

10 CFR 50 Appendix I

RA12-016

May 9, 2012

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

LaSalle County Station, Units 1 and 2
Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Subject: 2011 Annual Radiological Environmental Operating Report

Enclosed is the Exelon Generation Company, LLC, LaSalle County Station 2011 Annual Radiological Environmental Operating Report, submitted in accordance with Technical Specification 5.6.2, "Annual Radiological Environmental Operating Report." This report contains the results of the Radiological Environmental and Meteorological Monitoring Programs. This report is enclosed as an attachment.

In addition, this attachment contains the results of groundwater monitoring conducted in accordance with Exelon's Radiological Groundwater Protection Program, which is a voluntary program implemented in 2006. This information is being reported in accordance with a nuclear industry initiative.

Should you have any questions concerning this letter, please contact Mr. Terrence W. Simpkin, Regulatory Assurance Manager, at (815) 415-2800.

Respectfully,



David P. Rhoades
Site Vice President
LaSalle County Station

Attachment

cc: Regional Administrator - NRC Region III
NRC Senior Resident Inspector - LaSalle County Station

Docket No: 50-373

50-374

LASALLE COUNTY STATION UNITS 1 and 2

Annual Radiological
Environmental Operating Report

1 January Through 31 December 2011

Prepared By

Teledyne Brown Engineering
Environmental Services

ExelonSM

Nuclear

LaSalle County Station
Marseilles, IL 61341

May 2012

Table Of Contents

| | |
|------------------------------------------------------------------|----|
| I. Summary and Conclusions..... | 1 |
| II. Introduction | 3 |
| A. Objectives of the REMP | 3 |
| B. Implementation of the Objectives..... | 3 |
| III. Program Description | 3 |
| A. Sample Collection | 3 |
| B. Sample Analysis..... | 5 |
| C. Data Interpretation | 6 |
| D. Program Exceptions..... | 7 |
| E. Program Changes | 9 |
| IV. Results and Discussion | 9 |
| A. Aquatic Environment | 9 |
| 1. Surface Water..... | 9 |
| 2. Ground/well Water..... | 10 |
| 3. Fish | 10 |
| 4. Sediment..... | 10 |
| B. Atmospheric Environment | 11 |
| 1. Airborne | 11 |
| a. Air Particulates..... | 11 |
| b. Airborne Iodine | 12 |
| 2. Terrestrial..... | 12 |
| a. Milk..... | 12 |
| b. Food Products | 13 |
| C. Ambient Gamma Radiation..... | 13 |
| D. Land Use Survey..... | 13 |
| E. Summary of Results – Inter-laboratory Comparison Program..... | 14 |

Appendices

Appendix A Radiological Environmental Monitoring Report Annual Summary

Tables

Table A-1 Radiological Environmental Monitoring Program Annual Summary for the LaSalle County Station, 2011

Appendix B Location Designation, Distance & Direction, and Sample Collection & Analytical Methods

Tables

Table B-1 Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, LaSalle County Station, 2011

Table B-2 Radiological Environmental Monitoring Program - Summary of Sample Collection and Analytical Methods, LaSalle County Station, 2011

Figures

Figure B-1 Inner Ring TLD Locations of the LaSalle County Station, 2011

Figure B-2 Outer Ring TLD Locations and Fixed Air Sampling Locations of the LaSalle County Station, 2011

Figure B-3 Figure B-4 Ingestion and Waterborne Exposure Pathway Sample Locations of the LaSalle County Station, 2011

Appendix C Data Tables and Figures - Primary Laboratory

Tables

Table C-I.1 Concentrations of Gross Beta in Surface Water Samples Collected in the Vicinity of LaSalle County Station, 2011.

Table C-I.2 Concentrations of Tritium in Surface Water Samples Collected in the Vicinity of LaSalle County Station, 2011.

Table C-I.3 Concentrations of Gamma Emitters in Surface Water Samples Collected in the Vicinity of LaSalle County Station, 2011.

Table C-II.1 Concentrations of Tritium in Ground/Well Water Samples Collected in the Vicinity of LaSalle County Station, 2011

Table C-II.2 Concentrations of Gamma Emitters in Ground/Well Water Samples Collected in the Vicinity of LaSalle County Station, 2011.

| | |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Table C-III.1 | Concentrations of Gamma Emitters in Fish Samples Collected in the Vicinity of LaSalle County Station, 2011. |
| Table C-IV.1 | Concentrations of Gamma Emitters in Sediment Samples Collected in the Vicinity of LaSalle County Station, 2011. |
| Table C-V.1 | Concentrations of Gross Beta in Air Particulate Samples Collected in the Vicinity of LaSalle County Station, 2011. |
| Table C-V.2 | Monthly and Yearly Mean Values of Gross Beta Concentrations (E-3 pCi/cu meter) in Air Particulate Samples Collected in the Vicinity of LaSalle County Station, 2011. |
| Table C-V.3 | Concentrations of Gamma Emitters in Air Particulate Samples Collected in the Vicinity of LaSalle County Station, 2011. |
| Table C-VI.1 | Concentrations of I-131 in Air Iodine Samples Collected in the Vicinity of LaSalle County Station, 2011. |
| Table C-VII.1 | Concentrations of I-131 in Milk Samples Collected in the Vicinity of LaSalle County Station, 2011. |
| Table C-VII.2 | Concentrations of Gamma Emitters in Milk Samples Collected in the Vicinity of LaSalle County Station, 2011. |
| Table C-VIII.1 | Concentrations of Gamma Emitters in Food Product Samples Collected in the Vicinity of LaSalle County Station, 2011. |
| Table C-IX.1 | Quarterly TLD Results for LaSalle County Station, 2011. |
| Table C-IX.2 | Mean Quarterly TLD Results for the Inner Ring, Outer Ring, Other and Control Locations for LaSalle County Station, 2011. |
| Table C-IX.3 | Summary of the Ambient Dosimetry Program for LaSalle County Station, 2011. |

Figures

| | |
|------------|---------------------------------------------------------------------------------------------------------|
| Figure C-1 | Surface Water - Gross Beta – Stations L-21 (C) and L-40 Collected in the Vicinity of LSCS, 2005 - 2011. |
| Figure C-2 | Surface Water - Tritium – Stations L-21 (C) and L-40 Collected in the Vicinity of LSCS, 2005 - 2011. |
| Figure C-3 | Air Particulate - Gross Beta – Stations L-01 and L-03 Collected in the Vicinity of LSCS, 2005 - 2011. |
| Figure C-4 | Air Particulate - Gross Beta – Stations L-05 and L-06 Collected in the Vicinity of LSCS, 2005 - 2011. |
| Figure C-5 | Air Particulate - Gross Beta – Station L-10 (C) Collected in the Vicinity of LSCS, 2005 - 2011. |
| Figure C-6 | Air Particulate - Gross Beta – Station L-04 and L-07 Collected in the Vicinity of LSCS, 2005 – 2011. |

Figure C-7 Air Particulate - Gross Beta – Station L-08 and L-11 Collected in the Vicinity of LSCS, 2005 - 2011.

Appendix D Inter-Laboratory Comparison Program

Tables

- Table D-1 Analytics Environmental Radioactivity Cross Check Program
Teledyne Brown Engineering, 2011
- Table D-2 ERA Environmental Radioactivity Cross Check Program
Teledyne Brown Engineering, 2011
- Table D-3 DOE's Mixed Analyte Performance Evaluation Program (MAPEP)
Teledyne Brown Engineering, 2011
- Table D-4 ERA Statistical Summary Proficiency Testing Program
Environmental, Inc., 2011
- Table D-5 DOE's Mixed Analyte Performance Evaluation Program (MAPEP)
Environmental, Inc., 2011

Appendix E Effluent Data

Appendix F Meteorological Data

Appendix G Annual Radiological Groundwater Protection Program Report (ARGPPR)

I. Summary and Conclusions

This report on the Radiological Environmental Monitoring Program conducted for the LaSalle County Station (LSCS) by Exelon covers the period 1 January 2011 through 31 December 2011. During that time period, 1,461 analyses were performed on 1,356 samples. In assessing all the data gathered for this report and comparing these results with preoperational data, it was concluded that the operation of LSCS had no adverse radiological impact on the environment.

On March 11, 2011 an earthquake off the Japanese islands produced a massive tsunami that caused a nuclear accident at four of the six Fukushima Daiichi reactors. In planning for the potential radioactive plume reaching the United States, Exelon Nuclear increased the sampling frequency and added additional analyses of select media from pathways that were expected to be the most sensitive to any increase in ambient radiation levels. Low level I-131 analyses and gamma spectroscopy analyses were performed on air particulates, air iodine, and milk, as appropriate.

The resulting radioactive plume was first detected in the environs of LaSalle County Station on March 17, 2011. The final date of positive detection was April 07, 2011. The radionuclide identified was Iodine-131. Maximum activity levels found by media were 179 E-3 pCi/m^3 for air iodine. Samples collected were compared to offsite control locations to verify that these positive detections were not attributable to licensed activities. All other radionuclides analyzed for were below MDL.

The radioactive half-life of I-131 is about 8 days. This short half-life allowed the effects of this radioactive plume to subside over about 3 weeks. As of April 08, 2011 no further impacts from the Fukushima Daiichi accident was evident.

Surface water samples were analyzed for concentrations of gross beta, tritium and gamma emitting nuclides. Ground/well water samples were analyzed for concentrations of tritium and gamma emitting nuclides. No fission or activation products were detected. Gross beta and tritium activities detected were consistent with those detected in previous years.

Fish (commercially and recreationally important species) and sediment samples were analyzed for concentrations of gamma emitting nuclides. No fission or activation products were detected in fish or sediment. Sediment samples had Cs-137 concentrations consistent with levels observed during the preoperational years. No plant produced fission or activation products were found in sediment.

Air particulate samples were analyzed for concentrations of gross beta and gamma emitting nuclides. No fission or activation products were detected.

High sensitivity I-131 analyses were performed on weekly air samples. All results were less than the minimum detectable activity with the exception of 21 samples which were positive for I-131. These positive results are directly attributed to the Fukushima event in March of 2011.

Cow milk samples were analyzed for concentrations of I-131 and gamma emitting nuclides. All I-131 results were below the minimum detectable activity. Concentrations of naturally occurring K-40 were consistent with those detected in previous years. No fission or activation products were found.

Food product samples were analyzed for concentrations of gamma emitting nuclides. No fission or activation products were detected.

Environmental gamma radiation measurements were performed quarterly using thermoluminescent dosimeters. Levels detected were consistent with those observed in previous years.

II. Introduction

The LaSalle County Station (LSCS), consisting of two boiling water reactors, each rated for 3,546 MWt, owned and operated by Exelon Corporation, is located in LaSalle County, Illinois. Unit 1 went critical on 16 March 1982. Unit 2 went critical on 02 December 1983. The site is located in northern Illinois, approximately 75 miles southwest of Chicago, Illinois.

A Radiological Environmental Monitoring Program (REMP) for LSCS was initiated in 1982 (the preoperational period for most media covers the periods 1 January 1979 through 26 December 1981 and was summarized in a separate report.). This report covers those analyses performed by Teledyne Brown Engineering (TBE), Mirion Technologies, and Environmental Inc. (Midwest Labs) on samples collected during the period 1 January 2011 through 31 December 2011.

A. Objective of the REMP

The objectives of the REMP are to:

1. Provide data on measurable levels of radiation and radioactive materials in the site environs.
2. Evaluate the relationship between quantities of radioactive material released from the plant and resultant radiation doses to individuals from principal pathways of exposure.

B. Implementation of the Objectives

The implementation of the objectives is accomplished by:

1. Identifying significant exposure pathways.
2. Establishing baseline radiological data of media within those pathways.
3. Continuously monitoring those media before and during Station operation to assess Station radiological effects (if any) on man and the environment.

III. Program Description

A. Sample Collection

Samples for the LSCS REMP were collected for Exelon Nuclear by

Environmental Inc. (Midwest Labs). This section describes the general collection methods used by Environmental Inc. (Midwest Labs) to obtain environmental samples for the LSCS REMP in 2011. Sample locations and descriptions can be found in Tables B-1 and B-2, and Figures B-1 through B-4, Appendix B.

Aquatic Environment

The aquatic environment was evaluated by performing radiological analyses on samples of surface water, ground/well water, fish, and sediment. Two gallon water samples were collected weekly from two surface water locations (L-21 and L-40) and composited for monthly and quarterly required analyses. Control location was L-21. Two ground/well water locations (L-27 and L-28) were also grab sampled quarterly. All samples were collected in new unused plastic bottles, which were rinsed with source water prior to collection. Fish samples were collected semiannually at three locations, L-34, L-35 and L-36 (Control). Sediment samples composed of recently deposited substrate were collected at three locations semiannually, L-21 (Control), L-40 and L-41.

Atmospheric Environment

The atmospheric environment was evaluated by performing radiological analyses on samples of air particulate and airborne iodine. Airborne iodine and particulate samples were collected and analyzed weekly at nine locations (L-01, L-03, L-04, L-05, L-06, L-07, L-08, L-10 and L-11). The control location was L-10. Airborne iodine and particulate samples were obtained at each location, using a vacuum pump with charcoal and glass fiber filters attached. The pumps were run continuously and sampled air at the rate of approximately one cubic foot per minute. The air filters and air iodine samples were replaced weekly and sent to the laboratory for analysis.

Terrestrial Environment

The terrestrial environment was evaluated by performing radiological analyses on samples of milk and food product. Samples were collected biweekly at one milk location (L-42) from March through October, and monthly from November through February. The control location was L-42. All samples were collected in new unused two gallon plastic bottles from the bulk tank at each location, preserved with sodium bisulfite, and shipped promptly to the laboratory.

Food products were collected annually in September at five locations (L-Quad C, L-Quad 1, L-Quad 2, L-Quad 3, and L-Quad 4). The control location was L-Quad C. Various types of samples were collected and placed in new unused plastic bags, and sent to the laboratory for analysis.

Ambient Gamma Radiation

Direct radiation measurements were made using CaF₂ thermoluminescent dosimeters (TLD). Each location consisted of 2 TLD sets. The TLD locations were placed on and around the LSCS site as follows:

An inner ring consisting of 16 locations (L-101, L-102, L-103, L-104, L-105, L-106, L-107, L-108, L-109, L-110, L-111B, L-112, L-113A, L-114, L-115 and L-116) near and within the site perimeter representing fence post doses (i.e., at locations where the doses will be potentially greater than maximum annual off-site doses) from LSCS release.

An outer ring consisting of 16 locations (L-201, L-202, L-203, L-204, L-205, L-206, L-207, L-208, L-209, L-210, L-211, L-212, L-213, L-214, L-215 and L-216) extending to approximately 5 miles from the site designed to measure possible exposures to close-in population.

An other set consisting of eight locations (L-01, L-03, L-04, L-05, L-06, L-07, L-08 and L-11).

The balance of one location (L-10) representing the control area.

The specific TLD locations were determined by the following criteria:

1. The presence of relatively dense population;
2. Site meteorological data taking into account distance and elevation for each of the sixteen–22 1/2 degree sectors around the site, where estimated annual dose from LSCS, if any, would be most significant;
3. On hills free from local obstructions and within sight of the vents (where practical);
4. And near the closest dwelling to the vents in the prevailing downwind direction.

(Two TLDs – each comprised of two CaF₂ thermoluminescent phosphors enclosed in plastic – were placed at each location approximately six feet above ground level. The TLDs were exchanged quarterly and sent to Mirion Technologies for analysis.)

B. Sample Analysis

This section describes the general analytical methodologies used by TBE and Environmental Inc (Midwest Labs) to analyze the environmental

samples for radioactivity for the LSCS REMP in 2011. The analytical procedures used by the laboratories are listed in Table B-2.

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

1. Concentrations of beta emitters in surface water and air particulates.
2. Concentrations of gamma emitters in ground/well and surface water, air particulates, milk, fish, sediment and vegetation.
3. Concentrations of tritium in ground/well and surface water.
4. Concentrations of I-131 in air and milk.
5. Ambient gamma radiation levels at various site environs.

C. Data Interpretation

The radiological and direct radiation data collected prior to LaSalle County Station becoming operational were used as a baseline with which these operational data were compared. For the purpose of this report, LaSalle County Station was considered operational at initial criticality. In addition, data were compared to previous years' operational data for consistency and trending. Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

The lower limit of detection (LLD) is defined as the smallest concentration of radioactive material in a sample that would yield a net count (above background) that would be detected with only a 5% probability of falsely concluding that a blank observation represents a "real" signal. The LLD is intended as a before the fact estimate of a system (including instrumentation, procedure and sample type) and not as an after the fact criteria for the presence of activity. All analyses were designed to achieve the required LSCS detection capabilities for environmental sample analysis.

The minimum detectable concentration (MDC) is defined above with the exception that the measurement is an after the fact estimate of the presence of activity.

2. Net Activity Calculation and Reporting of Results

Net activity for a sample was calculated by subtracting background activity from the sample activity. Since the REMP measures extremely small changes in radioactivity in the environment, background variations may result in sample activity being lower than the background activity effecting a negative number. An MDC was reported in all cases where positive activity was not detected.

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

For surface water and food product 12 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Zr-95, Nb-95, I-131, Cs-134, Cs-137, Ba-140, and La-140 were reported.

For ground/well water, fish, sediment, air particulate and milk 11 nuclides, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Zr-95, Nb-95, Cs-134, Cs-137, Ba-140, and La-140 were reported.

Means and standard deviations of the results were calculated. The standard deviations represent the variability of measured results for different samples rather than single analysis uncertainty.

D. Program Exceptions

For 2011 the LSCS REMP had a sample recovery rate in excess of 99%. Sample anomalies and missed samples are listed in the tables below:

Table D-1 LISTING OF SAMPLE ANOMALIES

| Sample Type | Location Code | Collection Date | Reason |
|-------------|---------------|-----------------|----------------------------------------------------------------|
| A/I | L-10 | 02/03/11 | Low reading of 131.1 hours due to a blown fuse; fuse replaced. |
| A/I | L-06 | 06/16/11 | Low reading of 153.9 hours due to a blown fuse; fuse replaced. |
| A/I | L-05 | 06/23/11 | Low reading of 139.3 hours due to a blown fuse; fuse replaced. |
| A/I | L-05 | 06/29/11 | Low reading of 28.5 hours due to a blown fuse; fuse replaced. |

Table D-1 LISTING OF SAMPLE ANOMALIES (continued)

| Sample Type | Location Code | Collection Date | Reason |
|----------------------|-------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------|
| A/I | L-04 | 07/14/11 | Low reading of 168.8 hours due to a blown fuse; fuse replaced. |
| A/I | L-05 | 07/14/11 | Low reading of 167.2 hours due to a blown fuse; fuse replaced. |
| A/I | L-05 | 07/21/11 | No apparent reason for low reading of 164.5 hours. |
| A/I | L-07 | 07/21/11 | No apparent reason for low reading of 167.9 hours. |
| A/I | L-05 | 07/28/11 | No apparent reason for low reading of 162.4 hours. |
| A/I | L-06 | 07/28/11 | No apparent reason for low reading of 167.3 hours. |
| A/I | L-05 | 08/25/11 | No apparent reason for low reading of 166.8 hours. |
| A/I | L-06 | 08/25/11 | No apparent reason for low reading of 164.8 hours. |
| A/I | L-06 | 09/01/11 | No apparent reason for low reading of 97.8 hours. |
| A/I | L-05 | 09/08/11 | No apparent reason for low reading of 163.5 hours. |
| A/I | L-04 | 09/15/11 | No apparent reason for low reading of 164.8 hours. |
| Vegetation (Cabbage) | Control, Quad-1, Quad-3 | 09/22/11 | TBE notified EIML that vegetables were missing on 09/27/11; Fedex trace found cooler on 09/30/11 and forwarded to TBE. |

Table D-2 LISTING OF MISSED SAMPLES

| Sample Type | Location Code | Collection Date | Reason |
|-------------|---------------|-----------------|-----------------------------------------|
| TLD | L205-3 | 06/29/11 | TLD found broken at time of collection. |

Each program exception was reviewed to understand the causes of the program exception. Occasional equipment breakdowns and power outages were unavoidable.

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

E. Program Changes

There were no program changes in 2011.

IV. Results and Discussion

A. Aquatic Environment

1. Surface Water

Samples were taken weekly and composited monthly at two locations (L-21 and L-40). Of these locations only L-40 located downstream, could be affected by LaSalle's effluent releases. The following analyses were performed.

Gross Beta

Samples from all locations were analyzed for concentrations of gross beta (Table C-1.1, Appendix C). Gross beta was detected in all samples with a range of 4.6 to 9.5 pCi/l. Concentrations detected were consistent with those detected in previous years (Figure C-1, Appendix C). The required LLD was met.

Tritium

Quarterly composites of weekly collections were analyzed for tritium activity (Table C-1.2, Appendix C). Tritium was detected in one of eight samples at a concentration of 212 pCi/l. Concentrations detected were consistent with those detected in previous years (Figure C-2, Appendix C). The 2000 pCi/L OCDM and contractually required 200 pCi/L LLDs were met.

Gamma Spectrometry

Samples from both locations were analyzed for gamma emitting nuclides (Table C-1.3, Appendix C). No nuclides were detected, and all required LLDs were met.

2. Ground/well Water

Quarterly grab samples were collected at two locations (L-27 and L-28). Wells 4, 5, 6 are associated with L-28. L-27 and L-28 well 6 could be affected by LaSalle's effluent releases. The following analyses were performed:

Tritium

Quarterly grab samples from the locations were analyzed for tritium activity (Table C-II.1, Appendix C). No tritium was detected and the 2000 pCi/L OCDM and contractually required 200 pCi/L LLDs were met.

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C-II.2, Appendix C). No nuclides were detected, and all required LLDs were met.

3. Fish

Fish samples were collected at three locations (L-34, L-35 and L-36) semiannually. Locations L-34 and L-35 could be affected by LaSalle's effluent releases. The following analysis was performed:

Gamma Spectrometry

The edible portion of fish samples from both locations was analyzed for gamma emitting nuclides (Table C-III.1, Appendix C). Naturally occurring K-40 was found at all stations and ranged from 1,970 to 4,480 pCi/kg wet. No fission or activation products were found.

4. Sediment

Aquatic sediment samples were collected at three locations (L-21, L-40 and L-41) semiannually. Locations L-40 and L-41, located downstream, could be affected by LaSalle's effluent releases. The following analysis was performed:

Gamma Spectrometry

Sediment samples from both locations were analyzed for gamma emitting nuclides (Table C-IV.1, Appendix C). Nuclides detected were naturally occurring K-40 and Cs-137.

Potassium-40 was found at all stations and ranged from 11,700 to 18,900 pCi/kg dry. Cs-137 was found in one sample at a concentration of 194 pCi/kg dry. The activity detected was consistent with those detected in previous years and is likely due to fallout from above-ground nuclear weapons testing. No LaSalle fission or activation products were found.

B. Atmospheric Environment

1. Airborne

a. Air Particulates

Continuous air particulate samples were collected from nine locations on a weekly basis. The nine locations were separated into four groups: Group I (onsite) represents locations within the LSCS site boundary (L-03 and L-05), Group II (near site) represents the locations near the LSCS site (L-01 and L-06), Group III (far field) represents the control location at an intermediate distance from LSCS (L-04, L-07, L-08 and L-11) and Group IV (Control) represents the control location at a remote distance (L-10). The following analyses were performed:

Gross Beta

Weekly samples were analyzed for concentrations of beta emitters (Table C-V.1 and C-V.2, Appendix C). Detectable gross beta activity was observed at all locations. Comparison of results among the four groups aid in determining the effects, if any, resulting from the operation of LSCS. The results from the OnSite locations (Group I) ranged from 8 to 46 E-3 pCi/m³ with a mean of 21 E-3 pCi/m³. The results from the near site location (Group II) ranged from 8 to 42 E-3 pCi/m³ with a mean of 21 E-3 pCi/m³. The results from the far field locations (Group III) ranged from 6 to 44 E-3 pCi/m³ with a mean of 21 E-3 pCi/m³. The results from the Control location (Group IV) ranged from 8 to 39 E-3 pCi/m³ with a mean of 22 E-3 pCi/m³. Comparison of the 2011 air particulate data with previous years data indicate no effects from the operation of LSCS (Figures C-3 through C-7, Appendix C). In addition a comparison of the weekly mean values for 2011 indicate no notable differences among the three groups.

Gamma Spectrometry

Weekly samples were composited quarterly and analyzed for gamma emitting nuclides (Table C–V.3, Appendix C). Naturally occurring Be-7 due to cosmic ray activity was detected in all samples. These values ranged from 63 to 203 E–3 pCi/m³. Naturally occurring K-40 was not detected in any samples. All other nuclides were less than the MDC. Additional sampling occurred in the weeks immediately following the Fukushima event in 2011. All nuclides were less than the MDC.

b. Airborne Iodine

Continuous air samples were collected from nine locations (L-01, L-03, L-04, L-05, L-06, L-07, L-08, L-10, and L-11) and analyzed weekly for I-131 (Table C–VI.1, Appendix C). No nuclides were detected, with the exception of 21 samples which were positive for I-131. These positive results are directly attributed to the Fukushima event in March of 2011. All required LLDs were met.

2. Terrestrial

a. Milk

Samples were collected from one location (L-42) biweekly March through October and monthly November through February. The following analyses were performed:

Iodine-131

Milk samples from the location were analyzed for concentrations of I-131 (Table C–VII.1, Appendix C). No nuclides were detected, and all required LLDs were met.

Gamma Spectrometry

Each milk sample was analyzed for concentrations of gamma emitting nuclides (Table C–VII.2, Appendix C).

Naturally occurring K-40 activity was found in all samples and ranged from 1,130 to 1,490 pCi/l. No other nuclides were detected, and all required LLDs were met.

b. Food Products

Food product samples were collected at five locations (L-Quad C, L-Quad 1, L-Quad 2, L-Quad 3 and L-Quad 4) when available. Four locations, (L-Quad 1, L-Quad 2, L-Quad 3 and L-Quad 4) could be affected by LaSalle's effluent releases. The following analysis was performed:

Gamma Spectrometry

Samples from all locations were analyzed for gamma emitting nuclides (Table C–VIII.1, Appendix C). No nuclides were detected, and all required LLDs were met.

C. Ambient Gamma Radiation

Ambient gamma radiation levels were measured utilizing Panasonic 814 (CaF₂) thermoluminescent dosimeters. Forty-one TLD locations were established around the site. Results of TLD measurements are listed in Tables C–IX.1 to C–IX.3, Appendix C.

Most TLD measurements were below 30 mR/standard month, with a range of 18 to 42 mR/quarter. A comparison of the Inner Ring, Outer Ring, and Other data to the Control Location data, indicate that the ambient gamma radiation levels from the Control Location L-10 were comparable.

