10	5.001E-10	3.525E-10	2.617E-10	2.019E-10
WSW	9.119E-08	3.112E-08	1.604E-08	7.649E-09	2.757E-09	1.370E-09	8.082E-10	5.299E-10	3.733E-10	2.769E-10	2.135E-10
W	1.175E-07	4.004E-08	2.059E-08	9.796E-09	3.523E-09	1.748E-09	1.030E-09	6.750E-10	4.753E-10	3.524E-10	2.717E-10
WNW	1.291E-07	4.410E-08	2.270E-08	1.081E-08	3.893E-09	1.933E-09	1.140E-09	7.470E-10	5.260E-10	3.901E-10	3.008E-10
NW	1.323E-07	4.531E-08	2.331E-08	1.110E-08	4.001E-09	1.989E-09	1.173E-09	7.691E-10	5.419E-10	4.020E-10	3.100E-10
NNW	9.767E-08	3.358E-08	1.732E-08	8.265E-09	2.982E-09	1.483E-09	8.753E-10	5.742E-10	4.046E-10	3.003E-10	2.317E-10
N	9.742E-08	3.361E-08	1.735E-08	8.285E-09	2.993E-09	1.490E-09	8.794E-10	5.771E-10	4.068E-10	3.019E-10	2.330E-10
NNE	2.210E-07	7.539E-08	3.884E-08	1.852E-08	6.676E-09	3.319E-09	1.957E-09	1.283E-09	9.039E-10	6.704E-10	5.170E-10
NE	2.293E-07	7.826E-08	4.041E-08	1.930E-08	6.970E-09	3.467E-09	2.046E-09	1.341E-09	9.451E-10	7.011E-10	5.407E-10
ENE	1.738E-07	5.992E-08	3.117E-08	1.497E-08	5.446E-09	2.719E-09	1.608E-09	1.056E-09	7.450E-10	5.532E-10	4.270E-10
E	1.264E-07	4.367E-08	2.280E-08	1.098E-08	4.003E-09	2.003E-09	1.186E-09	7.805E-10	5.511E-10	4.095E-10	3.162E-10
ESE	1.149E-07	3.979E-08	2.069E-08	9.939E-09	3.613E-09	1.806E-09	1.069E-09	7.028E-10	4.961E-10	3.686E-10	2.846E-10
SE	1.061E-07	3.724E-08	1.937E-08	9.302E-09	3.385E-09	1.692E-09	1.002E-09	6.590E-10	4.655E-10	3.460E-10	2.673E-10
SSE	9.802E-08	3.397E-08	1.771E-08	8.526E-09	3.110E-09	1.555E-09	9.201E-10	6.049E-10	4.269E-10	3.171E-10	2.448E-10

DIRECTION FROM SITE	DISTANCES IN MILES										
	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	1.708E-10	7.616E-11	4.611E-11	2.338E-11	1.423E-11	9.612E-12	6.951E-12	5.272E-12	4.145E-12	3.347E-12	2.765E-12
SSW	1.372E-10	6.112E-11	3.693E-11	1.868E-11	1.136E-11	7.663E-12	5.535E-12	4.192E-12	3.291E-12	2.654E-12	2.189E-12
SW	1.605E-10	7.148E-11	4.326E-11	2.190E-11	1.331E-11	8.970E-12	6.466E-12	4.885E-12	3.823E-12	3.072E-12	2.524E-12
WSW	1.698E-10	7.555E-11	4.577E-11	2.318E-11	1.407E-11	9.478E-12	6.824E-12	5.149E-12	4.025E-12	3.231E-12	2.650E-12
W	2.159E-10	9.606E-11	5.821E-11	2.950E-11	1.791E-11	1.205E-11	8.675E-12	6.541E-12	5.108E-12	4.097E-12	3.358E-12
WNW	2.391E-10	1.064E-10	6.447E-11	3.267E-11	1.985E-11	1.337E-11	9.626E-12	7.262E-12	5.675E-12	4.553E-12	3.732E-12
NW	2.465E-10	1.097E-10	6.651E-11	3.375E-11	2.053E-11	1.385E-11	9.986E-12	7.545E-12	5.906E-12	4.745E-12	3.895E-12
NNW	1.842E-10	8.206E-11	4.973E-11	2.524E-11	1.537E-11	1.038E-11	7.503E-12	5.682E-12	4.459E-12	3.592E-12	2.957E-12
N	1.853E-10	8.257E-11	5.004E-11	2.542E-11	1.550E-11	1.049E-11	7.598E-12	5.773E-12	4.547E-12	3.677E-12	3.041E-12
NNE	4.109E-10	1.828E-10	1.107E-10	5.607E-11	3.404E-11	2.291E-11	1.649E-11	1.245E-11	9.734E-12	7.819E-12	6.420E-12
NE	4.298E-10	1.912E-10	1.157E-10	5.854E-11	3.552E-11	2.391E-11	1.722E-11	1.301E-11	1.019E-11	8.194E-12	6.743E-12
ENE	3.396E-10	1.512E-10	9.143E-11	4.625E-11	2.812E-11	1.899E-11	1.375E-11	1.045E-11	8.244E-12	6.682E-12	5.546E-12
E	2.516E-10	1.123E-10	6.790E-11	3.438E-11	2.092E-11	1.418E-11	1.031E-11	7.884E-12	6.258E-12	5.106E-12	4.272E-12
ESE	2.265E-10	1.011E-10	6.118E-11	3.105E-11	1.894E-11	1.287E-11	9.397E-12	7.220E-12	5.764E-12	4.729E-12	3.981E-12
SE	2.128E-10	9.509E-11	5.760E-11	2.934E-11	1.798E-11	1.225E-11	8.957E-12	6.872E-12	5.472E-12	4.471E-12	3.740E-12
SSE	1.948E-10	8.678E-11	5.243E-11	2.653E-11	1.615E-11	1.091E-11	7.905E-12	6.013E-12	4.745E-12	3.846E-12	3.192E-12

B Visitor Center/Ice F E 0.29 470. 2.1E-05 2.1E-05 1.9E-05 1.0E-07

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS)	40.10	REP. WIND HEIGHT (METERS)	40.1
DIAMETER (METERS)	7.46	BUILDING HEIGHT (METERS)	40.1
EXIT VELOCITY (METERS)	3.31	BLDG.MIN.CRS.SEC.AREA (SQ.METERS)	5130.0
		HEAT EMISSION RATE (CAL/SEC)	0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE	WIND SPEED (METERS/SEC)	
ELEVATED	LESS THAN 0.662	
MIXED	BETWEEN 0.662 AND 3.310	
GROUND LEVEL	ABOVE 3.310	

/ AT THE MEASURED WIND HEIGHT (10.0 METERS):

VENT RELEASE MODE	WIND SPEED (METERS/SEC)	WIND SPEED (METERS/SEC)
	STABLE CONDITIONS	UNSTABLE/NEUTRAL CONDITIONS
ELEVATED	LESS THAN 0.331	LESS THAN 0.468
MIXED	BETWEEN 0.331 AND 1.653	BETWEEN 0.468 AND 2.339
GROUND LEVEL	ABOVE 1.653	ABOVE 2.339