D. Land Use Survey

A Land Use Survey conducted during the August 2011 growing season around the LaSalle County Station (LSCS) was performed by Environmental Inc. (Midwest Labs) for Exelon Nuclear to comply with Radiological Effluent Control 12.5.2 of the LaSalle's Offsite Dose Calculation Manual. The purpose of the survey was to document the nearest resident, milk producing animal and garden of greater than 500 ft² in each of the sixteen 22 ½ degree sectors around the site. The distance and direction of all locations from the LSCS reactor buildings were positioned using Global Positioning System (GPS) technology. There were no changes required to the LSCS REMP as a result of this survey. The results of this survey are summarized below.

| Distance in Miles from the LSCS Reactor Buildings | | | |
|---------------------------------------------------|--------------------|--------------------|--------------------|
| Sector | Residence Miles | Livestock Miles | Milk Farm Miles |
| A N | 3.9 | 4.0 | - |
| B NNE | 1.6 | 1.7 | - |
| C NE | 2.1 | 3.5 | - |
| D ENE | 3.3 | 3.8 | - |
| E E | 3.2 | - | 14.2 |
| F ESE | 1.4 | - | - |
| G SE | 1.7 | 4.7 | - |
| H SSE | 1.8 | 4.7 | - |
| J S | 1.5 | 4.7 | - |
| K SSW | 0.7 | - | - |
| L SW | 1.0 | 5.8 | - |
| M WSW | 1.5 | 1.5 | - |
| N W | 1.5 | 3.0 | - |
| P WNW | 0.9 | 3.0 | - |
| Q NW | 1.8 | 4.0 | - |
| R NNW | 1.7 | 4.6 | - |

E. Summary of Results – Inter-Laboratory Comparison Program

The primary and secondary laboratories analyzed Performance Evaluation (PE) samples of air particulate, air iodine, milk, soil, vegetation and water matrices (Appendix D). The PE samples, supplied by Analytics Inc., Environmental Resource Associates (ERA) and DOE's Mixed Analyte Performance Evaluation Program (MAPEP), were evaluated against the following pre-set acceptance criteria:

1. Analytics Evaluation Criteria

Analytics' evaluation report provides a ratio of laboratory results and Analytics' known value. Since flag values are not assigned by Analytics, TBE-ES evaluates the reported ratios based on internal QC requirements, which are based on the DOE MAPEP criteria.

2. ERA Evaluation Criteria

ERA's evaluation report provides an acceptance range for control and warning limits with associated flag values. ERA's acceptance limits are established per the USEPA, NELAC, state specific PT program requirements or ERA's SOP for the Generation of Performance Acceptance Limits, as applicable. The acceptance limits are either determined by a regression equation specific to each analyte or a fixed percentage limit promulgated under the appropriate regulatory document.

3. DOE Evaluation Criteria

MAPEP's evaluation report provides an acceptance range with associated flag values.

The MAPEP defines three levels of performance: Acceptable (flag = "A"), Acceptable with Warning (flag = "W"), and Not Acceptable (flag = "N"). Performance is considered acceptable when a mean result for the specified analyte is $\pm 20\%$ of the reference value. Performance is acceptable with warning when a mean result falls in the range from $\pm 20\%$ to $\pm 30\%$ of the reference value (i.e., $20\% < \text{bias} < 30\%$). If the bias is greater than 30%, the results are deemed not acceptable.

For the primary laboratory, 14 out of 18 analytes met the specified acceptance criteria. Four analytes did not meet the specified acceptance criteria for the following reason:

1. Teledyne Brown Engineering's Analytics March 2011 Cr-51 in milk result of 398 pCi/L was higher than the known value of 298 pCi/L, resulting in a found to known ratio of 1.34. NCR 11-13 was initiated to investigate this failure. There was a slightly high bias in all the gamma activities. The June gamma results in milk did not show a high bias. No further action was required.
2. Teledyne Brown Engineering's ERA May 2011 Gross Alpha in water result of 64.1 pCi/L was higher than the known value of 50.1 pCi/L, which exceeded the upper control limit of 62.9 pCi/L. NCR 11-08 was initiated to investigate this failure. The solids on the planchet exceeded 100 mg, which was beyond the range of the efficiency curve.

Teledyne Brown Engineering's MAPEP March 2011 Gross Alpha in air particulate result of 0.101 Bq/sample was lower than the known value of 0.659 Bq/sample, which exceeded the lower control limit of 0.198 Bq/sample. NCR 11-11 was initiated to investigate this failure. The air particulate filter was counted on the wrong side.
3. Teledyne Brown Engineering's ERA November 2011 Sr-89 in water result of 81.0 pCi/L was higher than the known value of 69.7 pCi/L, which exceeded the upper control limit of 77.9 pCi/L. NCR 11-16 was initiated to investigate this failure. The TBE reported value to known ratio of 1.16 fell within the acceptable range of $\pm 20\%$, which TBE considers acceptable.
4. Teledyne Brown Engineering's MAPEP March 2011 Sr-90 in soil, air particulate and vegetation were non-reports that were evaluated as failed. NCR 11-11 was initiated to investigate these failures.

MAPEP evaluated the non-reports as failed due to not reporting a previously reported analyte.

For the secondary laboratory, Environmental, Inc., 12 out of 14 analytes met the specified acceptance criteria.

1. Environmental Inc.'s ERA October 2011 Cs-134 in water result of 38.8 pCi/L was higher than the known value of 33.4 pCi/L, which exceeded the upper control limit of 36.7 pCi/L. The sample was reanalyzed. The reanalyzed result of 32.9 was acceptable.
2. Environmental Inc.'s MAPEP February 2011 Sr-90 in air particulate result of 1.89 Bq/sample was higher than the known value of 1.36 Bq/sample, which exceeded the upper control limit of 1.77 Bq/sample. No errors were found in the calculation or procedure. The reanalyzed result of 1.73 Bq/sample was acceptable.

Environmental Inc.'s MAPEP August 2011 Sr-90 in soil result of 219.4 Bq/kg, less than the known value of 320 Bq/kg, was below the lower control limit of 224 Bq/kg. The sample was reanalyzed in triplicate through a strontium column. The reanalyzed result of 304.2 Bq/kg was acceptable.

The Inter-Laboratory Comparison Program provides evidence of "in control" counting systems and methods, and that the laboratories are producing accurate and reliable data.

APPENDIX A

RADIOLOGICAL ENVIRONMENTAL MONITORING REPORT SUMMARY

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE LOCATION OF FACILITY: MARSEILLES IL | | DOCKET NUMBER: 50-373 & 50-374 | | REPORTING PERIOD: ANNUAL 2011 | | INDICATOR CONTROL LOCATION WITH HIGHEST ANNUAL MEAN (M) | | NUMBER OF NONROUTINE REPORTED MEASUREMENTS | |
|------------------------------------------------------------------|-----------------------------|--------------------------------|-----------------------------------------|-------------------------------|--------------------------|---------------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------|------------------------|
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LLD) | LOCATIONS MEAN (M) (F) | RANGE | MEAN (M) (F) | RANGE | STATION # NAME | DISTANCE AND DIRECTION |
| SURFACE WATER (PCI/LITER) | GR-B | 24 | 4 | 7.4 (12/12) (6.2/9.5) | 7.1 (12/12) (4.6/8.6) | 7.4 (12/12) (6.2/9.5) | L-40 INDICATOR ILLINOIS RIVER - DOWNSTREAM 5.2 MILES NNW OF SITE | 0 | |
| | H-3 | 8 | 200 | 212 (1/4) | <LLD | 212 (1/4) | L-40 INDICATOR ILLINOIS RIVER - DOWNSTREAM 5.2 MILES NNW OF SITE | 0 | |
| | GAMMA MN-54 | 24 | 15 | <LLD | <LLD | - | | 0 | |
| | CO-58 | | 15 | <LLD | <LLD | - | | 0 | |
| | FE-59 | | 30 | <LLD | <LLD | - | | 0 | |
| | CO-60 | | 15 | <LLD | <LLD | - | | 0 | |
| | ZN-65 | | 30 | <LLD | <LLD | - | | 0 | |
| | NB-95 | | 15 | <LLD | <LLD | - | | 0 | |

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE | | DOCKET NUMBER: 50-373 & 50-374 | | | | | | |
|----------------------------------------------------------|-----------------------------------|------------------------------------|--------------------------------------------------|--------------------------|--------------------------------------|---------------------------------------|---------------------------------------------|-----------------------------------------------------|
| LOCATION OF FACILITY: MARSEILLES IL | | REPORTING PERIOD: ANNUAL 2011 | | | | | | |
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LLD) | INDICATOR CONTROL | | LOCATION WITH HIGHEST ANNUAL MEAN (M) | | NUMBER OF NONROUTINE REPORTED MEASUREMENTS |
| | | | | MEAN (M) (F) RANGE | LOCATION MEAN (M) (F) RANGE | MEAN (M) (F) RANGE | STATION # NAME DISTANCE AND DIRECTION | |
| SURFACE WATER (PC/LITER) | ZR-95 | | 30 | <LLD | <LLD | - | <LLD | 0 |
| | I-131 | | 15 | <LLD | <LLD | - | <LLD | 0 |
| | CS-134 | | 15 | <LLD | <LLD | - | <LLD | 0 |
| | CS-137 | | 18 | <LLD | <LLD | - | <LLD | 0 |
| | BA-140 | | 60 | <LLD | <LLD | - | <LLD | 0 |
| | LA-140 | | 15 | <LLD | <LLD | - | <LLD | 0 |
| GROUND WATER (PC/LITER) | H-3 | 12 | 200 | <LLD | <LLD | - | <LLD | 0 |
| | GAMMA MIN-54 | 12 | 15 | <LLD | <LLD | - | <LLD | 0 |

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE | | DOCKET NUMBER: 50-373 & 50-374 | | | | | |
|----------------------------------------------------------|-----------------------------------|------------------------------------|--------------------------------------------------|---------------------------------------------------------|---------------------------------------|---------------------------------------------|-----------------------------------------------------|
| LOCATION OF FACILITY: MARSEILLES IL | | REPORTING PERIOD: ANNUAL 2011 | | | | | |
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LLD) | INDICATOR CONTROL LOCATION WITH HIGHEST ANNUAL MEAN (M) | | STATION # NAME DISTANCE AND DIRECTION | NUMBER OF NONROUTINE REPORTED MEASUREMENTS |
| | | | | LOCATIONS MEAN (M) (F) RANGE | LOCATIONS MEAN (M) (F) RANGE | | |
| GROUND WATER (PCI/LITER) | CO-58 | 15 | <LLD | <LLD | - | | 0 |
| | FE-59 | 30 | <LLD | <LLD | - | | 0 |
| | CO-60 | 15 | <LLD | <LLD | - | | 0 |
| | ZN-65 | 30 | <LLD | <LLD | - | | 0 |
| | NB-95 | 15 | <LLD | <LLD | - | | 0 |
| | ZR-95 | 30 | <LLD | <LLD | - | | 0 |
| | CS-134 | 15 | <LLD | <LLD | - | | 0 |
| | CS-137 | 18 | <LLD | <LLD | - | | 0 |

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE | | DOCKET NUMBER: 50-373 & 50-374 | | | | | |
|----------------------------------------------------------|-----------------------------------|------------------------------------|--------------------------------------------------|---------------------------------------------------------|---------------------------------------|---------------------------------------------|-----------------------------------------------------|
| LOCATION OF FACILITY: MARSEILLES IL | | REPORTING PERIOD: ANNUAL 2011 | | | | | |
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LLD) | INDICATOR CONTROL LOCATION WITH HIGHEST ANNUAL MEAN (M) | | STATION # NAME DISTANCE AND DIRECTION | NUMBER OF NONROUTINE REPORTED MEASUREMENTS |
| | | | | LOCATIONS MEAN (M) (F) RANGE | LOCATIONS MEAN (M) (F) RANGE | | |
| GROUND WATER (PCI/LITER) | BA-140 | | 60 | <LLD | <LLD | - | 0 |
| | LA-140 | | 15 | <LLD | <LLD | - | 0 |
| FISH (PCI/KG WET) | GAMMA MN-54 | 12 | 130 | <LLD | <LLD | - | 0 |
| | CO-58 | | 130 | <LLD | <LLD | - | 0 |
| | FE-59 | | 260 | <LLD | <LLD | - | 0 |
| | CO-60 | | 130 | <LLD | <LLD | - | 0 |
| | ZN-65 | | 260 | <LLD | <LLD | - | 0 |
| | NB-95 | | NA | <LLD | <LLD | - | 0 |

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE | | DOCKET NUMBER: 50-373 & 50-374 | | | | | |
|----------------------------------------------------------|-----------------------------------|------------------------------------|--------------------------------------------------|---------------------------------------------------------|--------------------------|---------------------------------------------|-----------------------------------------------------|
| LOCATION OF FACILITY: MARSEILLES IL | | REPORTING PERIOD: ANNUAL 2011 | | | | | |
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LLD) | INDICATOR CONTROL LOCATION WITH HIGHEST ANNUAL MEAN (M) | | STATION # NAME DISTANCE AND DIRECTION | NUMBER OF NONROUTINE REPORTED MEASUREMENTS |
| | | | | MEAN (M) (F) RANGE | MEAN (M) (F) RANGE | | |
| FISH (PCI/KG WET) | ZR-95 | | NA | <LLD | <LLD | - | 0 |
| | CS-134 | | 130 | <LLD | <LLD | - | 0 |
| | CS-137 | | 150 | <LLD | <LLD | - | 0 |
| | BA-140 | | NA | <LLD | <LLD | - | 0 |
| | LA-140 | | NA | <LLD | <LLD | - | 0 |
| SEDIMENT (PCI/KG DRY) | GAMMA MN-54 | 6 | NA | <LLD | <LLD | - | 0 |
| | CO-58 | | NA | <LLD | <LLD | - | 0 |
| | FE-59 | | NA | <LLD | <LLD | - | 0 |

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE | | DOCKET NUMBER: 50-373 & 50-374 | | | | | |
|----------------------------------------------------------|-----------------------------------|------------------------------------|--------------------------------------------------|---------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------|
| LOCATION OF FACILITY: MARSELLES IL | | REPORTING PERIOD: ANNUAL 2011 | | | | | |
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LTD) | INDICATOR CONTROL LOCATION WITH HIGHEST ANNUAL MEAN (M) | | STATION # NAME DISTANCE AND DIRECTION | NUMBER OF NONROUTINE REPORTED MEASUREMENTS |
| | | | | MEAN (M) (F) RANGE | MEAN (M) (F) RANGE | | |
| SEDIMENT (PC/KG DRY) | CO-60 | | NA | <LLD | <LLD | - | 0 |
| | ZN-65 | | NA | <LLD | <LLD | - | 0 |
| | NB-95 | | NA | <LLD | <LLD | - | 0 |
| | ZR-95 | | NA | <LLD | <LLD | - | 0 |
| | CS-134 | | 150 | <LLD | <LLD | - | 0 |
| | CS-137 | | 180 | <LLD | 194 (1/2) | 194 (1/2) L-21 CONTROL ILLINOIS RIVER AT SENECA - UPSTREAM 4.0 MILES NE OF SITE | 0 |
| | BA-140 | | NA | <LLD | <LLD | - | 0 |
| | LA-140 | | NA | <LLD | <LLD | - | 0 |

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE | | DOCKET NUMBER: 50-373 & 50-374 | | | | | | | |
|----------------------------------------------------------|-----------------------------------|------------------------------------|--------------------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------------------------|---------------------------------------------|-----------------------------------------------------|
| LOCATION OF FACILITY: MARSEILLES IL | | REPORTING PERIOD: ANNUAL 2011 | | | | | | | |
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LLD) | INDICATOR CONTROL | | LOCATION WITH HIGHEST ANNUAL MEAN (M) | | STATION # NAME DISTANCE AND DIRECTION | NUMBER OF NONROUTINE REPORTED MEASUREMENTS |
| | | | | LOCATIONS MEAN (M) (F) RANGE | LOCATIONS MEAN (M) (F) RANGE | MEAN (M) (F) RANGE | MEAN (M) (F) RANGE | | |
| AIR PARTICULATE (E-3 PCI/CU.METER) | GR-B | 468 | 10 | 21 (414/416) (6/46) | 22 (51/52) (8/39) | 22 (52/52) (8/42) | L-01 INDICATOR NEARSITE 1 1.5 MILES NNW OF SITE | 0 | |
| | GAMMA MN-54 | 36 | NA | <LLD | <LLD | - | | 4 | |
| | CO-58 | | NA | <LLD | <LLD | - | | 4 | |
| | FE-59 | | NA | <LLD | <LLD | - | | 4 | |
| | CO-60 | | NA | <LLD | <LLD | - | | 4 | |
| | ZN-65 | | NA | <LLD | <LLD | - | | 4 | |
| | NB-95 | | NA | <LLD | <LLD | - | | 4 | |
| | ZR-95 | | NA | <LLD | <LLD | - | | 4 | |

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE LOCATION OF FACILITY: MARSEILLES IL | | DOCKET NUMBER: 50-373 & 50-374 | | REPORTING PERIOD: ANNUAL 2011 | | INDICATOR CONTROL LOCATION WITH HIGHEST ANNUAL MEAN (M) | | NUMBER OF NONROUTINE REPORTED MEASUREMENTS | | |
|------------------------------------------------------------------|-----------------------------|--------------------------------|-----------------------------------------|-------------------------------|-------|---------------------------------------------------------|----------------------|-------------------------------------------------|------------------------|---|
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LLD) | MEAN (M) (F) | RANGE | MEAN (M) (F) | RANGE | STATION # NAME | DISTANCE AND DIRECTION | |
| AIR PARTICULATE (E-3 PCI/CU.METER) | CS-134 | | 50 | <LLD | <LLD | <LLD | <LLD | - | - | 4 |
| | CS-137 | | 60 | <LLD | <LLD | <LLD | <LLD | - | - | 4 |
| | BA-140 | | NA | <LLD | <LLD | <LLD | <LLD | - | - | 4 |
| | LA-140 | | NA | <LLD | <LLD | <LLD | <LLD | - | - | 4 |
| AIR IODINE (E-3 PCI/CU.METER) | GAMMA I-131 | 468 | 70 | 111 (18/416) (62/179) | NA | 72 (3/52) (59/90) | 144 (2/52) (108/179) | L-06 INDICATOR NEARSITE 6 0.4 MILES WSW OF SITE | | 0 |
| MILK (PC/LITER) | I-131 | 19 | 1 | NA | <LLD | <LLD | <LLD | - | - | 2 |
| | GAMMA MN-54 | 19 | NA | NA | <LLD | <LLD | <LLD | - | - | 2 |
| | CO-58 | | NA | NA | <LLD | <LLD | <LLD | - | - | 2 |

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE | | DOCKET NUMBER: 50-373 & 50-374 | | | | | | |
|----------------------------------------------------------|-----------------------------------|------------------------------------|--------------------------------------------------|--------------------------|--------------------------------------|---------------------------------------------|--|-----------------------------------------------------|
| LOCATION OF FACILITY: MARSEILLES IL | | REPORTING PERIOD: ANNUAL 2011 | | | | | | |
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LLD) | INDICATOR CONTROL | | LOCATION WITH HIGHEST ANNUAL MEAN (M) | | NUMBER OF NONROUTINE REPORTED MEASUREMENTS |
| | | | | MEAN (M) (F) RANGE | LOCATION MEAN (M) (F) RANGE | STATION # NAME DISTANCE AND DIRECTION | | |
| MILK (PC/LITER) | FE-59 | NA | NA | NA | <LLD | - | | 2 |
| | CO-60 | NA | NA | NA | <LLD | - | | 2 |
| | ZN-65 | NA | NA | NA | <LLD | - | | 2 |
| | NB-95 | NA | NA | NA | <LLD | - | | 2 |
| | ZR-95 | NA | NA | NA | <LLD | - | | 2 |
| | CS-134 | 15 | NA | NA | <LLD | - | | 2 |
| | CS-137 | 18 | NA | NA | <LLD | - | | 2 |
| | BA-140 | 60 | NA | NA | <LLD | - | | 2 |

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE | | DOCKET NUMBER: 50-373 & 50-374 | | | | | |
|----------------------------------------------------------|-----------------------------------|------------------------------------|--------------------------------------------------|---------------------------------------------------------|--------------------------------------|---------------------------------------------|-----------------------------------------------------|
| LOCATION OF FACILITY: MARSEILLES IL | | REPORTING PERIOD: ANNUAL 2011 | | | | | |
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LLD) | INDICATOR CONTROL LOCATION WITH HIGHEST ANNUAL MEAN (M) | | STATION # NAME DISTANCE AND DIRECTION | NUMBER OF NONROUTINE REPORTED MEASUREMENTS |
| | | | | LOCATIONS MEAN (M) (F) RANGE | LOCATION MEAN (M) (F) RANGE | | |
| MILK (PCI/LITER) | LA-140 | | 15 | NA | <LLD | - | 2 |
| VEGETATION (PCI/KG WET) | GAMMA MIN-54 | 10 | NA | <LLD | <LLD | - | 0 |
| | CO-58 | | NA | <LLD | <LLD | - | 0 |
| | FE-59 | | NA | <LLD | <LLD | - | 0 |
| | CO-60 | | NA | <LLD | <LLD | - | 0 |
| | ZN-65 | | NA | <LLD | <LLD | - | 0 |
| | NB-95 | | NA | <LLD | <LLD | - | 0 |
| | ZR-95 | | NA | <LLD | <LLD | - | 0 |

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

**TABLE A-1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM ANNUAL SUMMARY FOR
THE LASALLE COUNTY STATION, 2011**

| NAME OF FACILITY: LASALLE | | DOCKET NUMBER: 50-373 & 50-374 | | | | | |
|----------------------------------------------------------|-----------------------------------|------------------------------------|--------------------------------------------------|---------------------------------------------------------|---------------------------------------|---------------------------------------------|-----------------------------------------------------|
| LOCATION OF FACILITY: MARSEILLES IL | | REPORTING PERIOD: ANNUAL 2011 | | | | | |
| MEDIUM OR PATHWAY SAMPLED (UNIT OF MEASUREMENT) | TYPES OF ANALYSIS PERFORMED | NUMBER OF ANALYSIS PERFORMED | REQUIRED LOWER LIMIT OF DETECTION (LLD) | INDICATOR CONTROL LOCATION WITH HIGHEST ANNUAL MEAN (M) | | STATION # NAME DISTANCE AND DIRECTION | NUMBER OF NONROUTINE REPORTED MEASUREMENTS |
| | | | | LOCATIONS MEAN (M) (F) RANGE | LOCATIONS MEAN (M) (F) RANGE | | |
| VEGETATION (PCI/KG WET) | I-131 | | 60 | <LLD | <LLD | - | 0 |
| | CS-134 | | 60 | <LLD | <LLD | - | 0 |
| | CS-137 | | 80 | <LLD | <LLD | - | 0 |
| | BA-140 | | NA | <LLD | <LLD | - | 0 |
| | LA-140 | | NA | <LLD | <LLD | - | 0 |
| DIRECT RADIATION (MILLI-ROENTGEN/QTR.) | TLD-QUARTERLY | 335 | NA | 27 (327/327) (18/42) | 25 (8/8) (18/35) | 31 (4/4) (23/40) | 0 |
| | | | | | | L-215-4 INDICATOR 5.0 MILES NW | |

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

APPENDIX B

LOCATION DESIGNATION, DISTANCE & DIRECTION, AND SAMPLE COLLECTION & ANALYTICAL METHODS

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, LaSalle County Station, 2011

| Location | Location Description | Distance & Direction From Site |
|-----------------------------------------|-----------------------------------------------------------|--------------------------------|
| <u>A. Surface Water</u> | | |
| L-21 | Illinois River at Seneca, Upstream (control) | 4.0 miles NE |
| L-40 | Illinois River, Downstream (indicator) | 5.2 miles NNW |
| <u>B. Ground/Well Water</u> | | |
| L-27 | LSCS Onsite Well (indicator) | 0 miles at station |
| L-28-W4 | Marseilles Well (control) | 7.0 miles NNW |
| L-28-W5 | Marseilles Well (control) | 6.7 miles NNW |
| L-28-W6 | Marseilles Well (indicator) | 4.1 miles N |
| <u>C. Milk - bi-weekly / monthly</u> | | |
| L-42 | Biros Farm (control) | 14.2 miles E |
| <u>D. Air Particulates / Air Iodine</u> | | |
| L-01 | Nearsite 1 (indicator) | 1.5 miles NNW |
| L-03 | Onsite 3 (indicator) | 1.0 miles ENE |
| L-04 | Rte. 170 (indicator) | 3.2 miles E |
| L-05 | Onsite 5 (indicator) | 0.3 miles ESE |
| L-06 | Nearsite 6 (indicator) | 0.4 miles W |
| L-07 | Seneca (indicator) | 5.2 miles NNE |
| L-08 | Marseilles (indicator) | 6.0 miles NNW |
| L-10 | Streator (control) | 13.5 miles SW |
| L-11 | Ransom (indicator) | 6.0 miles S |
| <u>E. Fish</u> | | |
| L-34 | LaSalle Cooling Lake (indicator) | 2.0 miles E |
| L-35 | Marseilles Pool of Illinois River, Downstream (indicator) | 6.5 miles NNW |
| L-36 | Illinois River, Upstream of Discharge (control) | 4.3 miles NE |
| <u>F. Sediment</u> | | |
| L-21 | Illinois River at Seneca, Upstream (control) | 4.0 miles NE |
| L-40 | Illinois River, Downstream (indicator) | 5.2 miles NNW |
| L-41 | Illinois River, Downstream (indicator) | 4.6 miles N |
| <u>G. Food Products</u> | | |
| Quadrant 1 | Diane Partridge | 4.5 miles NE |
| Quadrant 2 | Mike and Gina Welbourne | 3.8 miles ESE |
| Quadrant 3 | Michael Olson | 1.5 miles WSW |
| Quadrant 4 | Robert Eisers | 4.5 miles NW |
| Control | Eugene Clements | 10.0 miles NW |

TABLE B-1: Radiological Environmental Monitoring Program - Sampling Locations, Distance and Direction, LaSalle County Station, 2011

| Location | Location Description | Distance & Direction From Site |
|-----------------------------------------|------------------------|--------------------------------|
| <u>H. Environmental Dosimetry - TLD</u> | | |
| <u>Inner Ring</u> | | |
| L-101-1 and -2 | | 0.5 miles N |
| L-102-1 and -2 | | 0.6 miles NNE |
| L-103-1 and -2 | | 0.7 miles NE |
| L-104-1 and -2 | | 0.8 miles ENE |
| L-105-1 and -2 | | 0.7 miles E |
| L-106-1 and -2 | | 1.4 miles ESE |
| L-107-1 and -2 | | 0.8 miles SE |
| L-108-1 and -2 | | 0.5 miles SSE |
| L-109-1 and -2 | | 0.6 miles S |
| L-110-1 and -2 | | 0.6 miles SSW |
| L-111b-1 and -2 | | 0.8 miles SW |
| L-112-1 and -2 | | 0.9 miles WSW |
| L-113a-1 and -2 | | 0.8 miles W |
| L-114-1 and -2 | | 0.9 miles WNW |
| L-115-1 and -2 | | 0.7 miles NW |
| L-116-1 and -2 | | 0.6 miles NNW |
| <u>Outer Ring</u> | | |
| L-201-3 and -4 | | 4.0 miles N |
| L-202-3 and -4 | | 3.6 miles NNE |
| L-203-1 and -2 | | 4.0 miles NE |
| L-204-1 and -2 | | 3.2 miles ENE |
| L-205-1 and -2 | | 3.2 miles ESE |
| L-205-3 and -4 | | 5.1 miles E |
| L-206-1 and -2 | | 4.3 miles SE |
| L-207-1 and -2 | | 4.5 miles SSE |
| L-208-1 and -2 | | 4.5 miles S |
| L-209-1 and -2 | | 4.0 miles SSW |
| L-210-1 and -2 | | 3.3 miles SW |
| L-211-1 and -2 | | 4.5 miles WSW |
| L-212-1 and -2 | | 4.0 miles W |
| L-213-3 and -4 | | 4.9 miles W |
| L-214-3 and -4 | | 5.1 miles WNW |
| L-215-3 and -4 | | 5.0 miles NW |
| L-216-3 and -4 | | 5.0 miles NNW |
| <u>Other</u> | | |
| L-01-1 and -2 | Nearsite 1 (indicator) | 1.5 miles NNW |
| L-03-1 and -2 | Onsite 3 (indicator) | 1.0 miles ENE |
| L-04-1 and -2 | Rte. 170 (indicator) | 3.2 miles E |
| L-05-1 and -2 | Onsite 5 (indicator) | 0.3 miles ESE |
| L-06-1 and -2 | Nearsite 6 (indicator) | 0.4 miles W |
| L-07-1 and -2 | Seneca (indicator) | 5.2 miles NNE |
| L-08-1 and -2 | Marseilles (indicator) | 6.0 miles NNW |
| L-11-1 and -2 | Ransom (indicator) | 6.0 miles S |
| <u>Control and Special Interest</u> | | |
| L-10-1 and -2 | Streator | 13.5 miles SW |

TABLE B-2: Radiological Environmental Monitoring Program – Summary of Sample Collection and Analytical Methods, LaSalle County Station, 2011

| Sample Medium | Analysis | Sampling Method | Analytical Procedure Number |
|-------------------|------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Surface Water | Gamma Spectroscopy | Monthly composite from weekly grab samples. | TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy |
| Surface Water | Gross Beta | Monthly composite from weekly grab samples. | TBE, TBE-2008 Gross Alpha and/or gross beta activity in various matrices Env. Inc., W(DS)-01 Determination of gross alpha and/or gross beta in water (dissolved solids or total residue) |
| Surface Water | Tritium | Quarterly composite from weekly grab samples. | TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method) |
| Ground/Well Water | Gamma Spectroscopy | Quarterly grab samples. | TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy |
| Ground/Well Water | Tritium | Quarterly grab samples. | TBE, TBE-2011 Tritium analysis in drinking water by liquid scintillation Env. Inc., T-02 Determination of tritium in water (direct method) |
| Fish | Gamma Spectroscopy | Semi-annual samples collected via electroshocking or other techniques | TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy |
| Sediment | Gamma Spectroscopy | Semi-annual grab samples | TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy |
| Air Particulates | Gross Beta | One-week composite of continuous air sampling through glass fiber filter paper | TBE, TBE-2008 Gross Alpha and/or gross beta activity in various matrices Env. Inc., AP-02 Determination of gross alpha and/or gross beta in air particulate filters |
| Air Particulates | Gamma Spectroscopy | Quarterly composite of each station | TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy |
| Air Iodine | Gamma Spectroscopy | Bi-weekly composite of continuous air sampling through charcoal filter | TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., I-131-02 Determination of I-131 in charcoal canisters by gamma spectroscopy (batch method) |
| Milk | I-131 | Bi-weekly grab sample when cows are on pasture. Monthly all other times | TBE, TBE-2012 Radioiodine in various matrices Env. Inc., I-131-01 Determination of I-131 in milk by an ion exchange |
| Milk | Gamma Spectroscopy | Bi-weekly grab sample when cows are on pasture. Monthly all other times | TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy |
| Food Products | Gamma Spectroscopy | Annual grab samples. | TBE, TBE-2007 Gamma emitting radioisotope analysis Env. Inc., GS-01 Determination of gamma emitters by gamma spectroscopy |
| TLD | Thermoluminescence Dosimetry | Quarterly TLDs comprised of two Mirion Technologies CaF ₂ elements. | Mirion Technologies |

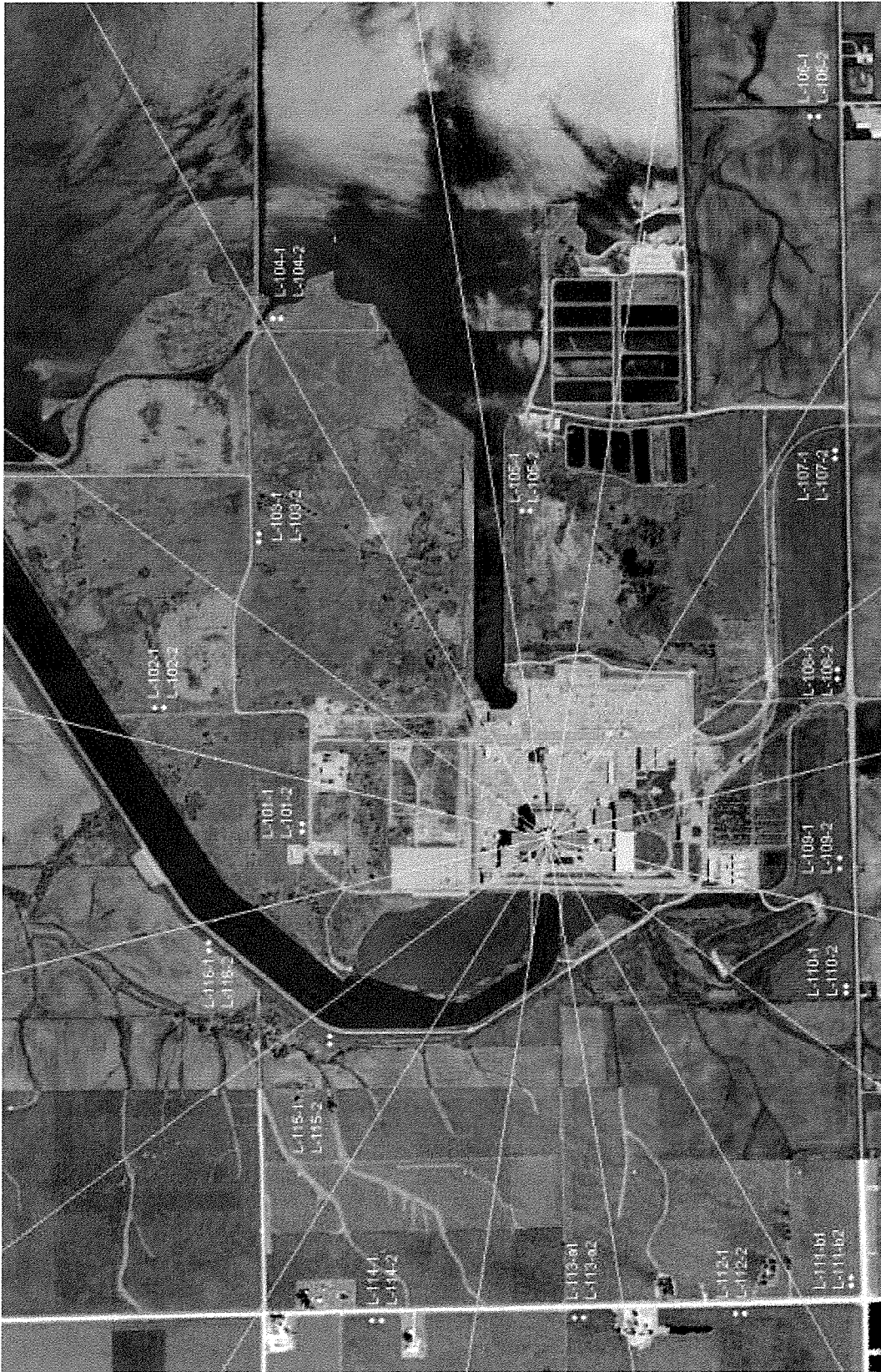


Figure B-1
 Inner Ring TLD Locations
 of the LaSalle County Station, 2011

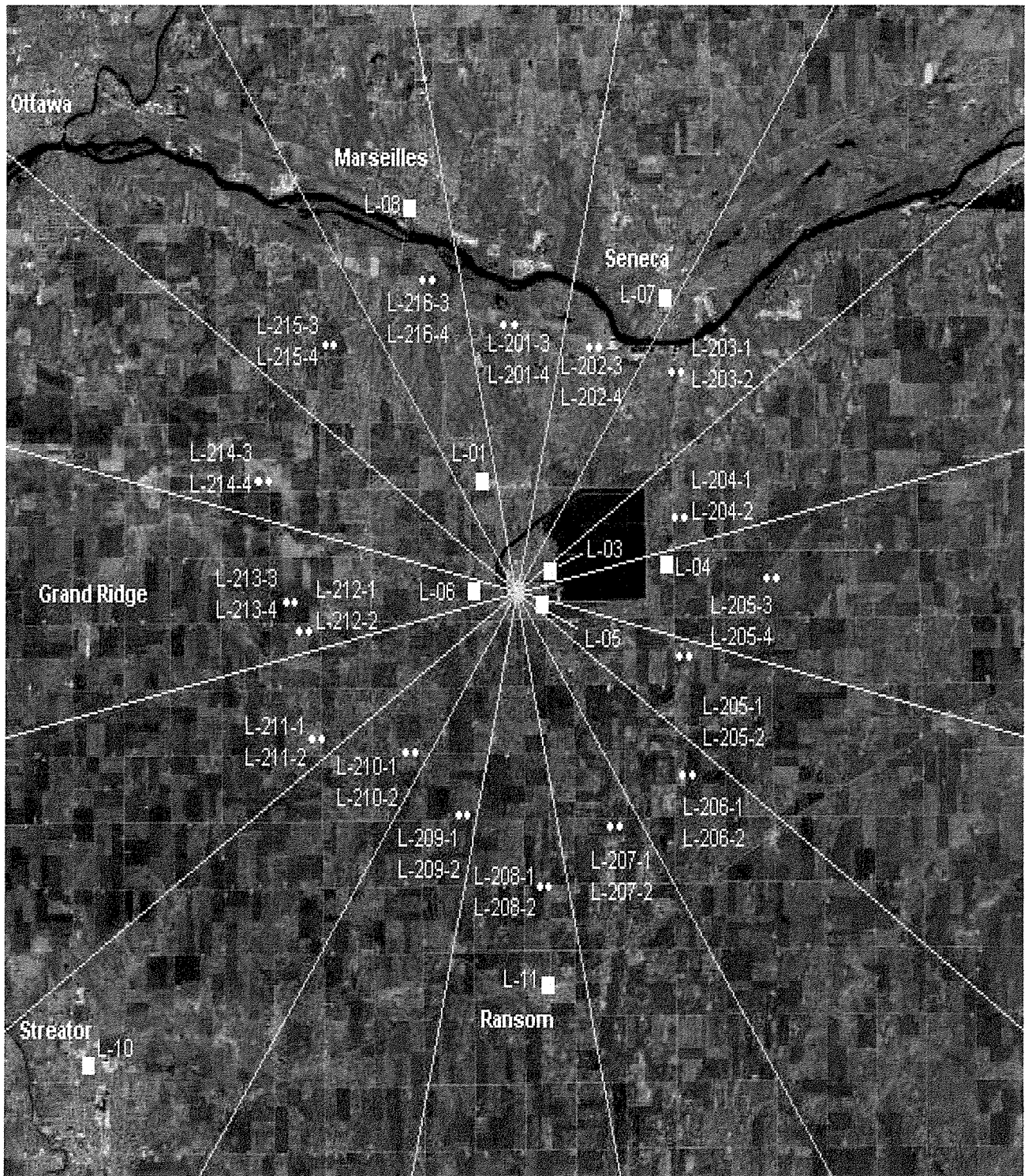


Figure B-2
 Outer Ring TLD Locations and Fixed Air Sampling Locations
 of the LaSalle County Station, 2011

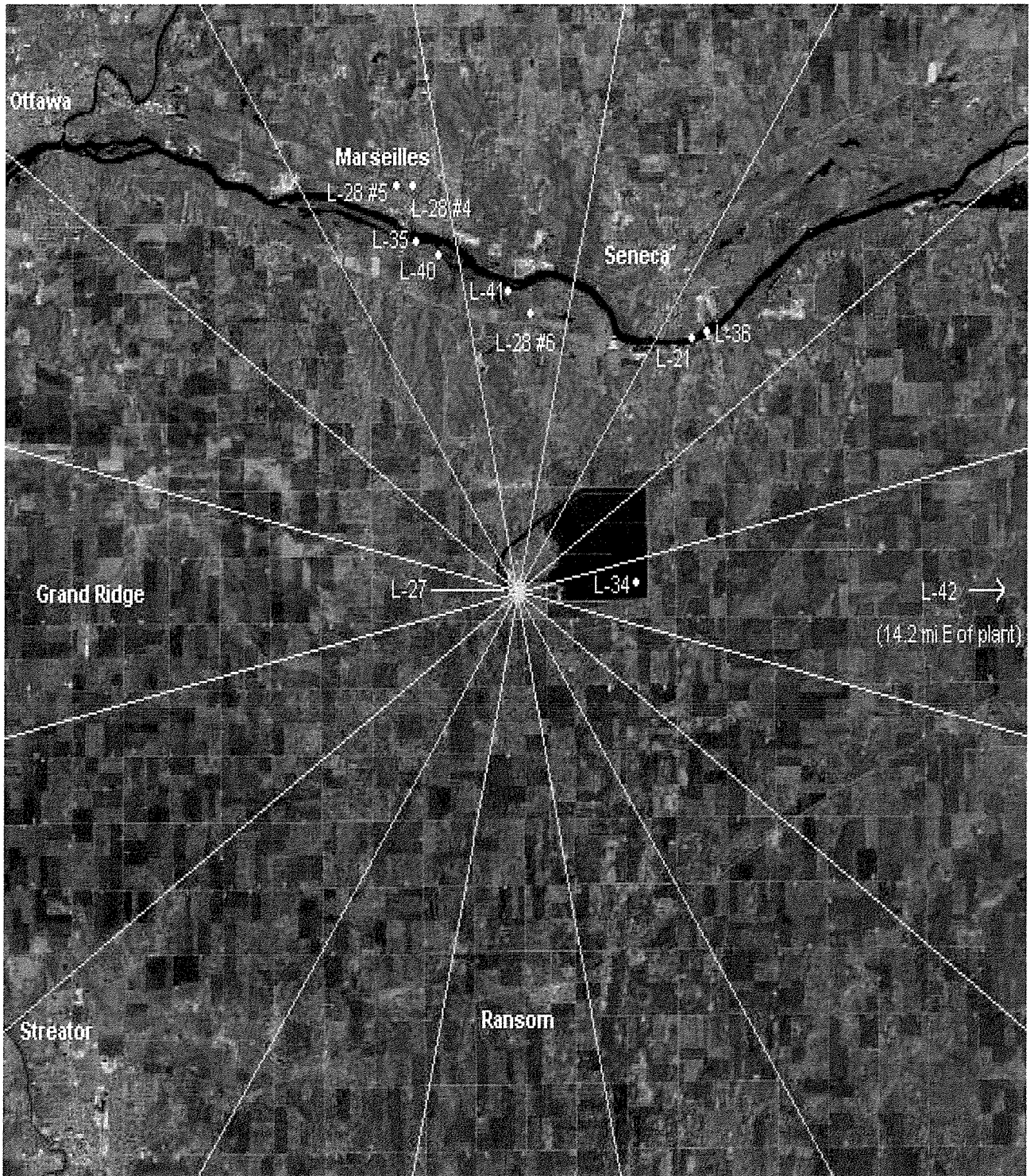


Figure B-3
 Ingestion and Waterborne Exposure Pathway Sample Locations
 of the LaSalle County Station, 2011

APPENDIX C

DATA TABLES AND FIGURES PRIMARY LABORATORY

**TABLE C-I.1 CONCENTRATIONS OF GROSS BETA IN SURFACE WATER SAMPLES
COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

| COLLECTION PERIOD | L-21 | L-40 |
|----------------------|-----------|-----------|
| 01/06/11 - 01/27/11 | 8.2 ± 3.5 | 9.5 ± 3.5 |
| 02/03/11 - 02/23/11 | 8.6 ± 2.7 | 6.4 ± 2.6 |
| 03/03/11 - 03/30/11 | 5.9 ± 2.1 | 7.6 ± 2.2 |
| 04/07/11 - 04/28/11 | 4.6 ± 2.9 | 6.9 ± 3.0 |
| 05/05/11 - 05/26/11 | 6.6 ± 2.9 | 8.1 ± 2.9 |
| 06/01/11 - 06/29/11 | 6.2 ± 2.6 | 6.3 ± 2.7 |
| 07/07/11 - 07/28/11 | 7.0 ± 2.2 | 7.0 ± 2.2 |
| 08/03/11 - 08/25/11 | 7.3 ± 1.6 | 7.0 ± 2.8 |
| 09/01/11 - 09/28/11 | 7.5 ± 1.5 | 7.9 ± 1.5 |
| 10/06/11 - 10/27/11 | 7.5 ± 2.0 | 7.7 ± 2.0 |
| 11/03/11 - 11/30/11 | 7.6 ± 2.2 | 8.8 ± 2.3 |
| 12/08/11 - 12/29/11 | 7.7 ± 2.0 | 6.2 ± 1.9 |
| MEAN | 7.1 ± 2.2 | 7.4 ± 2.0 |

**TABLE C-I.2 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES
COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

| COLLECTION PERIOD | L-21 | L-40 |
|----------------------|-------|-----------|
| 01/06/11 - 03/30/11 | < 179 | 212 ± 112 |
| 04/07/11 - 06/29/11 | < 169 | < 167 |
| 07/07/11 - 09/28/11 | < 190 | < 186 |
| 10/06/11 - 12/29/11 | < 185 | < 187 |
| MEAN | - | - |

TABLE C-I.3 **CONCENTRATIONS OF GAMMA EMITTERS IN SURFACE WATER SAMPLES**
COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

| SITE | COLLECTION PERIOD | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | I-131 | Cs-134 | Cs-137 | Ba-140 | La-140 |
|------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| L-21 | 01/06/11 - 01/27/11 | < 2 | < 2 | < 5 | < 2 | < 4 | < 2 | < 4 | < 14 | < 2 | < 2 | < 22 | < 7 |
| | 02/03/11 - 02/23/11 | < 1 | < 1 | < 2 | < 1 | < 2 | < 1 | < 2 | < 11 | < 1 | < 1 | < 14 | < 4 |
| | 03/03/11 - 03/30/11 | < 1 | < 1 | < 2 | < 1 | < 1 | < 1 | < 2 | < 15 | < 1 | < 1 | < 14 | < 5 |
| | 04/07/11 - 04/28/11 | < 1 | < 1 | < 2 | < 1 | < 2 | < 1 | < 2 | < 14 | < 1 | < 1 | < 16 | < 5 |
| | 05/05/11 - 05/26/11 | < 1 | < 1 | < 3 | < 1 | < 2 | < 2 | < 2 | < 13 | < 1 | < 1 | < 17 | < 5 |
| | 06/01/11 - 06/29/11 | < 1 | < 1 | < 3 | < 1 | < 2 | < 2 | < 3 | < 13 | < 1 | < 1 | < 19 | < 5 |
| | 07/07/11 - 07/28/11 | < 2 | < 2 | < 4 | < 2 | < 3 | < 2 | < 3 | < 8 | < 2 | < 2 | < 15 | < 5 |
| | 08/03/11 - 08/25/11 | < 3 | < 4 | < 8 | < 3 | < 6 | < 4 | < 6 | < 15 | < 3 | < 3 | < 25 | < 7 |
| | 09/01/11 - 09/28/11 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 3 | < 13 | < 1 | < 1 | < 16 | < 4 |
| | 10/06/11 - 10/27/11 | < 1 | < 2 | < 4 | < 1 | < 3 | < 2 | < 3 | < 11 | < 1 | < 1 | < 17 | < 5 |
| | 11/03/11 - 11/30/11 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 1 | < 13 | < 1 | < 1 | < 18 | < 6 |
| | 12/08/11 - 12/29/11 | < 2 | < 2 | < 5 | < 2 | < 4 | < 2 | < 2 | < 13 | < 2 | < 2 | < 20 | < 7 |
| MEAN | - | - | - | - | - | - | - | - | - | - | - | - | - |
| L-40 | 01/06/11 - 01/27/11 | < 2 | < 3 | < 6 | < 2 | < 4 | < 3 | < 5 | < 14 | < 2 | < 2 | < 24 | < 8 |
| | 02/03/11 - 02/23/11 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 2 | < 11 | < 1 | < 1 | < 16 | < 5 |
| | 03/03/11 - 03/30/11 | < 1 | < 1 | < 2 | < 1 | < 1 | < 1 | < 2 | < 15 | < 1 | < 1 | < 15 | < 5 |
| | 04/07/11 - 04/28/11 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 2 | < 13 | < 1 | < 1 | < 17 | < 5 |
| | 05/05/11 - 05/26/11 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 2 | < 13 | < 1 | < 1 | < 18 | < 5 |
| | 06/01/11 - 06/29/11 | < 1 | < 1 | < 3 | < 1 | < 2 | < 2 | < 2 | < 13 | < 1 | < 1 | < 17 | < 5 |
| | 07/07/11 - 07/28/11 | < 2 | < 2 | < 5 | < 2 | < 4 | < 2 | < 4 | < 8 | < 2 | < 2 | < 17 | < 6 |
| | 08/03/11 - 08/25/11 | < 3 | < 3 | < 7 | < 4 | < 6 | < 4 | < 6 | < 15 | < 3 | < 3 | < 24 | < 9 |
| | 09/01/11 - 09/28/11 | < 1 | < 2 | < 4 | < 2 | < 3 | < 2 | < 3 | < 15 | < 1 | < 1 | < 21 | < 8 |
| | 10/06/11 - 10/27/11 | < 2 | < 2 | < 5 | < 2 | < 4 | < 2 | < 4 | < 14 | < 2 | < 2 | < 22 | < 7 |
| | 11/03/11 - 11/30/11 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 1 | < 13 | < 1 | < 1 | < 16 | < 5 |
| | 12/08/11 - 12/29/11 | < 2 | < 2 | < 5 | < 2 | < 3 | < 2 | < 2 | < 13 | < 2 | < 2 | < 20 | < 6 |
| MEAN | - | - | - | - | - | - | - | - | - | - | - | - | - |

TABLE C-II.1

CONCENTRATIONS OF TRITIUM IN GROUNDWELL WATER SAMPLES
COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

| COLLECTION PERIOD | L-27 | L-28-W4 | L-28-W5 | L-28-W6 |
|----------------------|-------|---------|---------|---------|
| 01/13/11 - 01/13/11 | < 152 | | < 156 | < 154 |
| 04/14/11 - 04/14/11 | < 179 | < 179 | | < 184 |
| 07/14/11 - 07/14/11 | < 190 | < 194 | | < 190 |
| 10/13/11 - 10/13/11 | < 186 | | < 189 | < 185 |
| MEAN | - | - | - | - |

TABLE C-II.2
 CONCENTRATIONS OF GAMMA EMITTERS IN GROUND/WELL WATER SAMPLES
 COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

| SITE | COLLECTION PERIOD | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 |
|---------|---------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| L-27 | 01/13/11 - 01/13/11 | < 3 | < 3 | < 6 | < 3 | < 5 | < 3 | < 5 | < 2 | < 3 | < 24 | < 8 |
| | 04/14/11 - 04/14/11 | < 2 | < 2 | < 5 | < 2 | < 4 | < 2 | < 4 | < 2 | < 2 | < 23 | < 7 |
| | 07/14/11 - 07/14/11 | < 4 | < 5 | < 8 | < 5 | < 11 | < 6 | < 10 | < 5 | < 5 | < 29 | < 12 |
| | 10/13/11 - 10/13/11 | < 4 | < 4 | < 9 | < 4 | < 8 | < 4 | < 7 | < 4 | < 4 | < 28 | < 8 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |
| L-28-W4 | 04/14/11 - 04/14/11 | < 2 | < 2 | < 4 | < 2 | < 3 | < 2 | < 3 | < 1 | < 2 | < 19 | < 6 |
| | 07/14/11 - 07/14/11 | < 4 | < 4 | < 10 | < 5 | < 8 | < 6 | < 8 | < 4 | < 5 | < 30 | < 9 |
| | | MEAN | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| L-28-W5 | 01/13/11 - 01/13/11 | < 3 | < 3 | < 8 | < 4 | < 7 | < 4 | < 6 | < 3 | < 4 | < 28 | < 10 |
| | 10/13/11 - 10/13/11 | < 4 | < 4 | < 9 | < 4 | < 8 | < 5 | < 10 | < 4 | < 4 | < 32 | < 10 |
| | | MEAN | - | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | | | |
| L-28-W6 | 01/13/11 - 01/13/11 | < 3 | < 3 | < 7 | < 2 | < 7 | < 4 | < 6 | < 3 | < 3 | < 28 | < 9 |
| | 04/14/11 - 04/14/11 | < 2 | < 2 | < 5 | < 2 | < 4 | < 2 | < 4 | < 2 | < 2 | < 22 | < 8 |
| | 07/14/11 - 07/14/11 | < 5 | < 5 | < 11 | < 5 | < 8 | < 5 | < 8 | < 5 | < 5 | < 31 | < 10 |
| | 10/13/11 - 10/13/11 | < 4 | < 4 | < 7 | < 3 | < 7 | < 5 | < 7 | < 4 | < 4 | < 28 | < 7 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | |

TABLE C-III.1 CONCENTRATIONS OF GAMMA EMITTERS IN FISH SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF PC/KG WET \pm 2 SIGMA

| SITE | COLLECTION PERIOD | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 |
|--------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| L-34 | | | | | | | | | | | | |
| Channel Catfish | 05/12/11 | < 64 | < 57 | < 177 | < 59 | < 141 | < 80 | < 122 | < 48 | < 53 | < 968 | < 270 |
| Common Carp | 05/12/11 | < 64 | < 91 | < 175 | < 68 | < 144 | < 112 | < 166 | < 58 | < 76 | < 1220 | < 580 |
| Bluegill | 10/11/11 | < 54 | < 64 | < 118 | < 64 | < 108 | < 77 | < 118 | < 51 | < 60 | < 702 | < 275 |
| Common Carp | 10/11/11 | < 70 | < 81 | < 184 | < 72 | < 170 | < 107 | < 132 | < 76 | < 61 | < 976 | < 256 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |
| L-35 | | | | | | | | | | | | |
| Channel Catfish | 05/12/11 | < 59 | < 51 | < 151 | < 54 | < 120 | < 64 | < 113 | < 57 | < 52 | < 1000 | < 267 |
| Smallmouth Buffalo | 05/12/11 | < 66 | < 77 | < 175 | < 68 | < 144 | < 84 | < 135 | < 73 | < 71 | < 1290 | < 475 |
| Freshwater Drum | 10/11/11 | < 48 | < 57 | < 126 | < 51 | < 111 | < 72 | < 113 | < 54 | < 59 | < 639 | < 188 |
| Smallmouth Buffalo | 10/11/11 | < 72 | < 60 | < 149 | < 65 | < 129 | < 84 | < 122 | < 65 | < 45 | < 732 | < 206 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |
| L-36 | | | | | | | | | | | | |
| River Carpsucker | 05/12/11 | < 60 | < 68 | < 146 | < 60 | < 124 | < 83 | < 119 | < 66 | < 54 | < 1010 | < 377 |
| Smallmouth Buffalo | 05/12/11 | < 67 | < 75 | < 147 | < 66 | < 135 | < 92 | < 159 | < 70 | < 72 | < 1180 | < 353 |
| River Carpsucker | 10/11/11 | < 84 | < 85 | < 240 | < 85 | < 193 | < 88 | < 152 | < 80 | < 89 | < 1050 | < 361 |
| Smallmouth Buffalo | 10/11/11 | < 61 | < 64 | < 163 | < 76 | < 149 | < 76 | < 111 | < 64 | < 68 | < 838 | < 181 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |

TABLE C-IV.1 CONCENTRATIONS OF GAMMA EMITTERS IN SEDIMENT SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF PC/KG DRY \pm 2 SIGMA

| SITE | COLLECTION PERIOD | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 |
|------|-------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------------|--------|--------|
| L-21 | 05/12/11 | < 76 | < 86 | < 216 | < 82 | < 199 | < 103 | < 150 | < 104 | 194 \pm 76 | < 1230 | < 314 |
| | 10/13/11 | < 47 | < 47 | < 114 | < 57 | < 110 | < 69 | < 110 | < 42 | < 63 | < 463 | < 156 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |
| L-40 | 05/12/11 | < 87 | < 99 | < 278 | < 101 | < 194 | < 112 | < 219 | < 76 | < 108 | < 1580 | < 384 |
| | 10/13/11 | < 70 | < 75 | < 203 | < 84 | < 180 | < 96 | < 139 | < 62 | < 71 | < 688 | < 210 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |
| L-41 | 05/12/11 | < 61 | < 75 | < 185 | < 68 | < 145 | < 66 | < 141 | < 58 | < 66 | < 1110 | < 374 |
| | 10/13/11 | < 55 | < 57 | < 148 | < 73 | < 115 | < 73 | < 121 | < 49 | < 68 | < 561 | < 110 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |

TABLE C-V.1 CONCENTRATIONS OF GROSS BETA IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

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

| COLLECTION PERIOD | GROUP I | | GROUP II | | GROUP III | | | GROUP IV | |
|---------------------|---------|---------|------------|------------|------------|------------|---------|----------|------------|
| | L-03 | L-05 | L-01 | L-06 | L-04 | L-07 | L-08 | L-11 | L-10 |
| 12/29/10 - 01/06/11 | 37 ± 5 | 32 ± 5 | 35 ± 5 | 38 ± 5 | 37 ± 5 | 29 ± 5 | 34 ± 5 | 30 ± 5 | 37 ± 5 |
| 01/06/11 - 01/13/11 | 22 ± 5 | 23 ± 5 | 26 ± 5 | 21 ± 5 | 21 ± 5 | 25 ± 5 | 28 ± 5 | 23 ± 5 | 19 ± 4 |
| 01/13/11 - 01/20/11 | 35 ± 5 | 29 ± 5 | 31 ± 5 | 38 ± 6 | 33 ± 5 | 31 ± 5 | 34 ± 5 | 31 ± 5 | 39 ± 6 |
| 01/20/11 - 01/27/11 | 46 ± 6 | 46 ± 6 | 42 ± 6 | 32 ± 5 | 36 ± 6 | 35 ± 6 | 39 ± 6 | 40 ± 6 | 36 ± 6 |
| 01/27/11 - 02/03/11 | 24 ± 5 | 23 ± 5 | 24 ± 5 | 15 ± 5 | 21 ± 5 | 26 ± 6 | 23 ± 6 | 20 ± 5 | 22 ± 7 (1) |
| 02/03/11 - 02/10/11 | 24 ± 5 | 24 ± 5 | 24 ± 5 | 19 ± 4 | 22 ± 4 | 23 ± 4 | 20 ± 4 | 21 ± 4 | 26 ± 5 |
| 02/10/11 - 02/17/11 | 21 ± 5 | 21 ± 5 | 17 ± 4 | 18 ± 5 | 21 ± 5 | 19 ± 5 | 20 ± 5 | 16 ± 4 | 20 ± 5 |
| 02/17/11 - 02/23/11 | 16 ± 4 | 16 ± 4 | 15 ± 4 | 15 ± 4 | 16 ± 4 | 14 ± 4 | 15 ± 4 | 14 ± 4 | 11 ± 4 |
| 02/23/11 - 03/03/11 | 23 ± 4 | 20 ± 4 | 21 ± 4 | 15 ± 4 | 22 ± 4 | 23 ± 4 | 22 ± 4 | 18 ± 4 | 17 ± 4 |
| 03/03/11 - 03/10/11 | 16 ± 5 | 14 ± 5 | 15 ± 5 | 12 ± 5 | 14 ± 5 | 13 ± 5 | 14 ± 5 | 14 ± 5 | 8 ± 5 |
| 03/10/11 - 03/17/11 | 16 ± 5 | 16 ± 5 | 14 ± 4 | 14 ± 4 | 17 ± 5 | 15 ± 4 | 17 ± 5 | 15 ± 4 | 17 ± 5 |
| 03/17/11 - 03/24/11 | 31 ± 6 | 29 ± 6 | 31 ± 6 | 29 ± 6 | 27 ± 5 | 25 ± 5 | 37 ± 6 | 33 ± 6 | 32 ± 6 |
| 03/24/11 - 03/30/11 | 28 ± 5 | 37 ± 6 | 41 ± 6 | 29 ± 5 | 29 ± 5 | 28 ± 5 | 31 ± 5 | 29 ± 5 | 37 ± 6 |
| 03/30/11 - 04/07/11 | 25 ± 5 | 22 ± 5 | 35 ± 5 | 25 ± 5 | 25 ± 5 | 17 ± 4 | 28 ± 5 | 21 ± 5 | 34 ± 5 |
| 04/07/11 - 04/14/11 | 13 ± 4 | 17 ± 4 | 16 ± 4 | 15 ± 4 | 17 ± 4 | 16 ± 4 | 16 ± 4 | 20 ± 5 | 19 ± 4 |
| 04/14/11 - 04/21/11 | 11 ± 4 | 13 ± 4 | 10 ± 4 | 11 ± 4 | 15 ± 4 | 13 ± 4 | 15 ± 4 | 15 ± 4 | 13 ± 4 |
| 04/21/11 - 04/28/11 | 10 ± 4 | 10 ± 4 | 9 ± 4 | 11 ± 4 | 8 ± 4 | 10 ± 4 | 12 ± 4 | 9 ± 4 | 9 ± 4 |
| 04/28/11 - 05/05/11 | 10 ± 4 | 10 ± 4 | 11 ± 4 | 11 ± 4 | 11 ± 4 | 11 ± 4 | 13 ± 4 | 6 ± 3 | 10 ± 4 |
| 05/05/11 - 05/12/11 | 14 ± 4 | 14 ± 4 | 13 ± 4 | 14 ± 4 | 12 ± 4 | 12 ± 4 | 15 ± 4 | 18 ± 4 | 15 ± 4 |
| 05/12/11 - 05/19/11 | 13 ± 4 | 13 ± 4 | 13 ± 4 | 12 ± 4 | 15 ± 5 | 9 ± 4 | 14 ± 4 | 14 ± 4 | 15 ± 5 |
| 05/19/11 - 05/26/11 | 12 ± 4 | 11 ± 4 | 11 ± 4 | 9 ± 4 | 12 ± 4 | 12 ± 4 | 12 ± 4 | 15 ± 4 | 12 ± 4 |
| 05/26/11 - 06/01/11 | 11 ± 4 | 13 ± 4 | 8 ± 4 | 9 ± 4 | 11 ± 4 | 6 ± 4 | 13 ± 4 | 12 ± 4 | 11 ± 4 |
| 06/01/11 - 06/08/11 | 25 ± 5 | 28 ± 5 | 24 ± 5 | 25 ± 5 | 29 ± 5 | 23 ± 5 | 23 ± 5 | 25 ± 5 | 21 ± 4 |
| 06/08/11 - 06/16/11 | 8 ± 4 | 8 ± 4 | 9 ± 4 | < 7 (1) | 9 ± 4 | 11 ± 4 | 8 ± 4 | 7 ± 4 | 9 ± 4 |
| 06/16/11 - 06/23/11 | 11 ± 4 | 15 ± 5 | (1) 12 ± 4 | 10 ± 4 | 16 ± 4 | 14 ± 4 | 14 ± 4 | 11 ± 4 | 11 ± 4 |
| 06/23/11 - 06/29/11 | 11 ± 4 | < 13 | (1) 9 ± 4 | 11 ± 4 | 12 ± 4 | 12 ± 4 | 12 ± 4 | 13 ± 4 | 14 ± 4 |
| 06/29/11 - 07/07/11 | 25 ± 5 | 17 ± 5 | 22 ± 5 | 16 ± 5 | 22 ± 5 | 18 ± 5 | 19 ± 5 | 19 ± 5 | 24 ± 5 |
| 07/07/11 - 07/14/11 | 19 ± 4 | 22 ± 4 | (1) 23 ± 5 | 16 ± 4 | 23 ± 5 (1) | 17 ± 4 | 17 ± 4 | 11 ± 4 | 20 ± 4 |
| 07/14/11 - 07/21/11 | 24 ± 5 | 30 ± 6 | (1) 28 ± 5 | 28 ± 5 | 27 ± 5 | 22 ± 5 (1) | 19 ± 5 | 21 ± 5 | 24 ± 5 |
| 07/21/11 - 07/28/11 | 19 ± 4 | 18 ± 4 | (1) 22 ± 5 | 17 ± 4 (1) | 19 ± 4 | 17 ± 4 | 16 ± 4 | 21 ± 5 | 21 ± 5 |
| 07/28/11 - 08/03/11 | 27 ± 6 | 30 ± 6 | 28 ± 6 | 31 ± 6 | 29 ± 6 | 25 ± 5 | 32 ± 6 | 34 ± 6 | 31 ± 6 |
| 08/03/11 - 08/11/11 | 18 ± 4 | 21 ± 4 | 18 ± 4 | 20 ± 4 | 24 ± 4 | 20 ± 4 | 24 ± 4 | 20 ± 4 | 22 ± 4 |
| 08/11/11 - 08/18/11 | 16 ± 5 | 22 ± 5 | 17 ± 5 | 16 ± 4 | 21 ± 5 | 23 ± 5 | 19 ± 5 | 18 ± 5 | 23 ± 5 |
| 08/18/11 - 08/25/11 | 26 ± 5 | 33 ± 5 | (1) 28 ± 5 | 24 ± 5 (1) | 29 ± 5 | 23 ± 4 | 29 ± 5 | 32 ± 5 | 31 ± 5 |
| 08/25/11 - 09/01/11 | 23 ± 5 | 19 ± 5 | 21 ± 5 | 32 ± 8 (1) | 20 ± 5 | 17 ± 4 | 19 ± 5 | 24 ± 5 | 23 ± 5 |
| 09/01/11 - 09/08/11 | 25 ± 5 | 19 ± 4 | (1) 23 ± 5 | 19 ± 4 | 21 ± 4 | 9 ± 4 | 12 ± 4 | 19 ± 4 | < 4 |
| 09/08/11 - 09/15/11 | 19 ± 4 | 16 ± 4 | (1) 20 ± 4 | 22 ± 4 | 21 ± 5 | 19 ± 4 | 17 ± 4 | 16 ± 4 | 21 ± 4 |
| 09/15/11 - 09/22/11 | 19 ± 4 | 18 ± 4 | 16 ± 4 | 16 ± 4 | 17 ± 4 | 20 ± 5 | 20 ± 5 | 17 ± 4 | 18 ± 4 |
| 09/22/11 - 09/28/11 | 15 ± 5 | 14 ± 5 | 18 ± 5 | 14 ± 5 | 16 ± 5 | 16 ± 5 | 12 ± 5 | 13 ± 5 | 17 ± 5 |
| 09/28/11 - 10/06/11 | 16 ± 4 | 20 ± 5 | 22 ± 5 | 20 ± 5 | 21 ± 5 | 20 ± 5 | 23 ± 5 | 22 ± 5 | 24 ± 5 |
| 10/06/11 - 10/13/11 | 31 ± 5 | 32 ± 5 | 38 ± 6 | 42 ± 6 | 36 ± 6 | 42 ± 6 | 42 ± 6 | 44 ± 6 | 34 ± 5 |
| 10/13/11 - 10/20/11 | 20 ± 5 | 16 ± 5 | 17 ± 5 | 22 ± 5 | 15 ± 5 | 14 ± 5 | 23 ± 5 | 17 ± 5 | 20 ± 5 |
| 10/20/11 - 10/27/11 | 25 ± 5 | 25 ± 5 | 30 ± 5 | 29 ± 5 | 30 ± 5 | 29 ± 5 | 24 ± 5 | 27 ± 5 | 22 ± 5 |
| 10/27/11 - 11/03/11 | 27 ± 5 | 27 ± 5 | 31 ± 5 | 27 ± 5 | 24 ± 5 | 30 ± 5 | 26 ± 5 | 23 ± 5 | 25 ± 5 |
| 11/03/11 - 11/10/11 | 22 ± 5 | 21 ± 5 | 23 ± 5 | 21 ± 5 | 22 ± 5 | 24 ± 5 | 23 ± 5 | 20 ± 5 | 23 ± 5 |
| 11/10/11 - 11/16/11 | 33 ± 6 | 28 ± 6 | 33 ± 6 | 35 ± 6 | 30 ± 6 | 29 ± 6 | 30 ± 6 | 29 ± 6 | 33 ± 6 |
| 11/16/11 - 11/23/11 | 10 ± 4 | 15 ± 4 | 18 ± 4 | 18 ± 4 | 10 ± 4 | 19 ± 5 | 14 ± 4 | 12 ± 4 | 18 ± 5 |
| 11/23/11 - 11/30/11 | 22 ± 4 | 22 ± 4 | 24 ± 4 | 19 ± 4 | 21 ± 4 | 23 ± 4 | 18 ± 4 | 18 ± 4 | 22 ± 4 |
| 11/30/11 - 12/08/11 | 21 ± 4 | 19 ± 4 | 26 ± 4 | 26 ± 4 | 21 ± 4 | 22 ± 4 | 19 ± 4 | 21 ± 4 | 22 ± 4 |
| 12/08/11 - 12/15/11 | 26 ± 5 | 26 ± 5 | 28 ± 5 | 29 ± 5 | 22 ± 5 | 25 ± 5 | 20 ± 5 | 29 ± 5 | 22 ± 5 |
| 12/15/11 - 12/22/11 | 35 ± 5 | 34 ± 5 | 37 ± 5 | 36 ± 5 | 32 ± 5 | 36 ± 5 | 36 ± 5 | 31 ± 5 | 34 ± 5 |
| 12/22/11 - 12/29/11 | 16 ± 5 | 20 ± 5 | 17 ± 5 | 21 ± 5 | 21 ± 5 | 18 ± 5 | 19 ± 5 | 19 ± 5 | 20 ± 5 |
| MEAN | 21 ± 16 | 21 ± 16 | 22 ± 18 | 21 ± 17 | 21 ± 14 | 20 ± 15 | 21 ± 16 | 20 ± 16 | 22 ± 16 |

* THE MEAN AND 2 STANDARD DEVIATION ARE CALCULATED USING THE POSITIVE VALUES
 (1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-V.2 MONTHLY AND YEARLY MEAN VALUES OF GROSS BETA CONCENTRATIONS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

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

| GROUP I - NEAR-SITE LOCATIONS | | | | GROUP II - FAR-FIELD LOCATIONS | | | | GROUP III - FAR-FIELD LOCATIONS | | | | GROUP IV - CONTROL LOCATION | | | |
|-------------------------------|---------|------------|--|--------------------------------|---------|------------|--|---------------------------------|---------|------------|--|-----------------------------|---------|------------|--|
| COLLECTION PERIOD | MIN MAX | MEAN ± 2SD | | COLLECTION PERIOD | MIN MAX | MEAN ± 2SD | | COLLECTION PERIOD | MIN MAX | MEAN ± 2SD | | COLLECTION PERIOD | MIN MAX | MEAN ± 2SD | |
| 12/29/10 - 02/03/11 | 22 46 | 32 ± 18 | | 12/29/10 - 02/03/11 | 15 42 | 30 ± 17 | | 12/29/10 - 02/03/11 | 20 40 | 30 ± 12 | | 12/29/10 - 02/03/11 | 19 39 | 30 ± 19 | |
| 02/03/11 - 03/03/11 | 16 24 | 20 ± 7 | | 02/03/11 - 03/03/11 | 15 24 | 18 ± 7 | | 02/03/11 - 03/03/11 | 14 23 | 19 ± 6 | | 02/03/11 - 03/03/11 | 11 26 | 19 ± 13 | |
| 03/03/11 - 03/30/11 | 14 37 | 23 ± 18 | | 03/03/11 - 03/30/11 | 12 41 | 23 ± 21 | | 03/03/11 - 03/30/11 | 13 37 | 22 ± 16 | | 03/03/11 - 03/30/11 | 8 37 | 23 ± 27 | |
| 03/30/11 - 04/28/11 | 10 25 | 15 ± 11 | | 03/30/11 - 04/28/11 | 9 35 | 16 ± 18 | | 03/30/11 - 04/28/11 | 8 28 | 16 ± 11 | | 03/30/11 - 04/28/11 | 9 34 | 19 ± 22 | |
| 04/28/11 - 06/01/11 | 10 14 | 12 ± 3 | | 04/28/11 - 06/01/11 | 8 14 | 11 ± 4 | | 04/28/11 - 06/01/11 | 6 18 | 12 ± 6 | | 04/28/11 - 06/01/11 | 10 15 | 13 ± 5 | |
| 06/01/11 - 06/29/11 | 8 28 | 15 ± 16 | | 06/01/11 - 06/29/11 | 9 25 | 14 ± 14 | | 06/01/11 - 06/29/11 | 7 29 | 15 ± 13 | | 06/01/11 - 06/29/11 | 9 21 | 14 ± 11 | |
| 06/29/11 - 08/03/11 | 17 30 | 23 ± 10 | | 06/29/11 - 08/03/11 | 16 31 | 23 ± 11 | | 06/29/11 - 08/03/11 | 11 34 | 21 ± 12 | | 06/29/11 - 08/03/11 | 20 31 | 24 ± 9 | |
| 08/03/11 - 09/01/11 | 16 33 | 22 ± 11 | | 08/03/11 - 09/01/11 | 16 32 | 22 ± 11 | | 08/03/11 - 09/01/11 | 17 32 | 22 ± 9 | | 08/03/11 - 09/01/11 | 22 31 | 25 ± 8 | |
| 09/01/11 - 09/28/11 | 14 25 | 18 ± 7 | | 09/01/11 - 09/28/11 | 14 23 | 18 ± 6 | | 09/01/11 - 09/28/11 | 9 21 | 17 ± 7 | | 09/08/11 - 09/28/11 | 17 21 | 19 ± 4 | |
| 09/28/11 - 11/03/11 | 16 32 | 24 ± 12 | | 09/28/11 - 11/03/11 | 17 42 | 28 ± 16 | | 09/28/11 - 11/03/11 | 14 44 | 27 ± 17 | | 09/28/11 - 11/03/11 | 20 34 | 25 ± 11 | |
| 11/03/11 - 11/30/11 | 10 33 | 22 ± 14 | | 11/03/11 - 11/30/11 | 18 35 | 24 ± 13 | | 11/03/11 - 11/30/11 | 10 30 | 21 ± 12 | | 11/03/11 - 11/30/11 | 18 33 | 24 ± 13 | |
| 11/30/11 - 12/29/11 | 16 35 | 25 ± 14 | | 11/30/11 - 12/29/11 | 17 37 | 28 ± 13 | | 11/30/11 - 12/29/11 | 18 36 | 24 ± 12 | | 11/30/11 - 12/29/11 | 20 34 | 24 ± 14 | |
| 12/29/10 - 12/29/11 | 8 46 | 21 ± 16 | | 12/29/10 - 12/29/11 | 8 42 | 21 ± 17 | | 12/29/10 - 12/29/11 | 6 44 | 21 ± 15 | | 12/29/10 - 12/29/11 | 8 39 | 22 ± 16 | |

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

TABLE C-V.3 CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

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

| SITE | COLLECTION PERIOD | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 |
|------|---------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| L-01 | 12/29/10 - 03/30/11 | < 3 | < 4 | < 20 | < 2 | < 8 | < 5 | < 8 | < 3 | < 3 | < 571 | < 262 |
| | 03/30/11 - 06/29/11 | < 3 | < 5 | < 19 | < 2 | < 7 | < 6 | < 13 | < 3 | < 3 | < 1300 | < 770 |
| | 06/29/11 - 09/28/11 | < 2 | < 5 | < 11 | < 2 | < 5 | < 4 | < 8 | < 2 | < 2 | < 678 | < 156 |
| | 09/28/11 - 12/29/11 | < 2 | < 4 | < 10 | < 2 | < 7 | < 5 | < 7 | < 3 | < 2 | < 288 | < 112 |
| MEAN | - | - | - | - | - | - | - | - | - | - | - | - |
| L-03 | 12/29/10 - 03/30/11 | < 4 | < 8 | < 24 | < 4 | < 9 | < 7 | < 12 | < 4 | < 3 | < 787 | < 448 |
| | 03/30/11 - 06/29/11 | < 2 | < 6 | < 21 | < 3 | < 7 | < 6 | < 12 | < 3 | < 3 | < 1390 | < 466 |
| | 06/29/11 - 09/28/11 | < 3 | < 6 | < 22 | < 3 | < 9 | < 7 | < 11 | < 3 | < 3 | < 1030 | < 292 |
| | 09/28/11 - 12/29/11 | < 3 | < 4 | < 10 | < 2 | < 7 | < 4 | < 8 | < 2 | < 2 | < 211 | < 129 |
| MEAN | - | - | - | - | - | - | - | - | - | - | - | |
| L-04 | 12/29/10 - 03/30/11 | < 3 | < 4 | < 18 | < 3 | < 5 | < 6 | < 10 | < 3 | < 3 | < 651 | < 163 |
| | 03/30/11 - 06/29/11 | < 3 | < 5 | < 21 | < 3 | < 7 | < 6 | < 10 | < 3 | < 3 | < 1400 | < 571 |
| | 06/29/11 - 09/28/11 | < 4 | < 5 | < 19 | < 3 | < 7 | < 7 | < 10 | < 3 | < 3 | < 687 | < 200 |
| | 09/28/11 - 12/29/11 | < 2 | < 3 | < 10 | < 3 | < 6 | < 4 | < 5 | < 2 | < 2 | < 161 | < 86 |
| MEAN | - | - | - | - | - | - | - | - | - | - | - | |
| L-05 | 12/29/10 - 03/30/11 | < 3 | < 5 | < 18 | < 3 | < 8 | < 6 | < 11 | < 3 | < 3 | < 572 | < 201 |
| | 03/30/11 - 06/29/11 | < 3 | < 6 | < 26 | < 3 | < 9 | < 7 | < 14 | < 3 | < 3 | < 1510 | < 418 |
| | 06/29/11 - 09/28/11 | < 4 | < 7 | < 17 | < 3 | < 9 | < 6 | < 10 | < 3 | < 2 | < 788 | < 269 |
| | 09/28/11 - 12/29/11 | < 2 | < 3 | < 9 | < 2 | < 7 | < 2 | < 6 | < 2 | < 2 | < 189 | < 45 |
| MEAN | - | - | - | - | - | - | - | - | - | - | - | |
| L-06 | 12/29/10 - 03/30/11 | < 2 | < 5 | < 11 | < 3 | < 9 | < 6 | < 11 | < 3 | < 3 | < 738 | < 288 |
| | 03/30/11 - 06/29/11 | < 1 | < 3 | < 10 | < 1 | < 3 | < 4 | < 5 | < 1 | < 2 | < 723 | < 294 |
| | 06/29/11 - 09/28/11 | < 3 | < 8 | < 23 | < 4 | < 11 | < 7 | < 13 | < 4 | < 4 | < 1240 | < 391 |
| | 09/28/11 - 12/29/11 | < 2 | < 3 | < 15 | < 3 | < 6 | < 4 | < 7 | < 2 | < 2 | < 192 | < 114 |
| MEAN | - | - | - | - | - | - | - | - | - | - | - | |

TABLE C-V.3
**CONCENTRATIONS OF GAMMA EMITTERS IN AIR PARTICULATE SAMPLES
 COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011**