Appendix H
Offsite Dose Calculation Manual
for 2007 Revisions

Fermi 2 2007 Data

Turbine Bldg

***** RELATIVE DEPOSITION PER UNIT AREA (M**⁻²) BY DOWNWIND SECTORS *****

SEGMENT BOUNDARIES IN MILES

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	1.533E-08	3.193E-09	8.458E-10	3.826E-10	2.173E-10	8.384E-11	2.436E-11	9.779E-12	5.323E-12	3.368E-12
SSW	1.218E-08	2.556E-09	6.790E-10	3.072E-10	1.745E-10	6.728E-11	1.948E-11	7.797E-12	4.233E-12	2.671E-12
SW	1.457E-08	3.026E-09	7.980E-10	3.601E-10	2.043E-10	7.873E-11	2.283E-11	9.125E-12	4.932E-12	3.091E-12
WSW	1.566E-08	3.228E-09	8.468E-10	3.813E-10	2.161E-10	8.325E-11	2.415E-11	9.642E-12	5.199E-12	3.251E-12
W	2.012E-08	4.128E-09	1.080E-09	4.855E-10	2.750E-10	1.059E-10	3.073E-11	1.226E-11	6.605E-12	4.123E-12
WNW	2.217E-08	4.560E-09	1.194E-09	5.374E-10	3.044E-10	1.173E-10	3.404E-11	1.360E-11	7.333E-12	4.581E-12
NW	2.277E-08	4.685E-09	1.229E-09	5.535E-10	3.137E-10	1.209E-10	3.516E-11	1.409E-11	7.618E-12	4.774E-12
NNW	1.691E-08	3.490E-09	9.170E-10	4.133E-10	2.344E-10	9.039E-11	2.629E-11	1.056E-11	5.736E-12	3.614E-12
N	1.694E-08	3.501E-09	9.212E-10	4.155E-10	2.358E-10	9.094E-11	2.648E-11	1.067E-11	5.827E-12	3.699E-12
NNE	3.793E-08	7.815E-09	2.051E-09	9.233E-10	5.232E-10	2.015E-10	5.842E-11	2.331E-11	1.257E-11	7.869E-12
NE	3.944E-08	8.153E-09	2.143E-09	9.654E-10	5.471E-10	2.107E-10	6.102E-11	2.433E-11	1.314E-11	8.247E-12
ENE	3.036E-08	6.351E-09	1.683E-09	7.608E-10	4.320E-10	1.665E-10	4.823E-11	1.933E-11	1.055E-11	6.724E-12
E	2.219E-08	4.665E-09	1.242E-09	5.627E-10	3.200E-10	1.235E-10	3.585E-11	1.443E-11	7.958E-12	5.138E-12
ESE	2.016E-08	4.216E-09	1.119E-09	5.066E-10	2.880E-10	1.112E-10	3.236E-11	1.310E-11	7.287E-12	4.758E-12
SE	1.887E-08	3.947E-09	1.049E-09	4.753E-10	2.705E-10	1.046E-10	3.057E-11	1.246E-11	6.934E-12	4.497E-12
SSE	1.724E-08	3.622E-09	9.632E-10	4.359E-10	2.477E-10	9.552E-11	2.767E-11	1.111E-11	6.070E-12	3.870E-12

VENT AND BUILDING PARAMETERS:

RELEASE HEIGHT (METERS)	40.10	REP. WIND HEIGHT (METERS)	40.1
DIAMETER (METERS)	7.46	BUILDING HEIGHT (METERS)	40.1
EXIT VELOCITY (METERS)	3.31	BLDG. MIN. CRS. SEC. AREA (SQ. METERS)	5130.0
		HEAT EMISSION RATE (CAL/SEC)	0.0

AT THE RELEASE HEIGHT:

VENT RELEASE MODE	WIND SPEED (METERS/SEC)
ELEVATED	LESS THAN 0.662
MIXED	BETWEEN 0.662 AND 3.310
GROUND LEVEL	ABOVE 3.310

/ AT THE MEASURED WIND HEIGHT (10.0 METERS):

VENT RELEASE MODE	WIND SPEED (METERS/SEC)	WIND SPEED (METERS/SEC)
ELEVATED	LESS THAN 0.331	UNSTABLE/NEUTRAL CONDITIONS
MIXED	BETWEEN 0.331 AND 1.653	LESS THAN 0.468
GROUND LEVEL	ABOVE 1.653	BETWEEN 0.468 AND 2.339
		ABOVE 2.339