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

| SITE | COLLECTION PERIOD | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 |
|------|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|
| L-07 | 12/29/10 - 03/30/11 | < 4 | < 8 | < 17 | < 4 | < 11 | < 7 | < 12 | < 4 | < 3 | < 881 | < 210 |
| | 03/30/11 - 06/29/11 | < 3 | < 5 | < 17 | < 2 | < 7 | < 7 | < 13 | < 3 | < 3 | < 1270 | < 574 |
| | 06/29/11 - 09/28/11 | < 2 | < 4 | < 12 | < 2 | < 6 | < 5 | < 9 | < 2 | < 2 | < 503 | < 262 |
| | 09/28/11 - 12/29/11 | < 3 | < 4 | < 9 | < 3 | < 5 | < 2 | < 4 | < 2 | < 2 | < 188 | < 116 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |
| L-08 | 12/29/10 - 03/30/11 | < 3 | < 5 | < 13 | < 2 | < 7 | < 5 | < 7 | < 3 | < 2 | < 653 | < 224 |
| | 03/30/11 - 06/29/11 | < 3 | < 10 | < 34 | < 3 | < 11 | < 9 | < 14 | < 4 | < 3 | < 4490 | < 2520 |
| | 06/29/11 - 09/28/11 | < 2 | < 3 | < 18 | < 2 | < 3 | < 6 | < 7 | < 3 | < 2 | < 785 | < 286 |
| | 09/28/11 - 12/29/11 | < 3 | < 4 | < 13 | < 3 | < 8 | < 6 | < 8 | < 3 | < 2 | < 320 | < 43 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |
| L-10 | 12/29/10 - 03/30/11 | < 3 | < 5 | < 13 | < 2 | < 7 | < 7 | < 11 | < 3 | < 3 | < 641 | < 226 |
| | 03/10/11 - 03/17/11 | < 36 | < 36 | < 89 | < 36 | < 73 | < 44 | < 74 | < 41 | < 40 | < 271 | < 94 |
| | 03/17/11 - 03/24/11 | < 34 | < 30 | < 65 | < 39 | < 71 | < 25 | < 45 | < 31 | < 31 | < 137 | < 64 |
| | 03/24/11 - 03/30/11 | < 37 | < 43 | < 83 | < 43 | < 93 | < 38 | < 55 | < 32 | < 39 | < 191 | < 93 |
| | 03/30/11 - 06/29/11 | < 2 | < 3 | < 8 | < 2 | < 5 | < 5 | < 7 | < 2 | < 2 | < 1080 | < 306 |
| | 03/30/11 - 04/07/11 | < 28 | < 34 | < 48 | < 35 | < 59 | < 31 | < 45 | < 32 | < 32 | < 184 | < 40 |
| | 06/29/11 - 09/28/11 | < 2 | < 4 | < 12 | < 3 | < 7 | < 5 | < 8 | < 3 | < 2 | < 525 | < 249 |
| | 09/28/11 - 12/29/11 | < 3 | < 3 | < 12 | < 3 | < 5 | < 5 | < 9 | < 3 | < 3 | < 263 | < 147 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |
| L-11 | 12/29/10 - 03/30/11 | < 3 | < 5 | < 18 | < 3 | < 8 | < 5 | < 5 | < 3 | < 2 | < 528 | < 302 |
| | 03/30/11 - 06/29/11 | < 2 | < 4 | < 12 | < 2 | < 5 | < 5 | < 7 | < 2 | < 2 | < 1140 | < 458 |
| | 06/29/11 - 09/28/11 | < 3 | < 6 | < 20 | < 2 | < 8 | < 8 | < 11 | < 3 | < 3 | < 826 | < 402 |
| | 09/28/11 - 12/29/11 | < 3 | < 5 | < 13 | < 3 | < 6 | < 4 | < 7 | < 2 | < 2 | < 243 | < 112 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |

BOLDED VALUES INDICATE ADDITIONAL SAMPLING DUE OT THE FUKUSHIMA EVENT

TABLE C-VI.1 CONCENTRATIONS OF I-131 IN AIR IODINE SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

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

| COLLECTION PERIOD | GROUP I | | GROUP II | | GROUP III | | | GROUP IV | |
|----------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| | L-03 | L-05 | L-01 | L-06 | L-04 | L-07 | L-08 | L-11 | L-10 |
| 12/29/10 - 01/06/11 | < 63 | < 63 | < 63 | < 68 | < 63 | < 68 | < 68 | < 68 | < 37 |
| 01/06/11 - 01/13/11 | < 55 | < 55 | < 54 | < 68 | < 54 | < 70 | < 69 | < 29 | < 69 |
| 01/13/11 - 01/20/11 | < 66 | < 66 | < 66 | < 67 | < 66 | < 67 | < 67 | < 50 | < 67 |
| 01/20/11 - 01/27/11 | < 58 | < 58 | < 32 | < 58 | < 58 | < 67 | < 66 | < 66 | < 66 |
| 01/27/11 - 02/03/11 | < 18 | < 18 | < 10 | < 18 | < 18 | < 35 | < 35 | < 34 | < 44 (1) |
| 02/03/11 - 02/10/11 | < 36 | < 36 | < 20 | < 36 | < 36 | < 56 | < 58 | < 58 | < 58 |
| 02/10/11 - 02/17/11 | < 26 | < 61 | < 61 | < 61 | < 61 | < 40 | < 40 | < 40 | < 40 |
| 02/17/11 - 02/23/11 | < 59 | < 57 | < 36 | < 58 | < 58 | < 69 | < 70 | < 69 | < 69 |
| 02/23/11 - 03/03/11 | < 66 | < 66 | < 66 | < 66 | < 28 | < 62 | < 64 | < 64 | < 64 |
| 03/03/11 - 03/10/11 | < 28 | < 28 | < 15 | < 28 | < 28 | < 40 | < 40 | < 40 | < 40 |
| 03/10/11 - 03/17/11 | < 52 | < 22 | < 52 | < 52 | < 52 | < 50 | < 50 | < 50 | < 50 |
| 03/17/11 - 03/24/11 | 138 ± 52 | 140 ± 49 | 127 ± 42 | 179 ± 44 | 109 ± 41 | 131 ± 43 | 136 ± 35 | 134 ± 55 | 66 ± 43 |
| 03/24/11 - 03/30/11 | 65 ± 36 | < 57 | < 64 | < 57 | 62 ± 37 | < 50 | < 61 | < 53 | 59 ± 31 |
| 03/30/11 - 04/07/11 | 120 ± 39 | 107 ± 36 | 93 ± 42 | 108 ± 33 | 105 ± 52 | 72 ± 40 | 99 ± 46 | 71 ± 32 | 90 ± 33 |
| 04/07/11 - 04/14/11 | < 26 | < 43 | < 38 | < 46 | < 39 | < 51 | < 44 | < 58 | < 37 |
| 04/14/11 - 04/21/11 | < 58 | < 59 | < 58 | < 66 | < 58 | < 66 | < 66 | < 28 | < 66 |
| 04/21/11 - 04/28/11 | < 64 | < 64 | < 64 | < 70 | < 64 | < 68 | < 30 | < 68 | < 68 |
| 04/28/11 - 05/05/11 | < 68 | < 68 | < 68 | < 37 | < 68 | < 69 | < 67 | < 67 | < 67 |
| 05/05/11 - 05/12/11 | < 24 | < 24 | < 24 | < 42 | < 24 | < 43 | < 42 | < 42 | < 18 |
| 05/12/11 - 05/19/11 | < 45 | < 45 | < 45 | < 68 | < 45 | < 69 | < 69 | < 69 | < 69 |
| 05/19/11 - 05/26/11 | < 44 | < 44 | < 41 | < 52 | < 44 | < 53 | < 53 | < 29 | < 53 |
| 05/26/11 - 06/01/11 | < 56 | < 55 | < 56 | < 63 | < 56 | < 65 | < 65 | < 35 | < 64 |
| 06/01/11 - 06/08/11 | < 62 | < 62 | < 26 | < 61 | < 62 | < 69 | < 64 | < 64 | < 64 |
| 06/08/11 - 06/16/11 | < 43 | < 43 | < 43 | < 65 (1) | < 43 | < 54 | < 56 | < 32 | < 56 |
| 06/16/11 - 06/23/11 | < 33 | < 67 (1) | < 55 | < 55 | < 54 | < 69 | < 69 | < 69 | < 69 |
| 06/23/11 - 06/29/11 | < 50 | < 259 (1) | < 51 | < 22 | < 51 | < 43 | < 43 | < 42 | < 42 |
| 06/29/11 - 07/07/11 | < 32 | < 32 | < 31 | < 31 | < 13 | < 25 | < 25 | < 25 | < 25 |
| 07/07/11 - 07/14/11 | < 24 | < 24 (1) | < 13 | < 24 | < 24 (1) | < 64 | < 64 | < 63 | < 64 |
| 07/14/11 - 07/21/11 | < 43 | < 44 (1) | < 43 | < 62 | < 44 | < 64 (1) | < 63 | < 29 | < 63 |
| 07/21/11 - 07/28/11 | < 58 | < 60 (1) | < 25 | < 58 (1) | < 58 | < 47 | < 47 | < 47 | < 47 |
| 07/28/11 - 08/03/11 | < 65 | < 64 | < 64 | < 35 | < 64 | < 61 | < 61 | < 60 | < 60 |
| 08/03/11 - 08/11/11 | < 38 | < 37 | < 21 | < 37 | < 37 | < 50 | < 50 | < 50 | < 50 |
| 08/11/11 - 08/18/11 | < 53 | < 53 | < 52 | < 50 | < 52 | < 29 | < 52 | < 52 | < 52 |
| 08/18/11 - 08/25/11 | < 65 | < 64 (1) | < 27 | < 64 (1) | < 63 | < 54 | < 54 | < 54 | < 54 |
| 08/25/11 - 09/01/11 | < 63 | < 61 | < 61 | < 21 (1) | < 61 | < 29 | < 13 | < 29 | < 29 |
| 09/01/11 - 09/08/11 | < 66 | < 66 (1) | < 35 | < 64 | < 64 | < 67 | < 67 | < 67 | < 67 |
| 09/08/11 - 09/15/11 | < 52 | < 51 (1) | < 50 | < 57 | < 51 | < 58 | < 58 | < 58 | < 31 |
| 09/15/11 - 09/22/11 | < 44 | < 44 | < 44 | < 60 | < 44 | < 60 | < 60 | < 56 | < 60 |
| 09/22/11 - 09/28/11 | < 32 | < 32 | < 32 | < 69 | < 32 | < 70 | < 69 | < 29 | < 69 |
| 09/28/11 - 10/06/11 | < 51 | < 51 | < 28 | < 50 | < 50 | < 63 | < 63 | < 62 | < 63 |
| 10/06/11 - 10/13/11 | < 67 | < 67 | < 36 | < 69 | < 66 | < 67 | < 65 | < 65 | < 65 |
| 10/13/11 - 10/20/11 | < 34 | < 34 | < 18 | < 33 | < 33 | < 63 | < 64 | < 64 | < 64 |
| 10/20/11 - 10/27/11 | < 13 | < 23 | < 23 | < 23 | < 23 | < 26 | < 26 | < 26 | < 26 |
| 10/27/11 - 11/03/11 | < 26 | < 26 | < 14 | < 26 | < 26 | < 27 | < 27 | < 27 | < 27 |
| 11/03/11 - 11/10/11 | < 60 | < 60 | < 59 | < 59 | < 32 | < 55 | < 55 | < 55 | < 55 |
| 11/10/11 - 11/16/11 | < 32 | < 32 | < 17 | < 32 | < 32 | < 39 | < 39 | < 38 | < 38 |
| 11/16/11 - 11/23/11 | < 59 | < 33 | < 59 | < 59 | < 59 | < 55 | < 55 | < 55 | < 55 |
| 11/23/11 - 11/30/11 | < 42 | < 42 | < 23 | < 42 | < 42 | < 51 | < 51 | < 51 | < 51 |
| 11/30/11 - 12/08/11 | < 46 | < 46 | < 46 | < 25 | < 46 | < 61 | < 60 | < 61 | < 61 |
| 12/08/11 - 12/15/11 | < 62 | < 62 | < 62 | < 62 | < 62 | < 67 | < 67 | < 67 | < 67 |
| 12/15/11 - 12/22/11 | < 58 | < 58 | < 58 | < 38 | < 58 | < 21 | < 38 | < 38 | < 38 |
| 12/22/11 - 12/29/11 | < 44 | < 45 | < 24 | < 44 | < 44 | < 60 | < 59 | < 59 | < 59 |
| MEAN | 108 ± 76 | 124 ± 47 | 110 ± 49 | 144 ± 100 | 92 ± 52 | 101 ± 84 | 118 ± 52 | 103 ± 89 | 72 ± 32 |

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

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

BOLD POSITIVE VALUES ARE DIRECTLY ATTRIBUTED TO THE FUKUSHIMA EVENT IN MARCH OF 2011

**TABLE C-VII.1 CONCENTRATIONS OF I-131 IN MILK SAMPLES
IN THE VICINITY OF LASALLE COUNTY STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

| COLLECTION PERIOD | <u>CONTROL FARM</u> |
|----------------------|---------------------|
| | L-42 |
| 01/06/11 | < 0.7 |
| 02/03/11 | < 0.6 |
| 03/03/11 | < 0.5 |
| 03/31/11 | < 0.5 |
| 04/07/11 | < 0.7 |
| 04/21/11 | < 0.5 |
| 05/05/11 | < 0.7 |
| 05/19/11 | < 0.5 |
| 06/02/11 | < 0.7 |
| 06/16/11 | < 0.9 |
| 06/30/11 | < 0.7 |
| 07/14/11 | < 0.8 |
| 07/28/11 | < 0.8 |
| 08/11/11 | < 0.9 |
| 08/25/11 | < 0.8 |
| 09/08/11 | < 0.7 |
| 09/22/11 | < 0.8 |
| 10/06/11 | < 0.7 |
| 10/20/11 | < 0.7 |
| 11/03/11 | < 0.9 |
| 12/01/11 | < 0.6 |
| MEAN | - |

BOLDED VALUES INDICATE ADDITIONAL SAMPLING DUE TO THE FUKUSHIMA EVENT

TABLE C-VII.2 CONCENTRATIONS OF GAMMA EMITTERS IN MILK SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

| SITE | COLLECTION PERIOD | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | Cs-134 | Cs-137 | Ba-140 | La-140 |
|------|-------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| L-42 | 01/06/11 | < 5 | < 5 | < 10 | < 5 | < 11 | < 5 | < 9 | < 4 | < 6 | < 32 | < 10 |
| | 02/03/11 | < 6 | < 7 | < 18 | < 8 | < 14 | < 8 | < 13 | < 6 | < 6 | < 43 | < 12 |
| | 03/03/11 | < 5 | < 6 | < 14 | < 7 | < 14 | < 6 | < 10 | < 5 | < 5 | < 40 | < 13 |
| | 03/31/11 | < 5 | < 7 | < 14 | < 6 | < 14 | < 6 | < 11 | < 5 | < 6 | < 48 | < 11 |
| | 04/07/11 | < 4 | < 5 | < 14 | < 6 | < 10 | < 5 | < 9 | < 4 | < 5 | < 46 | < 13 |
| | 04/21/11 | < 5 | < 5 | < 12 | < 6 | < 11 | < 5 | < 10 | < 5 | < 5 | < 26 | < 8 |
| | 05/05/11 | < 5 | < 5 | < 11 | < 7 | < 12 | < 6 | < 10 | < 5 | < 6 | < 32 | < 10 |
| | 05/19/11 | < 5 | < 5 | < 13 | < 7 | < 11 | < 6 | < 11 | < 4 | < 5 | < 55 | < 15 |
| | 06/02/11 | < 6 | < 7 | < 17 | < 7 | < 14 | < 6 | < 13 | < 6 | < 6 | < 44 | < 13 |
| | 06/16/11 | < 5 | < 7 | < 15 | < 7 | < 16 | < 6 | < 13 | < 6 | < 7 | < 48 | < 14 |
| | 06/30/11 | < 5 | < 6 | < 14 | < 6 | < 11 | < 6 | < 11 | < 5 | < 6 | < 30 | < 8 |
| | 07/14/11 | < 6 | < 6 | < 13 | < 7 | < 12 | < 5 | < 11 | < 5 | < 6 | < 36 | < 10 |
| | 07/28/11 | < 8 | < 5 | < 18 | < 11 | < 15 | < 7 | < 13 | < 6 | < 7 | < 43 | < 9 |
| | 08/11/11 | < 5 | < 7 | < 17 | < 8 | < 18 | < 6 | < 15 | < 7 | < 7 | < 43 | < 12 |
| | 08/25/11 | < 6 | < 6 | < 15 | < 7 | < 15 | < 7 | < 11 | < 6 | < 6 | < 42 | < 13 |
| | 09/08/11 | < 6 | < 6 | < 14 | < 8 | < 15 | < 7 | < 13 | < 6 | < 6 | < 40 | < 10 |
| | 09/22/11 | < 6 | < 5 | < 11 | < 7 | < 11 | < 6 | < 9 | < 5 | < 5 | < 26 | < 9 |
| | 10/06/11 | < 8 | < 8 | < 17 | < 11 | < 17 | < 7 | < 12 | < 7 | < 7 | < 43 | < 13 |
| | 10/20/11 | < 5 | < 6 | < 13 | < 7 | < 15 | < 6 | < 10 | < 5 | < 6 | < 34 | < 12 |
| | 11/03/11 | < 8 | < 7 | < 17 | < 9 | < 14 | < 8 | < 12 | < 5 | < 7 | < 42 | < 10 |
| | 12/01/11 | < 6 | < 7 | < 17 | < 7 | < 13 | < 7 | < 11 | < 5 | < 7 | < 32 | < 11 |
| | MEAN | - | - | - | - | - | - | - | - | - | - | - |

BOLDED VALUES INDICATE ADDITIONAL SAMPLING DUE TO THE FUKUSHIMA EVENT

TABLE C-VIII.1 CONCENTRATIONS OF GAMMA EMITTERS IN FOOD PRODUCT SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF PCI/KG WET ± 2 SIGMA

| SITE | COLLECTION PERIOD | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | I-131 | Cs-134 | Cs-137 | Ba-140 | La-140 |
|------------------|-------------------|----------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| L-CONTROL | | | | | | | | | | | | | |
| Beets | 09/24/11 | (1) < 19 | < 15 | < 44 | < 19 | < 32 | < 20 | < 35 | < 49 | < 18 | < 18 | < 112 | < 42 |
| Cabbage | 09/24/11 | (1) < 12 | < 13 | < 26 | < 16 | < 22 | < 15 | < 25 | < 30 | < 10 | < 11 | < 80 | < 19 |
| MEAN | | - | - | - | - | - | - | - | - | - | - | - | - |
| L-QUAD 1 | | | | | | | | | | | | | |
| Cabbage | 09/24/11 | (1) < 17 | < 20 | < 61 | < 27 | < 44 | < 19 | < 37 | < 39 | < 16 | < 18 | < 113 | < 27 |
| Carrots | 09/24/11 | (1) < 14 | < 16 | < 35 | < 21 | < 36 | < 17 | < 30 | < 39 | < 14 | < 11 | < 83 | < 20 |
| MEAN | | - | - | - | - | - | - | - | - | - | - | - | - |
| L-QUAD 2 | | | | | | | | | | | | | |
| Beets | 09/24/11 | < 16 | < 18 | < 34 | < 23 | < 44 | < 15 | < 28 | < 37 | < 16 | < 19 | < 111 | < 21 |
| Cabbage | 09/24/11 | < 14 | < 17 | < 40 | < 21 | < 37 | < 13 | < 33 | < 40 | < 14 | < 18 | < 98 | < 24 |
| MEAN | | - | - | - | - | - | - | - | - | - | - | - | - |
| L-QUAD 3 | | | | | | | | | | | | | |
| Beets | 09/24/11 | (1) < 19 | < 23 | < 50 | < 24 | < 47 | < 21 | < 35 | < 53 | < 27 | < 21 | < 127 | < 31 |
| Broccoli | 09/24/11 | (1) < 12 | < 16 | < 35 | < 19 | < 34 | < 14 | < 30 | < 34 | < 13 | < 15 | < 92 | < 26 |
| MEAN | | - | - | - | - | - | - | - | - | - | - | - | - |
| L-QUAD 4 | | | | | | | | | | | | | |
| Cabbage | 09/24/11 | < 15 | < 16 | < 37 | < 19 | < 35 | < 19 | < 28 | < 37 | < 15 | < 17 | < 91 | < 27 |
| Onions | 09/24/11 | < 15 | < 14 | < 37 | < 19 | < 29 | < 14 | < 32 | < 37 | < 13 | < 18 | < 82 | < 36 |
| MEAN | | - | - | - | - | - | - | - | - | - | - | - | - |

(1) THE MEAN AND 2 STANDARD DEVIATION ARE CALCULATED USING THE POSITIVE VALUES

TABLE C-IX.1 QUARTERLY TLD RESULTS FOR LASALLE COUNTY STATION, 2011

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

| STATION CODE | MEAN ± 2 S.D. | JAN - MAR | APR - JUN | JUL - SEP | OCT - DEC |
|-----------------|------------------|-----------|-----------|-----------|-----------|
| L-01-1 | 29.0 ± 15.6 | 33 | 22 | 23 | 38 |
| L-01-2 | 28.5 ± 17.8 | 31 | 22 | 21 | 40 |
| L-03-1 | 27.3 ± 12.0 | 29 | 22 | 23 | 35 |
| L-03-2 | 26.3 ± 8.9 | 29 | 23 | 22 | 31 |
| L-04-1 | 25.8 ± 13.2 | 26 | 21 | 21 | 35 |
| L-04-2 | 24.8 ± 11.7 | 27 | 20 | 20 | 32 |
| L-05-1 | 29.3 ± 18.0 | 28 | 26 | 21 | 42 |
| L-05-2 | 23.8 ± 8.7 | 27 | 20 | 20 | 28 |
| L-06-1 | 28.5 ± 16.5 | 29 | 22 | 23 | 40 |
| L-06-2 | 27.0 ± 14.8 | 30 | 20 | 22 | 36 |
| L-07-1 | 26.5 ± 14.3 | 28 | 21 | 21 | 36 |
| L-07-2 | 27.0 ± 14.7 | 28 | 22 | 21 | 37 |
| L-08-1 | 26.5 ± 6.0 | 28 | 24 | 24 | 30 |
| L-08-2 | 29.0 ± 14.1 | 31 | 25 | 22 | 38 |
| L-10-1 | 25.5 ± 14.3 | 27 | 20 | 20 | 35 |
| L-10-2 | 24.3 ± 14.8 | 26 | 18 | 19 | 34 |
| L-11-1 | 24.5 ± 12.9 | 26 | 20 | 19 | 33 |
| L-11-2 | 23.3 ± 12.8 | 31 | 18 | 18 | 26 |
| L-101-1 | 28.3 ± 11.1 | 32 | 23 | 24 | 34 |
| L-101-2 | 27.0 ± 14.0 | 29 | 21 | 22 | 36 |
| L-102-1 | 28.3 ± 14 | 29 | 22 | 24 | 38 |
| L-102-2 | 30.0 ± 17.5 | 31 | 23 | 24 | 42 |
| L-103-1 | 26.0 ± 9.4 | 29 | 22 | 22 | 31 |
| L-103-2 | 25.8 ± 9.8 | 30 | 21 | 22 | 30 |
| L-104-1 | 24.5 ± 10.5 | 28 | 20 | 20 | 30 |
| L-104-2 | 25.0 ± 8.2 | 28 | 22 | 21 | 29 |
| L-105-1 | 29.0 ± 10.7 | 34 | 23 | 26 | 33 |
| L-105-2 | 29.0 ± 15.3 | 31 | 23 | 23 | 39 |
| L-106-1 | 25.5 ± 8.2 | 28 | 22 | 22 | 30 |
| L-106-2 | 25.5 ± 10.1 | 27 | 22 | 21 | 32 |
| L-107-1 | 26.5 ± 11.8 | 30 | 22 | 21 | 33 |
| L-107-2 | 28.8 ± 17.3 | 31 | 23 | 21 | 40 |
| L-108-1 | 27.5 ± 15.1 | 28 | 22 | 22 | 38 |
| L-108-2 | 22.8 ± 9.8 | 27 | 19 | 18 | 27 |
| L-109-1 | 28.0 ± 12.5 | 30 | 23 | 23 | 36 |
| L-109-2 | 27.3 ± 7.7 | 30 | 25 | 23 | 31 |
| L-110-1 | 27.0 ± 9.5 | 30 | 24 | 22 | 32 |
| L-110-2 | 26.8 ± 7.5 | 30 | 24 | 23 | 30 |
| L-112-1 | 26.5 ± 12.3 | 29 | 22 | 21 | 34 |
| L-112-2 | 28.3 ± 15.5 | 31 | 22 | 22 | 38 |
| L-114-1 | 28.8 ± 14.8 | 33 | 23 | 22 | 37 |
| L-114-2 | 28.0 ± 12.0 | 35 | 23 | 23 | 31 |
| L-115-1 | 26.8 ± 13.1 | 35 | 21 | 22 | 29 |
| L-115-2 | 24.0 ± 8.2 | 27 | 20 | 21 | 28 |
| L-116-1 | 25.3 ± 8.7 | 29 | 22 | 21 | 29 |
| L-116-2 | 24.5 ± 8.2 | 27 | 21 | 21 | 29 |
| L-201-3 | 24.3 ± 9.6 | 26 | 19 | 22 | 30 |
| L-201-4 | 25.5 ± 10.9 | 28 | 21 | 21 | 32 |
| L-202-3 | 26.3 ± 13.4 | 31 | 20 | 21 | 33 |

TABLE C-IX.1 QUARTERLY TLD RESULTS FOR LASALLE COUNTY STATION, 2011

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

| STATION CODE | MEAN ± 2 S.D. | JAN - MAR | APR - JUN | JUL - SEP | OCT - DEC |
|-----------------|------------------|-----------|-----------|-----------|-----------|
| L-202-4 | 24.5 ± 7.4 | 26 | 21 | 22 | 29 |
| L-203-1 | 26.5 ± 13.2 | 30 | 20 | 22 | 34 |
| L-203-2 | 29.5 ± 13.2 | 29 | 25 | 25 | 39 |
| L-204-1 | 26.5 ± 7.0 | 29 | 24 | 23 | 30 |
| L-204-2 | 26.5 ± 10.5 | 31 | 21 | 23 | 31 |
| L-205-1 | 28.8 ± 13.6 | 29 | 26 | 22 | 38 |
| L-205-2 | 26.8 ± 7.7 | 29 | 24 | 23 | 31 |
| L-205-3 | 27.3 ± 11.4 | 29 | (1) | 21 | 32 |
| L-205-4 | 26.5 ± 10.5 | 31 | 23 | 21 | 31 |
| L-206-1 | 27.8 ± 14.6 | 28 | 23 | 22 | 38 |
| L-206-2 | 27.5 ± 12.9 | 29 | 22 | 23 | 36 |
| L-207-1 | 26.5 ± 8.7 | 28 | 23 | 23 | 32 |
| L-207-2 | 27.0 ± 9.9 | 29 | 24 | 22 | 33 |
| L-208-1 | 26.0 ± 9.4 | 29 | 22 | 22 | 31 |
| L-208-2 | 27.3 ± 10.8 | 29 | 24 | 22 | 34 |
| L-209-1 | 26.5 ± 8.4 | 29 | 24 | 22 | 31 |
| L-209-2 | 28.3 ± 17.1 | 31 | 23 | 20 | 39 |
| L-210-1 | 28.5 ± 10.9 | 31 | 24 | 24 | 35 |
| L-210-2 | 29.5 ± 10.4 | 31 | 27 | 24 | 36 |
| L-211-1 | 28.0 ± 11.5 | 33 | 23 | 23 | 33 |
| L-211-2 | 27.3 ± 8.7 | 31 | 24 | 23 | 31 |
| L-212-1 | 27.3 ± 11.1 | 31 | 23 | 22 | 33 |
| L-212-2 | 28.5 ± 12.3 | 31 | 24 | 23 | 36 |
| L-213-3 | 26.5 ± 13.2 | 30 | 22 | 20 | 34 |
| L-213-4 | 25.8 ± 10.0 | 29 | 22 | 21 | 31 |
| L-214-3 | 27.8 ± 10.4 | 30 | 23 | 24 | 34 |
| L-214-4 | 27.5 ± 13.6 | 30 | 22 | 22 | 36 |
| L-215-3 | 28.3 ± 14.2 | 29 | 23 | 23 | 38 |
| L-215-4 | 31.0 ± 14.5 | 33 | 28 | 23 | 40 |
| L-216-3 | 28.5 ± 13.7 | 29 | 24 | 23 | 38 |
| L-216-4 | 26.8 ± 9.6 | 28 | 23 | 23 | 33 |
| L-111B-1 | 26.3 ± 7.7 | 29 | 24 | 22 | 30 |
| L-111B-2 | 27.8 ± 13.9 | 31 | 22 | 22 | 36 |
| L-113A-1 | 28.5 ± 13.1 | 32 | 23 | 23 | 36 |
| L-113A-2 | 26.8 ± 11.0 | 32 | 22 | 22 | 31 |

(1) SEE PROGRAM EXCEPTIONS SECTION FOR EXPLANATION

TABLE C-IX.2 MEAN QUARTERLY TLD RESULTS FOR THE INNER RING, OUTER RING, OTHER AND CONTROL LOCATIONS FOR LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER ± 2
STANDARD DEVIATIONS OF THE STATION DATA

| COLLECTION PERIOD | INNER RING ± 2 S.D. | OUTER RING | OTHER | CONTROL |
|-------------------|---------------------|------------|------------|------------|
| JAN-MAR | 30.1 ± 4.4 | 29.6 ± 3.2 | 28.8 ± 3.9 | 26.5 ± 1.4 |
| APR-JUN | 22.2 ± 2.5 | 23.1 ± 3.8 | 21.8 ± 4.1 | 19.0 ± 2.8 |
| JUL-SEP | 22.1 ± 2.8 | 22.4 ± 2.2 | 21.3 ± 3.2 | 19.5 ± 1.4 |
| OCT-DEC | 33.1 ± 7.9 | 33.9 ± 6.1 | 34.8 ± 9.0 | 34.5 ± 1.4 |

TABLE C-IX.3 SUMMARY OF THE AMBIENT DOSIMETRY PROGRAM FOR LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF MILLI-ROENTGEN/QUARTER

| LOCATION | SAMPLES ANALYZED | PERIOD MINIMUM | PERIOD MAXIMUM | PERIOD MEAN ± 2 S.D. |
|------------|------------------|----------------|----------------|----------------------|
| INNER RING | 128 | 18 | 42 | 26.9 ± 10.9 |
| OUTER RING | 135 | 19 | 40 | 27.3 ± 10.4 |
| OTHER | 64 | 18 | 42 | 26.7 ± 12.5 |
| CONTROL | 8 | 18 | 35 | 24.9 ± 13.5 |

INNER RING STATIONS - L-101-1, L-101-2, L-102-1, L-102-2, L-103-1, L-103-2, L-104-1, L-104-2, L-105-1, L-105-2, L-106-1, L-106-2, L-107-1, L-107-2, L-108-1, L-108-2, L-109-1, L-109-2, L-110-1, L-110-2, L-111B-1, L-111B-2, L-112-1, L-112-2, L-113A-1, L-113A-2, L-114-1, L-114-2, L-115-1, L-115-2, L-116-1, L-116-2

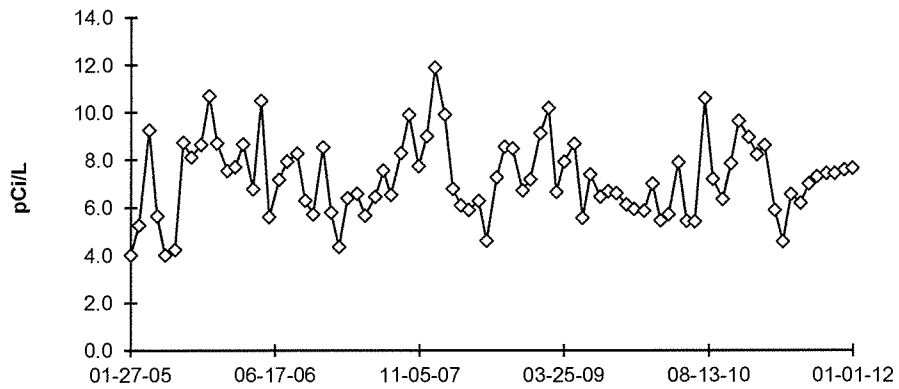
OUTER RING STATIONS - L-201-3, L-201-4, L-202-3, L-202-4, L-203-1, L-203-2, L-204-1, L-204-2, L-205-1, L-205-2, L-205-3, L-205-4, L-206-1, L-206-2, L-207-1, L-207-2, L-208-1, L-208-2, L-209-1, L-209-2, L-210-1, L-210-2, L-211-1, L-211-2, L-212-1, L-212-2, L-213-3, L-213-4, L-214-3, L-214-4, L-215-3, L-215-4, L-216-3, L-216-4

OTHER STATIONS - L-01-1, L-01-2, L-03-1, L-03-2, L-04-1, L-04-2, L-05-1, L-05-2, L-06-1, L-06-2, L-07-1, L-07-2, L-08-1, L-08-2, L-11-1, L-11-2

CONTROL STATIONS - L-10-1, L-10-2

FIGURE C-1
Surface Water - Gross Beta - Stations L-21 (C) and L-40
Collected in the Vicinity of LSCS, 2005 - 2011

L-21 (C) Illinois River at Seneca



L-40 Illinois River Downstream

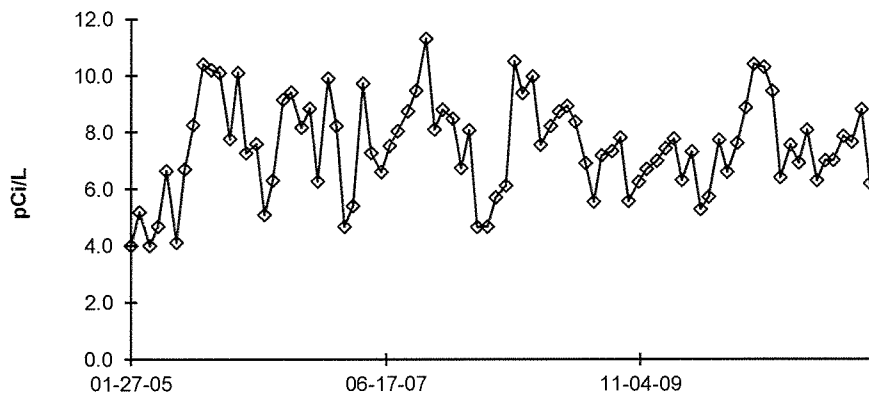
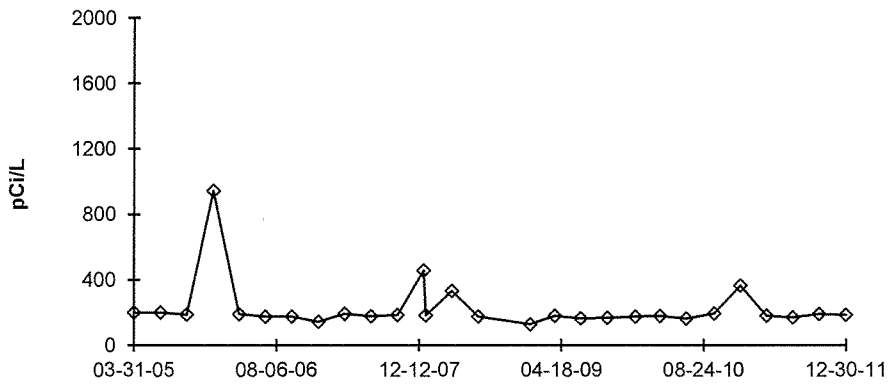


FIGURE C-2
Surface Water - Tritium - Stations L-21 (C) and L-40
Collected in the Vicinity of LSCS, 2005 - 2011

L-21 Illinois River at Seneca



L-40 Illinois River Downstream

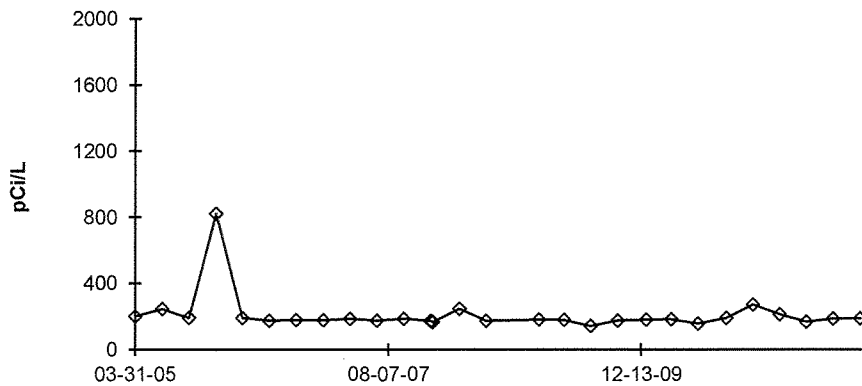
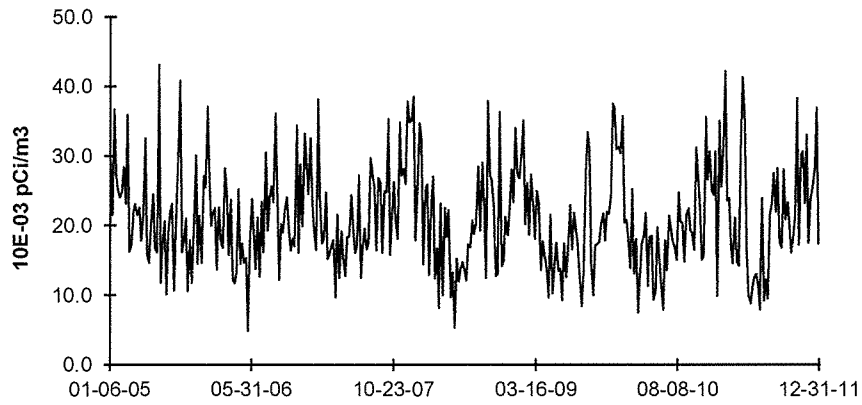


FIGURE C-3
Air Particulate - Gross Beta - Stations L-01 and L-03
Collected in the Vicinity of LSCS, 2005 - 2011

L-01 Nearsite No. 1



L-03 Onsite No. 3

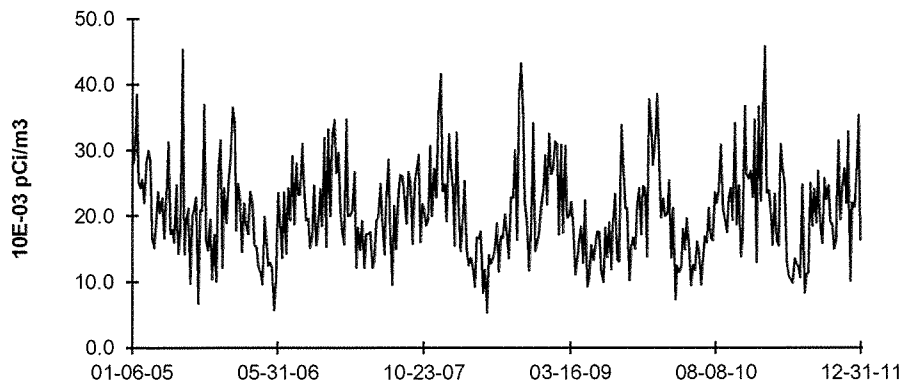
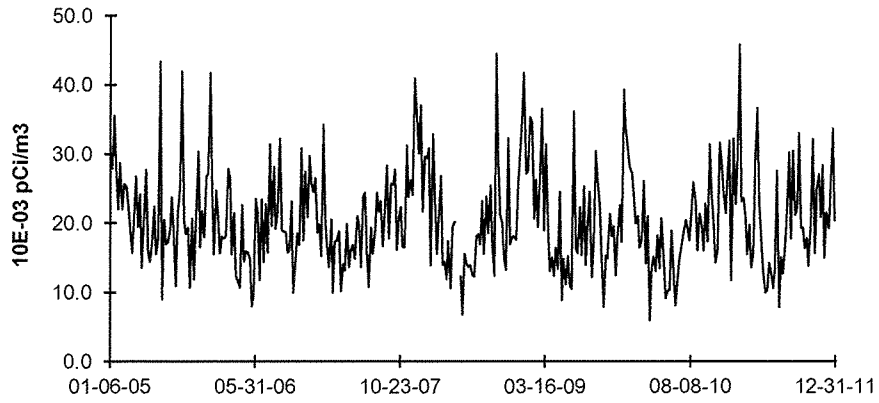


FIGURE C-4
Air Particulate - Gross Beta - Stations L-05 and L-06
Collected in the Vicinity of LSCS, 2005 - 2011

L-05 Onsite No. 5



L-06 Nearsite No. 6

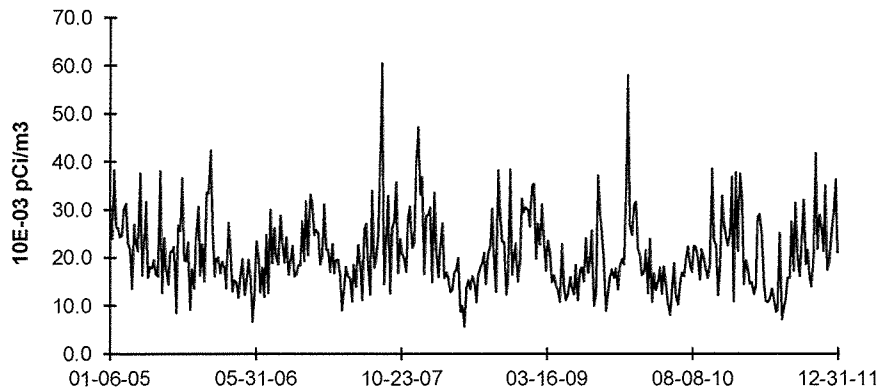


FIGURE C-5
Air Particulate - Gross Beta - Station L-10 (C)
Collected in the Vicinity of LSCS, 2005 - 2011

L-10 (C) Streator

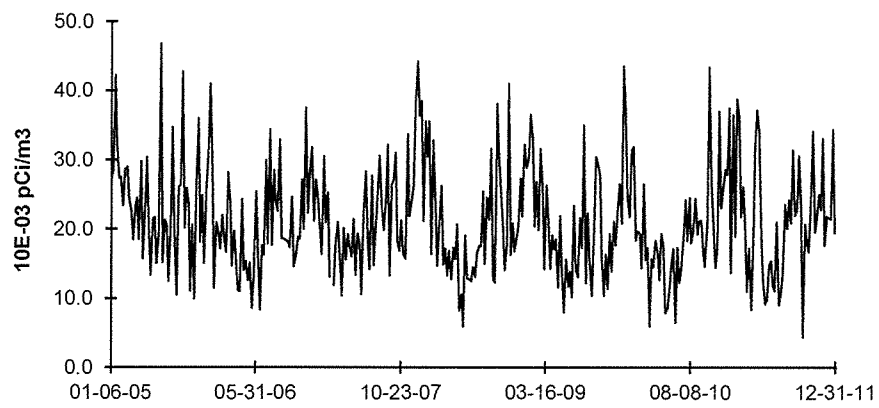
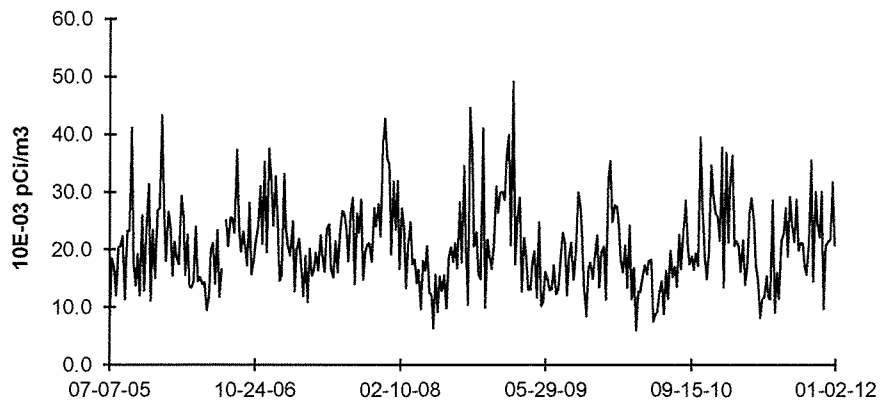


FIGURE C-6
Air Particulate - Gross Beta - Stations L-04 and L-07
Collected in the Vicinity of LSCS, 2005 - 2011

L-04 Rte. 170



L-07 Seneca

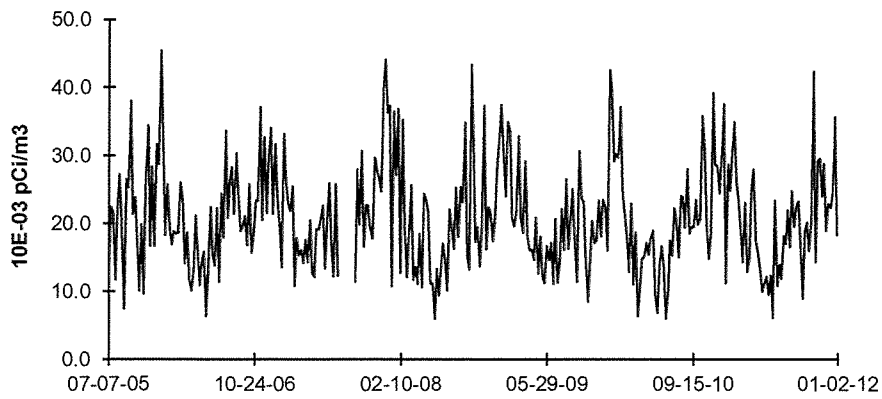
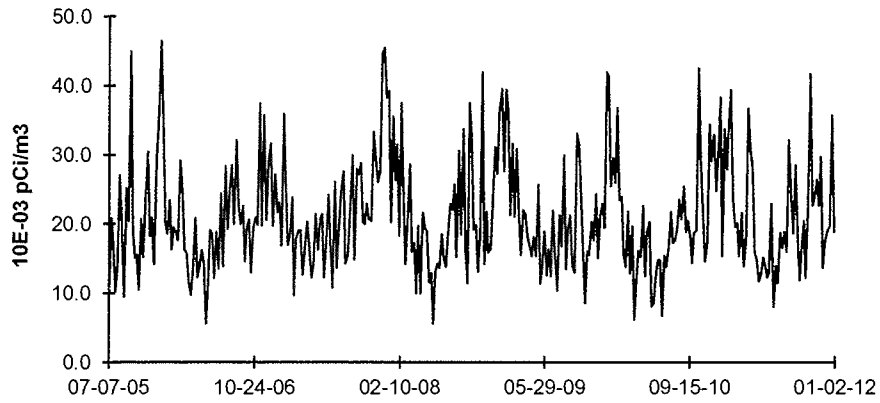
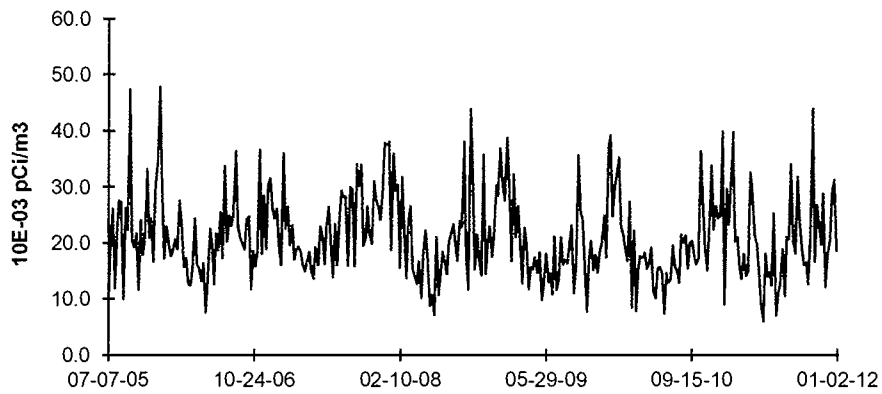


FIGURE C-7
Air Particulate - Gross Beta - Stations L-08 and L-11
Collected in the Vicinity of LSCS, 2005 - 2011

L-08 Marseilles



L-11 Ransom



APPENDIX D

INTER-LABORATORY COMPARISON PROGRAM

TABLE D-1

ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2011

(PAGE 1 OF 3)

| Month/Year | Identification Number | Matrix | Nuclide | Units | Reported Value (a) | Known Value (b) | Ratio (c) TBE/Analytics | Evaluation (d) | |
|------------|-----------------------|--------|-----------|-------|------------------------------------------|-----------------|------------------------------------------|----------------|-------|
| March 2011 | E7460-396 | Milk | Sr-89 | pCi/L | 98.8 | 97.4 | 1.01 | A | |
| | | | Sr-90 | pCi/L | 15.2 | 15.8 | 0.96 | A | |
| | E7461-396 | Milk | I-131 | pCi/L | 92.9 | 96.9 | 0.96 | A | |
| | | | Ce-141 | pCi/L | not provided by Analytics for this study | | | | N (1) |
| | | | Cr-51 | pCi/L | 398 | 298 | 1.34 | A | |
| | | | Cs-134 | pCi/L | 130 | 130 | 1.00 | A | |
| | | | Cs-137 | pCi/L | 232 | 205 | 1.13 | A | |
| | | | Co-58 | pCi/L | 121 | 113 | 1.07 | A | |
| | | | Mn-54 | pCi/L | 289 | 266 | 1.09 | A | |
| | | | Fe-59 | pCi/L | 201 | 175 | 1.15 | A | |
| | | | Zn-65 | pCi/L | 287 | 261 | 1.10 | A | |
| | | | Co-60 | pCi/L | 186 | 172 | 1.08 | A | |
| | | | E7463-396 | AP | Ce-141 | pCi | not provided by Analytics for this study | | |
| | Cr-51 | pCi | | | 243 | 215 | 1.13 | A | |
| | Cs-134 | pCi | | | 85.0 | 94.2 | 0.90 | A | |
| | Cs-137 | pCi | | | 168 | 148 | 1.14 | A | |
| | Co-58 | pCi | | | 89.2 | 81.8 | 1.09 | A | |
| | Mn-54 | pCi | | | 171 | 192 | 0.89 | A | |
| | Fe-59 | pCi | | | 129 | 126 | 1.02 | A | |
| Zn-65 | pCi | 159 | | | 189 | 0.84 | A | | |
| Co-60 | pCi | 132 | | | 124 | 1.06 | A | | |
| E7462-396 | Charcoal | I-131 | pCi | 96.5 | 96.3 | 1.00 | A | | |
| June 2011 | E7851-396 | Milk | Sr-89 | pCi/L | 96.7 | 103 | 0.94 | A | |
| | | | Sr-90 | pCi/L | 13.8 | 15.6 | 0.88 | A | |
| | E7852-396 | Milk | I-131 | pCi/L | 110 | 103.0 | 1.07 | A | |
| | | | Ce-141 | pCi/L | 68.1 | 79.9 | 0.85 | A | |
| | | | Cr-51 | pCi/L | 186 | 206 | 0.90 | A | |
| | | | Cs-134 | pCi/L | 164 | 190 | 0.86 | A | |
| | | | Cs-137 | pCi/L | 140 | 138 | 1.01 | A | |
| | | | Co-58 | pCi/L | 141 | 152 | 0.93 | A | |
| | | | Mn-54 | pCi/L | 136 | 138 | 0.99 | A | |
| | | | Fe-59 | pCi/L | 128 | 123 | 1.04 | A | |
| | | | Zn-65 | pCi/L | 263 | 261 | 1.01 | A | |
| | | | Co-60 | pCi/L | 189 | 195 | 0.97 | A | |
| | E7854-396 | AP | Ce-141 | pCi | 49.9 | 42.9 | 1.16 | A | |
| | | | Cr-51 | pCi | 95.6 | 110 | 0.87 | A | |
| | | | Cs-134 | pCi | 104 | 102 | 1.02 | A | |
| | | | Cs-137 | pCi | 83.8 | 74.0 | 1.13 | A | |
| | | | Co-58 | pCi | 90.7 | 81.3 | 1.12 | A | |
| | | | Mn-54 | pCi | 74.5 | 73.9 | 1.01 | A | |
| | | | Fe-59 | pCi | 62.0 | 66.1 | 0.94 | A | |
| | | | Zn-65 | pCi | 140 | 140 | 1.00 | A | |
| Co-60 | pCi | 119 | 104 | 1.14 | A | | | | |
| E7853-396 | Charcoal | I-131 | pCi | 76.2 | 86.1 | 0.89 | A | | |