Fermi 2 2007 Data

Turbine Bldg
CORRECTED USING STANDARD OPEN TERRAIN FACTORS
SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DISTANCE (MILES)	DISTANCE (METERS)	X/Q			D/Q (PER SQ.METER)	
					(SEC/CUB.METER) NO DECAY	(SEC/CUB.METER) 2.260 DAY DECAY	(SEC/CUB.METER) 8.000 DAY DECAY		
					UNDEPLETED	UNDEPLETED	DEPLETED		
B	SITE BOUNDARY	NE	1.13	1825.	2.3E-06	2.3E-06	2.0E-06	1.4E-08	
B	SITE BOUNDARY	NNE	1.02	1646.	3.0E-06	2.9E-06	2.6E-06	1.7E-08	
B	SITE BOUNDARY	NE	0.36	579.	1.9E-05	1.9E-05	1.7E-05	1.3E-07	
B	SITE BOUNDARY	S	0.88	1417.	2.0E-06	2.0E-06	1.8E-06	1.0E-08	
B	SITE BOUNDARY	SSW	0.96	1542.	1.2E-06	1.2E-06	1.1E-06	6.7E-09	
B	SITE BOUNDARY	SW	1.19	1920.	7.2E-07	7.1E-07	6.2E-07	4.6E-09	
B	SITE BOUNDARY	WSW	1.12	1798.	6.2E-07	6.2E-07	5.4E-07	5.8E-09	
B	SITE BOUNDARY	W	0.86	1390.	1.6E-06	1.6E-06	1.4E-06	1.4E-08	
B	SITE BOUNDARY	WNW	0.67	1082.	3.3E-06	3.2E-06	2.9E-06	2.7E-08	
B	SITE BOUNDARY	NW	0.57	915.	3.6E-06	3.6E-06	3.3E-06	3.7E-08	
B	SITE BOUNDARY	NNW	0.62	990.	3.0E-06	3.0E-06	2.7E-06	2.4E-08	
B	Residences	N	1.10	1776.	1.2E-06	1.2E-06	1.1E-06	6.4E-09	
B	Residences	NE	1.10	1773.	2.5E-06	2.5E-06	2.2E-06	1.5E-08	
B	Residences	NNE	1.02	1646.	3.0E-06	2.9E-06	2.6E-06	1.7E-08	
B	Residences	NNW	1.08	1743.	9.3E-07	9.2E-07	8.1E-07	6.7E-09	
B	Residences	NW	1.06	1700.	1.0E-06	1.0E-06	8.9E-07	9.6E-09	
B	Residences	WNW	0.69	1103.	3.2E-06	3.2E-06	2.8E-06	2.6E-08	
B	Residences	W	1.16	1861.	7.8E-07	7.8E-07	6.8E-07	6.8E-09	
B	Residences	WSW	1.58	2547.	2.9E-07	2.8E-07	2.4E-07	2.4E-09	
B	Residences	SW	1.26	2025.	6.4E-07	6.3E-07	5.5E-07	4.0E-09	
B	Residences	SSW	1.13	1826.	8.5E-07	8.4E-07	7.4E-07	4.4E-09	
B	Residences	S	1.02	1640.	1.4E-06	1.4E-06	1.3E-06	7.2E-09	
B	MILK COW	NW	3.65	5874.	8.3E-08	8.2E-08	6.5E-08	4.9E-10	
B	MILK COW	WNW	2.28	3672.	2.3E-07	2.3E-07	1.9E-07	1.4E-09	
B	VEGETABLE GARDEN	N	1.64	2633.	5.2E-07	5.2E-07	4.4E-07	2.4E-09	
B	VEGETABLE GARDEN	NNE	1.80	2894.	8.6E-07	8.6E-07	7.2E-07	4.3E-09	
B	VEGETABLE GARDEN	NE	1.99	3200.	6.9E-07	6.8E-07	5.7E-07	3.5E-09	
B	VEGETABLE GARDEN	NNW	2.55	4107.	1.6E-07	1.6E-07	1.3E-07	8.3E-10	
B	VEGETABLE GARDEN	NW	2.76	4435.	1.4E-07	1.4E-07	1.1E-07	9.4E-10	
B	VEGETABLE GARDEN	SSW	1.50	2414.	4.6E-07	4.6E-07	3.9E-07	2.2E-09	
B	VEGETABLE GARDEN	SW	4.39	7062.	5.1E-08	5.1E-08	4.0E-08	2.1E-10	
B	VEGETABLE GARDEN	W	3.18	5123.	9.3E-08	9.2E-08	7.4E-08	5.9E-10	
B	VEGETABLE GARDEN	WNW	1.82	2936.	3.7E-07	3.6E-07	3.1E-07	2.4E-09	
B	VEGETABLE GARDEN	WSW	3.21	5173.	6.9E-08	6.9E-08	5.6E-08	4.5E-10	
B	Visitor Center/Ice F	SSW	0.29	470.	9.0E-06	9.0E-06	8.4E-06	5.5E-08	