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2011
(PAGE 2 OF 3)

| Month/Year | Identification Number | Matrix | Nuclide | Units | Reported Value (a) | Known Value (b) | Ratio (c) TBE/Analytics | Evaluation (d) | | | |
|----------------|-----------------------|----------|----------------|-----------|------------------------------------------|-----------------|-------------------------|------------------------------------------|------|------|---|
| September 2011 | E8070-396 | Milk | Sr-89 | pCi/L | 102 | 90.8 | 1.12 | A | | | |
| | | | Sr-90 | pCi/L | 13.2 | 14.7 | 0.90 | A | | | |
| September 2011 | E8071-396 | Milk | I-131 | pCi/L | 74.2 | 89.2 | 0.83 | A | | | |
| | | | Ce-141 | pCi/L | 66.9 | 66.7 | 1.00 | A | | | |
| | | | Cr-51 | pCi/L | 249 | 226 | 1.10 | A | | | |
| | | | Cs-134 | pCi/L | 116 | 128 | 0.91 | A | | | |
| | | | Cs-137 | pCi/L | 106 | 114 | 0.93 | A | | | |
| | | | Co-58 | pCi/L | 95.4 | 97.5 | 0.98 | A | | | |
| | | | Mn-54 | pCi/L | 147 | 151 | 0.97 | A | | | |
| | | | Fe-59 | pCi/L | 53.1 | 54.8 | 0.97 | A | | | |
| | | | Zn-65 | pCi/L | 175 | 180 | 0.97 | A | | | |
| | | | Co-60 | pCi/L | 150 | 157 | 0.96 | A | | | |
| | | | September 2011 | E8073-396 | AP | Ce-141 | pCi | 66.6 | 67.5 | 0.99 | A |
| | | | | | | Cr-51 | pCi | 263 | 229 | 1.15 | A |
| | | | | | | Cs-134 | pCi | 139 | 130 | 1.07 | A |
| | | | | | | Cs-137 | pCi | 110 | 115 | 0.96 | A |
| Co-58 | pCi | 108 | | | | 98.6 | 1.10 | A | | | |
| Mn-54 | pCi | 152 | | | | 153 | 0.99 | A | | | |
| Fe-59 | pCi | 57.5 | | | | 55.5 | 1.04 | A | | | |
| Zn-65 | pCi | 190 | | | | 183 | 1.04 | A | | | |
| September 2011 | E8072-396 | Charcoal | I-131 | pCi | 77.6 | 80.6 | 0.96 | A | | | |
| | | | | | | | | | | | |
| December, 2011 | E8230-396 | Milk | Sr-89 | pCi/L | 93.3 | 93.1 | 1.00 | A | | | |
| | | | Sr-90 | pCi/L | 12.7 | 15.4 | 0.82 | A | | | |
| December, 2011 | E8231-396 | Milk | I-131 | pCi/L | 82.5 | 90.2 | 0.91 | A | | | |
| | | | Ce-141 | pCi/L | not provided by Analytics for this study | | | | | | |
| | | | Cr-51 | pCi/L | 465 | 566 | 0.82 | A | | | |
| | | | Cs-134 | pCi/L | 142 | 171 | 0.83 | A | | | |
| | | | Cs-137 | pCi/L | 185 | 210 | 0.88 | A | | | |
| | | | Co-58 | pCi/L | 177 | 221 | 0.80 | A | | | |
| | | | Mn-54 | pCi/L | 208 | 241 | 0.86 | A | | | |
| | | | Fe-59 | pCi/L | 164 | 183 | 0.90 | A | | | |
| | | | Zn-65 | pCi/L | 259 | 291 | 0.89 | A | | | |
| | | | Co-60 | pCi/L | 224 | 270 | 0.83 | A | | | |
| | | | December, 2011 | E8233-396 | AP | Ce-141 | pCi | not provided by Analytics for this study | | | |
| Cr-51 | pCi | 344 | | | | 368 | 0.93 | A | | | |
| Cs-134 | pCi | 105 | | | | 111 | 0.95 | A | | | |
| Cs-137 | pCi | 129 | | | | 137 | 0.94 | A | | | |
| Co-58 | pCi | 145 | | | | 144 | 1.01 | A | | | |
| Mn-54 | pCi | 137 | | | | 157 | 0.87 | A | | | |
| Fe-59 | pCi | 119 | | | | 119 | 1.00 | A | | | |
| Zn-65 | pCi | 145 | | | | 190 | 0.76 | W | | | |
| Co-60 | pCi | 168 | 176 | 0.95 | A | | | | | | |

TABLE D-1 ANALYTICS ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
 TELEDYNE BROWN ENGINEERING, 2011
 (PAGE 3 OF 3)

| Month/Year | Identification Number | Matrix | Nuclide | Units | Reported Value (a) | Known Value (b) | Ratio (c) TBE/Analytics | Evaluation (d) |
|---------------|-----------------------|----------|---------|-------|--------------------|-----------------|-------------------------|----------------|
| December 2011 | E8232-396 | Charcoal | I-131 | pCi | 100 | 89.5 | 1.12 | A |

(1) Sample appears to be biased high. Corrective Action evaluated after the 2nd Quarter Analytics PE sample; no action required. NCR 11-13

(a) Teledyne Brown Engineering reported result.

(b) The Analytics known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.

(c) Ratio of Teledyne Brown Engineering to Analytics results.

(d) Analytics evaluation based on TBE internal QC limits: A= Acceptable. Reported result falls within ratio limits of 0.80-1.20.

W-Acceptable with warning. Reported result falls within 0.70-0.80 or 1.20-1.30. N = Not Acceptable. Reported result falls outside the ratio limits of < 0.70 and > 1.30.

TABLE D-2

**ERA ENVIRONMENTAL RADIOACTIVITY CROSS CHECK PROGRAM
TELEDYNE BROWN ENGINEERING, 2011**

(PAGE 1 OF 1)

| Month/Year | Identification Number | Media | Nuclide | Units | Reported Value (a) | Known Value (b) | Control Limits | Evaluation (c) |
|---------------|-----------------------|-------|---------|---------|--------------------|-----------------|----------------|----------------|
| May 2011 | RAD-85 | Water | Sr-89 | pCi/L | 59.8 | 63.2 | 51.1 - 71.2 | A |
| | | | Sr-90 | pCi/L | 42.5 | 42.5 | 31.3 - 48.8 | A |
| | | | Ba-133 | pCi/L | 73.3 | 75.3 | 63.0 - 82.8 | A |
| | | | Cs-134 | pCi/L | 64.9 | 72.9 | 59.5 - 80.2 | A |
| | | | Cs-137 | pCi/L | 74.6 | 77.0 | 69.3 - 87.4 | A |
| | | | Co-60 | pCi/L | 87.8 | 88.8 | 79.9 - 100 | A |
| | | | Zn-65 | pCi/L | 103 | 98.9 | 89.0 - 118 | A |
| | | | Gr-A | pCi/L | 64.1 | 50.1 | 26.1 - 62.9 | N (1) |
| | | | Gr-B | pCi/L | 51.8 | 49.8 | 33.8 - 56.9 | A |
| | | | I-131 | pCi/L | 27.4 | 27.5 | 22.9 - 32.3 | A |
| | | | U-Nat | pCi/L | 38.5 | 39.8 | 32.2 - 44.4 | A |
| | | | H-3 | pCi/L | 10057 | 10200 | 8870 - 11200 | A |
| | | | | MRAD-14 | Filter | Gr-A | pCi/filter | 79.7 |
| November 2011 | RAD-87 | Water | Sr-89 | pCi/L | 81.0 | 69.7 | 56.9 - 77.9 | N (2) |
| | | | Sr-90 | pCi/L | 35.5 | 41.4 | 30.2 - 47.2 | A |
| | | | Ba-133 | pCi/L | 90.7 | 96.9 | 81.8 - 106 | A |
| | | | Cs-134 | pCi/L | 36.6 | 33.4 | 26.3 - 36.7 | A |
| | | | Cs-137 | pCi/L | 44.7 | 44.3 | 39.4 - 51.7 | A |
| | | | Co-60 | pCi/L | 118.7 | 119 | 107 - 133 | A |
| | | | Zn-65 | pCi/L | 80.2 | 76.8 | 68.9 - 92.5 | A |
| | | | Gr-A | pCi/L | 34.2 | 53.2 | 27.8 - 66.6 | A |
| | | | Gr-B | pCi/L | 39.3 | 45.9 | 30.9 - 53.1 | A |
| | | | I-131 | pCi/L | 22.9 | 27.5 | 22.9 - 32.3 | A |
| | | | U-Nat | pCi/L | 46.8 | 48.6 | 39.4 - 54.0 | A |
| | | | H-3 | pCi/L | 15733 | 17400 | 15200 - 19100 | A |
| | | | | MRAD-15 | Filter | Gr-A | pCi/filter | 44.6 |

(1) The solids on the planchet exceeded 100 mg, which was beyond the range of the efficiency curve. NCR 11-08

(2) Sr-89 TBE to known ratio of 1.16 fell within acceptable range of $\pm 20\%$. No action required. NCR 11-16

(a) Teledyne Brown Engineering reported result.

(b) The ERA known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.

(c) ERA evaluation: A=acceptable. Reported result falls within the Warning Limits. NA=not acceptable. Reported result falls outside of the Control Limits. CE=check for Error. Reported result falls within the Control Limits and outside of the Warning Limit.

TABLE D-3

DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2011

(PAGE 1 OF 2)

| Month/Year | Identification Number | Media | Nuclide | Units | Reported Value (a) | Known Value (b) | Acceptance Range | Evaluation (c) |
|----------------|-----------------------|--------|-----------|-----------|--------------------|-----------------|------------------|----------------|
| March 2011 | 11-MaW24 | Water | Cs-134 | Bq/L | 19.1 | 21.5 | 15.1 - 28.0 | A |
| | | | Cs-137 | Bq/L | 29.0 | 29.4 | 20.6 - 38.2 | A |
| | | | Co-57 | Bq/L | 0.139 | | (1) | A |
| | | | Co-60 | Bq/L | 23.9 | 24.6 | 17.2 - 32.0 | A |
| | | | H-3 | Bq/L | 265 | 243 | 170 - 316 | A |
| | | | Mn-54 | Bq/L | 31.8 | 31.6 | 22.1 - 41.1 | A |
| | | | K-40 | Bq/L | 94.8 | 91 | 64 - 118 | A |
| | | | Sr-90 | Bq/L | 9.64 | 8.72 | 6.10 - 11.34 | A |
| | | | Zn-65 | Bq/L | -0.142 | | (1) | A |
| | 11-GrW24 | Water | Gr-A | Bq/L | 0.767 | 1.136 | 0.341 - 1.931 | A |
| | | | Gr-B | Bq/L | 3.43 | 2.96 | 1.48 - 4.44 | A |
| | 11-MaS24 | Soil | Cs-134 | Bq/kg | 612 | 680 | 476 - 884 | A |
| | | | Cs-137 | Bq/kg | 772 | 758 | 531 - 985 | A |
| | | | Co-57 | Bq/kg | 910 | 927 | 649 - 1205 | A |
| | | | Co-60 | Bq/kg | 500 | 482 | 337 - 627 | A |
| | | | Mn-54 | Bq/kg | 0.607 | | (1) | A |
| | | | K-40 | Bq/kg | 569 | 540 | 378 - 702 | A |
| | | | Sr-90 | Bq/kg | NR | 160 | 112 - 208 | N (2) |
| | | | Zn-65 | Bq/kg | 1497 | 1359 | 951 - 1767 | A |
| | 11-RdF24 | AP | Cs-134 | Bq/sample | 3.26 | 3.49 | 2.44 - 4.54 | A |
| | | | Cs-137 | Bq/sample | 2.36 | 2.28 | 1.60 - 2.96 | A |
| | | | Co-57 | Bq/sample | 3.30 | 3.33 | 2.33 - 4.33 | A |
| | | | Co-60 | Bq/sample | 0.0765 | | (1) | A |
| | | | Mn-54 | Bq/sample | 2.84 | 2.64 | 1.85 - 3.43 | A |
| | | | Sr-90 | Bq/sample | NR | 1.36 | 0.95 - 1.77 | N (2) |
| | | | Zn-65 | Bq/sample | 3.30 | 3.18 | 2.23 - 4.13 | A |
| | 11-GrF24 | AP | Gr-A | Bq/sample | 0.101 | 0.659 | 0.198 - 1.120 | N (3) |
| | | | Gr-B | Bq/sample | 1.23 | 1.323 | 0.662 - 1.985 | A |
| 11-RdV24 | Vegetation | Cs-134 | Bq/sample | 4.97 | 5.50 | 3.85 - 7.15 | A | |
| | | Cs-137 | Bq/sample | 0.0356 | | (1) | A | |
| | | Co-57 | Bq/sample | 10.8 | 9.94 | 6.96 - 12.92 | A | |
| | | Co-60 | Bq/sample | 4.89 | 4.91 | 3.44 - 6.38 | A | |
| | | Mn-54 | Bq/sample | 6.42 | 6.40 | 4.48 - 8.32 | A | |
| | | Sr-90 | Bq/sample | NR | 2.46 | 1.72 - 3.20 | N (2) | |
| | | Zn-65 | Bq/sample | 3.07 | 2.99 | 2.09 - 3.89 | A | |
| September 2011 | 11-MaW25 | Water | Cs-134 | Bq/L | 16.0 | 19.1 | 13.4 - 24.8 | A |
| | | | Cs-137 | Bq/L | 0.0043 | | (1) | A |
| | | | Co-57 | Bq/L | 33.1 | 36.6 | 25.6 - 47.6 | A |
| | | | Co-60 | Bq/L | 26.9 | 29.3 | 20.5 - 38.1 | A |
| | | | H-3 | Bq/L | 1011 | 1014 | 710 - 1318 | A |
| | | | Mn-54 | Bq/L | 23.2 | 25.0 | 17.5 - 32.5 | A |
| | | | K-40 | Bq/L | 147 | 156 | 109 - 203 | A |
| | | | Sr-90 | Bq/L | 15.8 | 14.2 | 9.9 - 18.5 | A |
| | | | Zn-65 | Bq/L | 27.3 | 28.5 | 20.0 - 37.1 | A |

TABLE D-3

DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)
TELEDYNE BROWN ENGINEERING, 2011

(PAGE 2 OF 2)

| Month/Year | Identification Number | Media | Nuclide | Units | Reported Value (a) | Known Value (b) | Acceptance Range | Evaluation (c) |
|----------------|-----------------------|------------|---------|-----------|--------------------|-----------------|------------------|----------------|
| September 2011 | 11-GrW25 | Water | Gr-A | Bq/L | 0.894 | 0.866 | 0.260 - 1.472 | A |
| | | | Gr-B | Bq/L | 5.87 | 4.81 | 2.41 - 7.22 | A |
| | 11-MaS25 | Soil | Cs-134 | Bq/kg | -0.213 | | (1) | A |
| | | | Cs-137 | Bq/kg | 1110 | 979 | 685 - 1273 | A |
| | | | Co-57 | Bq/kg | 1290 | 1180 | 826 - 1534 | A |
| | | | Co-60 | Bq/kg | 731 | 644 | 451 - 837 | A |
| | | | Mn-54 | Bq/kg | 987 | 848 | 594 - 1102 | A |
| | | | K-40 | Bq/kg | 753 | 625 | 438 - 813 | W |
| | | | Sr-90 | Bq/kg | 276 | 320 | 224 - 416 | A |
| | | | Zn-65 | Bq/kg | 1870 | 1560 | 1092 - 2028 | A |
| September 2011 | 11-RdF25 | AP | Cs-134 | Bq/sample | -0.043 | | (1) | A |
| | | | Cs-137 | Bq/sample | 3.09 | 2.60 | 1.82 - 3.38 | A |
| | | | Co-57 | Bq/sample | 5.36 | 5.09 | 3.56 - 6.62 | A |
| | | | Co-60 | Bq/sample | 3.41 | 3.20 | 2.24 - 4.16 | A |
| | | | Mn-54 | Bq/sample | 0.067 | | (1) | A |
| | | | Sr-90 | Bq/sample | 1.84 | 1.67 | 1.17 - 2.17 | A |
| | | | Zn-65 | Bq/sample | 5.17 | 4.11 | 2.88 - 5.34 | W |
| | 11-GrF25 | AP | Gr-A | Bq/sample | 0.0058 | | (1) | A |
| | | | Gr-B | Bq/sample | -0.01 | | (1) | A |
| | 11-RdV25 | Vegetation | Cs-134 | Bq/sample | 0.0081 | | (1) | A |
| | | | Cs-137 | Bq/sample | 4.94 | 4.71 | 3.30 - 6.12 | A |
| | | | Co-57 | Bq/sample | 0.0639 | | (1) | A |
| | | | Co-60 | Bq/sample | 3.36 | 3.38 | 2.37 - 4.39 | A |
| | | | Mn-54 | Bq/sample | 5.89 | 5.71 | 4.00 - 7.42 | A |
| | | | Sr-90 | Bq/sample | 1.31 | 1.26 | 0.88 - 1.64 | A |
| | | | Zn-65 | Bq/sample | 6.54 | 6.39 | 4.47 - 8.31 | A |

(1) False positive test.

(2) Evaluated as failed due to not reporting a previously reported analyte. NCR 11-11

(3) The filter for Gross Alpha was counted on the wrong side. Recounted on the correct side resulted in acceptable results. NCR 11-11

(a) Teledyne Brown Engineering reported result.

(b) The MAPEP known value is equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation.

(c) DOE/MAPEP evaluation: A=acceptable, W=acceptable with warning, N=not acceptable.

**TABLE D-4 ERA (a) STATISTICAL SUMMARY PROFICIENCY TESTING PROGRAM^a
ENVIRONMENTAL, INC., 2011
(Page 1 of 1)**

| Lab Code | Date | Analysis | Concentration (pCi/L) | | | Acceptance |
|-----------------------|----------|-----------|--------------------------------|-------------------------|----------------|------------|
| | | | Laboratory Result ^b | ERA Result ^c | Control Limits | |
| STW-1243 | 04/04/11 | Sr-89 | 68.2 ± 5.8 | 63.2 | 51.1 - 71.2 | Pass |
| STW-1243 | 04/04/11 | Sr-90 | 44.3 ± 2.4 | 42.5 | 31.3 - 48.8 | Pass |
| STW-1244 | 04/04/11 | Ba-133 | 69.8 ± 3.9 | 75.3 | 63.0 - 82.8 | Pass |
| STW-1244 | 04/04/11 | Co-60 | 87.9 ± 3.8 | 88.8 | 79.9 - 100.0 | Pass |
| STW-1244 | 04/04/11 | Cs-134 | 69.5 ± 3.7 | 72.9 | 59.5 - 80.2 | Pass |
| STW-1244 | 04/04/11 | Cs-137 | 77.9 ± 5.3 | 77.0 | 69.3 - 87.4 | Pass |
| STW-1244 | 04/04/11 | Zn-65 | 105.2 ± 8.4 | 98.9 | 89.0 - 118.0 | Pass |
| STW-1245 | 04/04/11 | Gr. Alpha | 41.5 ± 2.3 | 50.1 | 26.1 - 62.9 | Pass |
| STW-1245 | 04/04/11 | Gr. Beta | 48.9 ± 1.8 | 49.8 | 33.8 - 56.9 | Pass |
| STW-1246 | 04/04/11 | I-131 | 26.6 ± 1.7 | 27.5 | 22.9 - 32.3 | Pass |
| STW-1248 | 04/04/11 | H-3 | 10322 ± 285 | 10200.0 | 8870 - 11200 | Pass |
| STW-1256 | 10/07/11 | Sr-89 | 68.7 ± 6.0 | 69.7 | 56.9 - 77.9 | Pass |
| STW-1256 | 10/07/11 | Sr-90 | 36.9 ± 2.4 | 41.1 | 30.2 - 47.2 | Pass |
| STW-1257 | 10/07/11 | Ba-133 | 88.2 ± 7.8 | 96.9 | 81.8 - 106.0 | Pass |
| STW-1257 | 10/07/11 | Co-60 | 116.5 ± 7.1 | 119.0 | 107.0 - 133.0 | Pass |
| STW-1257 ^d | 10/07/11 | Cs-134 | 38.8 ± 8.0 | 33.4 | 26.3 - 36.7 | Fail |
| STW-1257 | 10/07/11 | Cs-137 | 45.6 ± 7.3 | 44.3 | 39.4 - 51.7 | Pass |
| STW-1257 | 10/07/11 | Zn-65 | 84.9 ± 15.4 | 76.8 | 68.9 - 92.5 | Pass |
| STW-1258 | 10/07/11 | Gr. Alpha | 35.7 ± 3.8 | 53.2 | 27.8 - 66.6 | Pass |
| STW-1258 | 10/07/11 | Gr. Beta | 36.1 ± 3.3 | 45.9 | 30.9 - 53.1 | Pass |
| STW-1259 | 10/07/11 | I-131 | 25.0 ± 1.1 | 27.5 | 22.9 - 32.3 | Pass |
| STW-1261 | 10/07/11 | H-3 | 17435 ± 382 | 17400 | 15200 - 19100 | Pass |

^a Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the crosscheck program for proficiency testing in drinking water conducted by Environmental Resources Associates (ERA).

^b Unless otherwise indicated, the laboratory result is given as the mean ± standard deviation for three determinations.

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

^d The sample was reanalyzed. Result of reanalysis was acceptable, 32.9 ± 7.4 pCi/L.

TABLE D-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)^a
 ENVIRONMENTAL, INC., 2011
 (Page 1 of 2)

| Concentration ^b | | | | | | |
|----------------------------|----------|-----------|-------------------|----------|---------------------|------------|
| Lab Code ^c | Date | Analysis | Laboratory result | Activity | Limits ^d | Acceptance |
| STW-1237 | 02/01/11 | Co-57 | < 0.2 | 0.00 | - | Pass |
| STW-1237 | 02/01/11 | Co-60 | 24.10 ± 0.40 | 24.60 | 17.20 - 32.00 | Pass |
| STW-1237 | 02/01/11 | Cs-134 | 19.80 ± 0.40 | 21.50 | 15.10 - 28.00 | Pass |
| STW-1237 | 02/01/11 | Cs-137 | 29.40 ± 0.50 | 29.40 | 20.60 - 38.20 | Pass |
| STW-1237 | 02/01/11 | H-3 | 238.90 ± 8.80 | 243.00 | 170.00 - 316.00 | Pass |
| STW-1237 | 02/01/11 | K-40 | 95.40 ± 3.10 | 91.00 | 64.00 - 118.00 | Pass |
| STW-1237 | 02/01/11 | Mn-54 | 32.50 ± 0.60 | 31.60 | 22.10 - 41.10 | Pass |
| STW-1237 | 02/01/11 | Sr-90 | 8.70 ± 0.70 | 8.72 | 6.10 - 11.34 | Pass |
| STW-1237 | 02/01/11 | Zn-65 | < 0.5 | 0.00 | - | Pass |
| STW-1238 | 02/01/11 | Gr. Alpha | 0.82 ± 0.07 | 1.14 | 0.34 - 1.93 | Pass |
| STW-1238 | 02/01/11 | Gr. Beta | 2.82 ± 0.07 | 2.96 | 1.48 - 4.44 | Pass |
| STVE-1239 | 02/01/11 | Co-57 | 11.27 ± 0.21 | 9.94 | 6.96 - 12.92 | Pass |
| STVE-1239 | 02/01/11 | Co-60 | 4.95 ± 0.16 | 4.91 | 3.44 - 6.38 | Pass |
| STVE-1239 | 02/01/11 | Cs-134 | 5.18 ± 0.19 | 5.50 | 3.85 - 7.15 | Pass |
| STVE-1239 | 02/01/11 | Cs-137 | < 0.09 | 0.00 | - | Pass |
| STVE-1239 | 02/01/11 | Mn-54 | 6.91 ± 0.25 | 6.40 | 4.48 - 8.32 | Pass |
| STVE-1239 | 02/01/11 | Zn-65 | 3.10 ± 0.32 | 2.99 | 2.09 - 3.89 | Pass |
| STSO-1240 | 02/01/11 | Co-57 | 984.10 ± 4.10 | 927.00 | 649.00 - 1205.00 | Pass |
| STSO-1240 | 02/01/11 | Co-60 | 540.70 ± 3.00 | 482.00 | 337.00 - 627.00 | Pass |
| STSO-1240 | 02/01/11 | Cs-134 | 726.70 ± 5.92 | 680.00 | 476.00 - 884.00 | Pass |
| STSO-1240 | 02/01/11 | Cs-137 | 883.10 ± 4.70 | 758.00 | 531.00 - 985.00 | Pass |
| STSO-1240 | 02/01/11 | K-40 | 622.70 ± 16.70 | 540.00 | 378.00 - 702.00 | Pass |
| STSO-1240 | 02/01/11 | Mn-54 | -0.30 ± 1.00 | 0.00 | - | Pass |
| STSO-1240 | 02/01/11 | Zn-65 | 1671.00 ± 13.10 | 1359.00 | 951.00 - 1767.00 | Pass |
| STAP-1241 | 02/01/11 | Co-57 | 3.48 ± 0.06 | 3.33 | 2.33 - 4.33 | Pass |
| STAP-1241 | 02/01/11 | Co-60 | 0.00 ± 0.02 | 0.00 | -0.10 - 0.10 | Pass |
| STAP-1241 | 02/01/11 | Cs-134 | 3.44 ± 0.27 | 3.49 | 2.44 - 4.54 | Pass |
| STAP-1241 | 02/01/11 | Cs-137 | 2.46 ± 0.27 | 2.28 | 1.60 - 2.96 | Pass |
| STAP-1241 | 02/01/11 | Gr. Alpha | 0.39 ± 0.05 | 0.66 | 0.20 - 1.12 | Pass |
| STAP-1241 | 02/01/11 | Gr. Beta | 1.54 ± 0.07 | 1.32 | 0.66 - 1.99 | Pass |
| STAP-1241 | 02/01/11 | Mn-54 | 2.90 ± 0.10 | 2.64 | 1.85 - 3.43 | Pass |
| STAP-1241 e | 02/01/11 | Sr-90 | 1.89 ± 0.15 | 1.36 | 0.95 - 1.77 | Fail |
| STAP-1241 | 02/01/11 | Zn-65 | 3.80 ± 0.18 | 3.18 | 2.23 - 4.13 | Pass |
| STVE-1250 | 08/01/11 | Co-57 | 0.01 ± 0.02 | 0.00 | - | Pass |
| STVE-1250 | 08/01/11 | Co-60 | 3.57 ± 0.13 | 3.38 | 2.37 - 4.39 | Pass |
| STVE-1250 | 08/01/11 | Cs-134 | -0.02 ± 0.04 | 0.00 | -0.10 - 0.10 | Pass |
| STVE-1250 | 08/01/11 | Cs-137 | 5.28 ± 0.20 | 4.71 | 3.30 - 6.12 | Pass |
| STVE-1250 | 08/01/11 | Mn-54 | 6.48 ± 0.22 | 5.71 | 4.00 - 7.42 | Pass |
| STVE-1250 | 08/01/11 | Zn-65 | 7.35 ± 0.34 | 6.39 | 4.47 - 8.31 | Pass |

**TABLE D-5 DOE'S MIXED ANALYTE PERFORMANCE EVALUATION PROGRAM (MAPEP)^a
ENVIRONMENTAL, INC., 2011
(Page 2 of 2)**

| Lab Code ^c | Date | Analysis | Laboratory result | Concentration ^b | | Acceptance |
|------------------------|----------|-----------|-------------------|----------------------------|-----------------------------|------------|
| | | | | Known Activity | Control Limits ^d | |
| STSO-1251 | 08/01/11 | Co-57 | 1333.90 ± 4.20 | 1180.00 | 826.00 - 1534.00 | Pass |
| STSO-1251 | 08/01/11 | Co-60 | 701.30 ± 3.40 | 644.00 | 451.00 - 837.00 | Pass |
| STSO-1251 | 08/01/11 | Cs-134 | 0.71 ± 1.05 | 0.00 | - | Pass |
| STSO-1251 | 08/01/11 | Cs-137 | 1106.00 ± 5.60 | 979.00 | 685.00 - 1273.00 | Pass |
| STSO-1251 | 08/01/11 | K-40 | 749.20 ± 19.00 | 625.00 | 438.00 - 813.00 | Pass |
| STSO-1251 | 08/01/11 | Mn-54 | 984.30 ± 5.40 | 848.00 | 594.00 - 1102.00 | Pass |
| STSO-1251 ^f | 08/01/11 | Sr-90 | 219.40 ± 16.70 | 320.00 | 224.00 - 416.00 | Fail |
| STSO-1251 | 08/01/11 | Zn-65 | 1639.90 ± 11.40 | 1560.00 | 1092.00 - 2028.00 | Pass |
| STAP-1252 | 08/01/11 | Co-57 | 5.06 ± 0.08 | 5.09 | 3.56 - 6.62 | Pass |
| STAP-1252 | 08/01/11 | Co-60 | 3.13 ± 0.09 | 3.20 | 2.24 - 4.16 | Pass |
| STAP-1252 | 08/01/11 | Cs-134 | 0.01 ± 0.03 | 0.00 | -0.10 - 0.10 | Pass |
| STAP-1252 | 08/01/11 | Cs-137 | 2.61 ± 0.09 | 2.60 | 1.82 - 3.38 | Pass |
| STAP-1252 | 08/01/11 | Mn-54 | 0.01 ± 0.03 | 0.00 | -0.10 - 0.10 | Pass |
| STAP-1252 | 08/01/11 | Sr-90 | 1.65 ± 0.16 | 1.67 | 1.17 - 2.17 | Pass |
| STAP-1252 | 08/01/11 | Zn-65 | 4.46 ± 0.23 | 4.11 | 2.88 - 5.34 | Pass |
| STW-1254 | 08/01/11 | Co-57 | 37.20 ± 0.50 | 36.60 | 25.60 - 47.60 | Pass |
| STW-1254 | 08/01/11 | Co-60 | 28.80 ± 0.40 | 29.30 | 20.50 - 38.10 | Pass |
| STW-1254 | 08/01/11 | Cs-134 | 18.00 ± 0.60 | 19.10 | 13.40 - 24.80 | Pass |
| STW-1254 | 08/01/11 | Cs-137 | 0.06 ± 0.13 | 0.00 | - | Pass |
| STW-1254 | 08/01/11 | H-3 | 1039.90 ± 17.90 | 1014.00 | 710.00 - 1318.00 | Pass |
| STW-1254 | 08/01/11 | K-40 | 161.40 ± 4.10 | 156.00 | 109.00 - 203.00 | Pass |
| STW-1254 | 08/01/11 | Mn-54 | 25.70 ± 0.50 | 25.00 | 17.50 - 32.50 | Pass |
| STW-1254 | 08/01/11 | Sr-90 | 15.60 ± 1.80 | 14.20 | 9.90 - 18.50 | Pass |
| STW-1254 | 08/01/11 | Zn-65 | 30.20 ± 0.90 | 28.50 | 20.00 - 37.10 | Pass |
| STW-1255 | 08/01/11 | Gr. Alpha | 0.72 ± 0.12 | 0.87 | 0.26 - 1.47 | Pass |
| STW-1255 | 08/01/11 | Gr. Beta | 4.71 ± 0.15 | 4.81 | 2.41 - 7.22 | Pass |

^a Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the Department of Energy's Mixed Analyte Performance Evaluation Program, Idaho Operations office, Idaho Falls, Idaho

^b Results are reported in units of Bq/kg (soil), Bq/L (water) or Bq/total sample (filters, vegetation).

^c Laboratory codes as follows: STW (water), STAP (air filter), STSO (soil), STVE (vegetation).

^d MAPEP results are presented as the known values and expected laboratory precision (1 sigma, 1 determination) and control limits as defined by the MAPEP. A known value of "zero" indicates an analysis was included in the testing series as a "false positive". MAPEP does not provide control limits.

^e No errors found in calculation or procedure, results of reanalysis; 1.73 Bq/filter.

^f The analyses were repeated through a strontium column; mean result of triplicate analyses, 304.2 Bq/kg.

APPENDIX E

EFFLUENT DATA

TABLE OF CONTENTS

| | |
|---------------------------------------------------|---|
| INTRODUCTION | 1 |
| SUMMARY | 2 |
| 1.0. EFFLUENTS | 3 |
| 1.1. Gaseous Effluents to the Atmosphere | 3 |
| 1.2. Liquids Released to Illinois River | 3 |
| 2.0. SOLID RADIOACTIVE WASTE | 3 |
| 3.0. DOSE TO MAN | 3 |
| 3.1. Gaseous Effluent Pathways | 3 |
| 3.1.1. Noble Gases | 3 |
| 3.1.1.1. Gamma Dose Rates | 3 |
| 3.1.1.2. Beta Air and Skin Dose Rate | 4 |
| 3.1.2. Radioactive Iodine | 4 |
| 3.1.2.1. Dose to Thyroid | 5 |
| 3.2. Liquid Effluent Pathways | 5 |
| 3.3. Assessment of Dose to Member of Public | 5 |
| 4.0. SITE METEOROLOGY | 6 |

Table of Contents (cont.)

APPENDIX E-1 DATA TABLES AND FIGURES..... E-1.1

Station Releases

Table 1.1-1 Gaseous Effluents Summation of all Releases..... E-1.2
Table 1.2-1 Summation of all Liquid Releases..... E-1.3
Table 2.0-1 Solid Radwaste Annual Report E-1.4
Table 3.1-1 Maximum Doses Resulting from Airborne Releases..... E-1.5
Table 3.2-1 Maximum Doses Resulting from Liquid Effluents..... E-1.6
Table 3.3.1 10CFR20 Compliance Assessment E-1.7
Table 3.4-1 Maximum Doses Resulting from Airborne Releases Based
On Concurrent Meteorological Data E-1.8

INTRODUCTION

LaSalle County Station, a two-unit BWR station, is located near Marseilles, Illinois in LaSalle county, 3.5 miles south the Illinois River. Both units are rated for 3546 MWt. Unit 1 loaded fuel in March 1982. Unit 2 loaded fuel in late December 1983. The station has been designed to keep releases to the environment at levels below those specified in the regulations.

Liquid effluents, while no longer released from LaSalle County Station, were designed to be released to the Illinois River in controlled batches after radioassay of each batch. Gaseous effluents are released to the atmosphere after delay to permit decay of short-lived (noble) gases. Releases to the atmosphere are calculated on the basis of analyses of routine grab samples of noble gases and tritium as well as continuously collected composite samples of iodine and particulate radioactivity sampled during the course of the year. The results of effluent analyses are summarized on a monthly basis and reported to the Nuclear Regulatory Commission as required per Technical Specifications. Airborne concentrations of noble gases, tritium, I-131, and particulate radioactivity in offsite areas are calculated using effluent and meteorological data.

Environmental monitoring is conducted by sampling at indicator and control (background) locations in the vicinity of LaSalle County Station to measure changes in radiation or radioactivity levels that may be attributable to station operations. If significant changes attributable to LaSalle County Station are measured, these changes are correlated with effluent releases. External gamma radiation exposure from noble gases and internal dose from I-131 in milk are the critical pathways at this site; however, an environmental monitoring program is conducted which also includes these and many other pathways which are less significant in terms of radiation protection.

SUMMARY

Gaseous effluents for the period contributed to only a small fraction of the LaSalle County Station Radiological Effluent Controls Limits. Liquid effluents had no contribution to offsite dose, as no liquid radioactive discharges were conducted. Calculations of environmental concentrations based on effluent, Illinois River flow, and meteorological data for the period indicate that consumption by the public of radionuclides attributable to LaSalle County Station does not exceed regulatory limits. Radiation exposure from radionuclides releases to the atmosphere represented the critical pathway for the period with a maximum individual total dose estimated to be $8.94E-01$ mrem for the year, where a shielding and occupancy factor of 0.7 is assumed. The assessment of radiation doses is performed in accordance with the Offsite Dose Calculation Manual (ODCM), specifically, a comparison of preoperational studies with operational controls or with previous environmental surveillance reports and an assessment of the observed impacts of the plant operation on the environment. Control locations are basis for "preoperational data." The results of analysis confirm that the station is operating in compliance with 10CFR50 Appendix I, 10CFR20 and 40CFR190.

1.0 EFFLUENTS

1.1 Gaseous Effluents to the Atmosphere

Measured concentrations of noble gases, radioiodine, and particulate radioactivity released to the atmosphere during the year, are listed in Table 1.1-1. A total of $2.41\text{E}+03$ curies of fission and activation gases were released with an average release rate of $7.62\text{E}+01$ $\mu\text{Ci}/\text{sec}$.

A total of $2.61\text{E}-02$ curies of I-131 was released during the year with an average release rate of $8.30\text{E}-04$ $\mu\text{Ci}/\text{sec}$.

A total of $1.17\text{E}-02$ curies of beta-gamma emitters were released as airborne particulate matter with an average release rate of $3.67\text{E}-04$ $\mu\text{Ci}/\text{sec}$. Alpha-emitting radionuclides were below the lower limit of detection (LLD).

A total of $4.09\text{E}+01$ curies of tritium was released with an average release rate of $1.29\text{E}+00$ $\mu\text{Ci}/\text{sec}$.

1.2 Liquids Released to Illinois River

There were no liquid batch releases in 2011. Continuous release path activity was below applicable Lower Limits of Detection.

2.0 SOLID RADIOACTIVE WASTE

Solid radioactive wastes were shipped by truck to a disposal facility or to a waste processor. For further detail, refer the LaSalle 2011 Radioactive Effluent Release Report. This report was submitted to the USNRC by the required date of May 1st, 2012.

3.0 DOSE TO MAN

3.1 Gaseous Effluent Pathways

Table 3.1-1 summarizes the doses resulting from releases of airborne radioactivity via the different exposure pathways.

3.1.1 Noble Gases

3.1.1.1 Gamma Dose Rates

Unit 1 and Unit 2 gaseous releases at LaSalle

County Station are reported as Unit 1 releases due to a single station vent stack (SVS) release point. Offsite Gamma air and whole body dose rates are shown in Table 3.1-1 and were calculated based on measured release rates, isotopic composition of the noble gases, and average meteorological data for the period. Doses based on concurrent meteorological data are shown in Table 3.4-1. Based on measured effluents and meteorological data, the maximum total body dose to an individual would be 2.26E-02 mrem (Table 3.1-1) for the year, with an occupancy or shielding factor of 0.7 included. The maximum total body dose based on measured effluents and concurrent meteorological data would be 1.82E-02 mrem. (Table 3.4-1).

The maximum gamma air dose was 3.38E-02 mrad (Table 3.1-1) and 4.16E-03 mrad based on concurrent meteorological data (Table 3.4-1).

3.1.1.2 Beta Air and Skin Rates

The range of beta particles in air is relatively small (on the order of a few meters or less); consequently, plumes of gaseous effluents may be considered "infinite" for purpose of calculating the dose from beta radiation incident on the skin. However, the actual dose to sensitive skin tissues is difficult to calculate due to the effect of the beta particle energies, thickness of inert skin and clothing covering sensitive tissues. For purposes of this report the skin is taken to have a thickness of 7.0 mg/cm² and an occupancy factor of 1.0 is used. The skin dose from beta and gamma radiation for the year was 3.81E-02 (Table 3.1-1) and 4.24E-03 mrem (Table 3.4-1) based on concurrent meteorological data. The maximum offsite beta dose for the year was 1.45E-03 mrad (Table 3.1-1) and 1.38E-03 mrad (Table 3.4-1) based on concurrent meteorological data.

3.1.2 Radioactive Iodine

The human thyroid exhibits a significant capacity to

concentrate ingested or inhaled iodine. The radioiodine, I-131, released during routing operation of the plant, may be made available to man resulting in a dose to the thyroid. The principal pathway of interest for this radionuclide in ingestion of radioiodine in milk.

3.1.2.1 Dose to Thyroid

The hypothetical thyroid dose to a maximum exposed individual living near the station via ingestion of milk was calculated. The radionuclide considered was I-131 and the source of milk was taken to be the nearest dairy farm with the cows pastured from May through October. The maximum thyroid dose due to I-131 was 1.29E-01 mrem for the year (Table 3.1-1).

3.2 Liquid Effluent Pathways

The three principal pathways through the aquatic environment for potential doses to man from liquid waste are ingestion of potable water, eating aquatic foods, and exposure while on the shoreline. Not all of these pathways are significant or applicable at a given time but a reasonable approximation of the dose can be made by adjusting the dose formula for season of the year or type and degree of use of the aquatic environment. NRC developed equations* were used to calculate the doses to the whole body, lower gastro-intestinal tracts, thyroid, bone and skin; specific parameters for use in the equations are given in the Offsite Dose Calculation Manual. The maximum whole body dose was 0.00E+00 mrem and organ dose was 0.00E+00 for the year mrem (Table 3.2-1).

3.3 Assessment of Dose to Member of Public

During the period January to December, 2011, LaSalle County Station did not exceed these limits as shown in Table 3.1-1 and Table 3.2-1 (based on annual average meteorological data), and As shown in Table 3.3-1:

- The Radiological Effluent Technical Standards (RETS) limits on dose or dose commitment to an individual due to radioactive materials in liquid effluents from each reactor unit (1.5 mrem to the whole body or 5 mrem to any organ

during any calendar year; 3 mrem to the whole body or 10 mrem to any organ during the calendar year).

- The RETS limits on air dose in noble gases released in gaseous effluents to a member of the public from each reactor unit (5 mrad for gamma radiation or 10 mrad for beta radiation during any calendar quarter; 10 mrads for gamma radiation or 20 mrad for beta radiation during a calendar year).
- The RETS limits on dose to a member of the public due to iodine-131, iodine-133, tritium, and radionuclides in particulate form with half-lives greater than eight days in gaseous effluents released from each reactor unit (7.5 mrem to any organ during any calendar quarter; 15 mrem to any organ during any calendar year).
- The 10CFR20 limit on Total Effective Dose Equivalent to individual members of the public (100 mrem).

4.0 SITE METEOROLOGY

A summary of the site meteorological measurements taken during each calendar quarter of the year is given in Appendix F. The data are presented as cumulative joint frequency distributions of the wind direction for the 375' level and wind speed class by atmospheric stability class determined from the temperature difference between the 375' and 33' levels. Data recovery for these measurements was 99.8% during 2011.

*Nuclear Regulatory Commission, Regulatory Guide 1.109 (Rev. 1)

APPENDIX E-1

DATA TABLES AND FIGURES

Table 1.1-1

LASALLE COUNTY NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT (2011)
UNITS ONE AND TWO
DOCKET NUMBERS 50-373 AND 50-374
GASEOUS EFFLUENTS SUMMATION OF ALL RELEASES

| A. Fission & Activation Gases | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter4 | Est. Total Error % |
|------------------------------------------|-------------|------------------|------------------|------------------|-----------------|---------------------------|
| 1. Total Release | Ci | 3.45E+02 | 5.08E+02 | 7.69E+02 | 7.89E+02 | 2.50E+01 |
| 2. Average release rate for the period | μCi/sec | 4.43E+01 | 6.46E+01 | 9.68E+01 | 9.92E+01 | |
| 3. Percent of ODCM limit | % | * | * | * | * | |

| B. Iodine | | | | | | |
|----------------------------------------|---------|----------|----------|----------|----------|----------|
| 1. Total Iodine – 131. | Ci | 1.09E-02 | 2.72E-03 | 4.24E-03 | 8.22E-03 | 1.50E+01 |
| 2. Average release rate for the period | μCi/sec | 1.41E-03 | 3.46E-04 | 5.33E-04 | 1.03E-03 | |
| 3. Percent of ODCM limit | % | * | * | * | * | |

| C. Particulates | | | | | | |
|------------------------------------------|---------|----------|----------|----------|----------|----------|
| 1. Particulates with half-lives > 8 days | Ci | 4.44E-04 | 4.77E-04 | 4.77E-03 | 5.96E-03 | 3.50E+01 |
| 2. Average release rate for the period | μCi/sec | 5.70E-05 | 6.07E-05 | 6.00E-04 | 7.50E-04 | |
| 3. Percent of ODCM limit | % | * | * | * | * | |

| D. Tritium | | | | | | |
|----------------------------------------|---------|----------|----------|----------|----------|----------|
| 1. Total Release | Ci | 5.53E+00 | 9.66E+00 | 1.03E+01 | 1.54E+01 | 1.50E+01 |
| 2. Average release rate for the period | μCi/sec | 7.11E-01 | 1.23E+00 | 1.30E+00 | 1.93E+00 | |
| 3. Percent of ODCM limit | % | * | * | * | * | |

| E. Gross Alpha | | | | | | |
|----------------------------------------|---------|-----------|-----------|-----------|-----------|----------|
| 1. Total Release | Ci | <1.00E-11 | <1.00E-11 | <1.00E-11 | <1.00E-11 | 3.50E+01 |
| 2. Average release rate for the period | μCi/sec | <LLD | <LLD | <LLD | <LLD | |
| 3. Percent of ODCM limit | % | * | * | * | * | |

| F. Carbon-14 | | | | | | |
|----------------------------------------|---------|----------|----------|----------|----------|--|
| 1. Total Release | Ci | 8.39E+00 | 8.47E+00 | 8.61E+00 | 8.60E+00 | |
| 2. Average release rate for the period | μCi/sec | 1.08E+00 | 1.08E+00 | 1.08E+00 | 1.08E+00 | |
| 3. Percent of ODCM limit | % | * | * | * | * | |

*** This information is contained in the Radiological Impact on Man section of the report.

"<" Indicates activity of sample is less than LLD given in μCi/ml

Table 1.2-1

LASALLE COUNTY NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT (2011)
LIQUID RELEASES
UNIT 1 AND UNIT 2
SUMMATION OF ALL LIQUID RELEASES

| A. Fission & Activation Products | Unit | Quarter 1 | Quarter 2 | Quarter 3 | Quarter4 | Est. Total Error % |
|---------------------------------------------------------|-------------|------------------|------------------|------------------|-----------------|---------------------------|
| 1. Total Release (not including tritium, gases & alpha) | Ci | <LLD | <LLD | <LLD | <LLD | N/A |
| 2. Average diluted concentration during period | μCi/mL | <LLD | <LLD | <LLD | <LLD | |
| 3. Percent of applicable limit | % | * | * | * | * | |

| B. Tritium | | | | | | |
|------------------------------------------------|--------|------|------|------|------|-----|
| 1. Total Release | Ci | <LLD | <LLD | <LLD | <LLD | N/A |
| 2. Average diluted concentration during period | μCi/mL | <LLD | <LLD | <LLD | <LLD | |
| 3. Percent of applicable limit | % | * | * | * | * | |

| C. Dissolved & Entrained Gases | | | | | | |
|------------------------------------------------|--------|------|------|------|------|-----|
| 1. Total Release | Ci | <LLD | <LLD | <LLD | <LLD | N/A |
| 2. Average diluted concentration during period | μCi/mL | <LLD | <LLD | <LLD | <LLD | |
| 3. Percent of applicable limit | % | * | * | * | * | |

| D. Gross Alpha Activity | | | | | | |
|----------------------------------------|--------|------|------|------|------|-----|
| 1. Total Release | Ci | <LLD | <LLD | <LLD | <LLD | N/A |
| 2. Average release rate for the period | μCi/mL | <LLD | <LLD | <LLD | <LLD | |
| 3. Percent of ODCM limit | % | * | * | * | * | |

| | | | | | |
|--------------------------------------------------------|--------|----------|----------|----------|----------|
| E. Volume of Waste Released (prior to dilution) | Liters | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
|--------------------------------------------------------|--------|----------|----------|----------|----------|

| | | | | | |
|-------------------------------------------------------|--------|----------|----------|----------|----------|
| F. Volume of Dilution Water Used During Period | Liters | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
|-------------------------------------------------------|--------|----------|----------|----------|----------|

"*" This information is contained in the Radiological Impact on Man section of the report.

"<" Indicates activity of sample is less than LLD given in μCi/ml

Table 2.1-1

SOLID RADWASTE ANNUAL REPORT

LaSalle County Station

Table 2.1-1 deliberately deleted. For solid waste disposal detail, refer to the LaSalle County Station 2011 Effluent Report.

Table 3.1-1

LASALLE COUNTY NUCLEAR POWER STATION
 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT (2011)
 RADIOLOGICAL IMPACT ON MAN
 MAXIMUM DOSES RESULTING FROM RELEASES AND COMPLIANCE STATUS

| Infant Receptor | Quarterly Limit | Units | 1st Quarter | % of Limit | 2nd Quarter | % of Limit | 3rd Quarter | % of Limit | 4th Quarter | % of Limit | Annual Limit | % of Limit |
|-------------------|-----------------|-------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|--------------|------------|
| Gamma Air | 5.00E+00 | mRad | 6.23E-03 | 0.13 | 7.40E-03 | 0.15 | 1.00E-02 | 0.20 | 1.02E-02 | 0.21 | 1.00E+01 | 0.34 |
| Beta Air | 1.00E+01 | mRad | 2.54E-04 | 0.00 | 3.18E-04 | 0.00 | 4.31E-04 | 0.00 | 4.45E-04 | 0.00 | 2.00E+01 | 0.01 |
| NG Total Body | 2.50E+00 | mRem | 4.15E-03 | 0.17 | 4.93E-03 | 0.20 | 6.69E-03 | 0.27 | 6.82E-03 | 0.27 | 5.00E+00 | 0.45 |
| NG Skin | 7.50E+00 | mRem | 7.00E-03 | 0.09 | 8.31E-03 | 0.11 | 1.13E-02 | 0.15 | 1.15E-02 | 0.15 | 1.50E+01 | 0.25 |
| NNG Organ | 7.50E+00 | mRem | 5.37E-02 | 0.72 | 1.45E-02 | 0.19 | 2.20E-02 | 0.29 | 4.12E-02 | 0.55 | 1.50E+01 | 0.88 |
| Child Receptor | Quarterly Limit | Units | 1st Quarter | % of Limit | 2nd Quarter | % of Limit | 3rd Quarter | % of Limit | 4th Quarter | % of Limit | Annual Limit | % of Limit |
| Gamma Air | 5.00E+00 | mRad | 6.23E-03 | 0.13 | 7.40E-03 | 0.15 | 1.00E-02 | 0.20 | 1.02E-02 | 0.21 | 1.00E+01 | 0.34 |
| Beta Air | 1.00E+01 | mRad | 2.54E-04 | 0.00 | 3.18E-04 | 0.00 | 4.31E-04 | 0.00 | 4.45E-04 | 0.00 | 2.00E+01 | 0.01 |
| NG Total Body | 2.50E+00 | mRem | 4.15E-03 | 0.17 | 4.93E-03 | 0.20 | 6.69E-03 | 0.27 | 6.82E-03 | 0.27 | 5.00E+00 | 0.45 |
| NG Skin | 7.50E+00 | mRem | 7.00E-03 | 0.09 | 8.31E-03 | 0.11 | 1.13E-02 | 0.15 | 1.15E-02 | 0.15 | 1.50E+01 | 0.25 |
| NNG Organ | 7.50E+00 | mRem | 2.23E-02 | 0.30 | 6.10E-03 | 0.08 | 9.20E-03 | 0.12 | 1.71E-02 | 0.23 | 1.50E+01 | 0.36 |
| Teenager Receptor | Quarterly Limit | Units | 1st Quarter | % of Limit | 2nd Quarter | % of Limit | 3rd Quarter | % of Limit | 4th Quarter | % of Limit | Annual Limit | % of Limit |
| Gamma Air | 5.00E+00 | mRad | 6.23E-03 | 0.13 | 7.40E-03 | 0.15 | 1.00E-02 | 0.20 | 1.02E-02 | 0.21 | 1.00E+01 | 0.34 |
| Beta Air | 1.00E+01 | mRad | 2.54E-04 | 0.00 | 3.18E-04 | 0.00 | 4.31E-04 | 0.00 | 4.45E-04 | 0.00 | 2.00E+01 | 0.01 |
| NG Total Body | 2.50E+00 | mRem | 4.15E-03 | 0.17 | 4.93E-03 | 0.20 | 6.69E-03 | 0.27 | 6.82E-03 | 0.27 | 5.00E+00 | 0.45 |
| NG Skin | 7.50E+00 | mRem | 7.00E-03 | 0.09 | 8.31E-03 | 0.11 | 1.13E-02 | 0.15 | 1.15E-02 | 0.15 | 1.50E+01 | 0.25 |
| NNG Organ | 7.50E+00 | mRem | 1.12E-02 | 0.15 | 3.03E-03 | 0.04 | 4.61E-03 | 0.06 | 8.63E-03 | 0.12 | 1.50E+01 | 0.18 |
| Adult Receptor | Quarterly Limit | Units | 1st Quarter | % of Limit | 2nd Quarter | % of Limit | 3rd Quarter | % of Limit | 4th Quarter | % of Limit | Annual Limit | % of Limit |
| Gamma Air | 5.00E+00 | mRad | 6.23E-03 | 0.13 | 7.40E-03 | 0.15 | 1.00E-02 | 0.20 | 1.02E-02 | 0.21 | 1.00E+01 | 0.34 |
| Beta Air | 1.00E+01 | mRad | 2.54E-04 | 0.00 | 3.18E-04 | 0.00 | 4.31E-04 | 0.00 | 4.45E-04 | 0.00 | 2.00E+01 | 0.01 |
| NG Total Body | 2.50E+00 | mRem | 4.15E-03 | 0.17 | 4.93E-03 | 0.20 | 6.69E-03 | 0.27 | 6.82E-03 | 0.27 | 5.00E+00 | 0.45 |
| NG Skin | 7.50E+00 | mRem | 7.00E-03 | 0.09 | 8.31E-03 | 0.11 | 1.13E-02 | 0.15 | 1.15E-02 | 0.15 | 1.50E+01 | 0.25 |
| NNG Organ | 7.50E+00 | mRem | 7.08E-03 | 0.09 | 1.90E-03 | 0.03 | 2.90E-03 | 0.04 | 5.45E-03 | 0.07 | 1.50E+01 | 0.12 |

The LaSalle County Nuclear Power Station maximum expected annual dose from Carbon-14 has been calculated using the maximum gross thermal capacity at full power operation. The resultant bounding doses are based upon site specific assumptions of source term.

Table 3.2-1

LASALLE COUNTY NUCLEAR POWER STATION
 EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT (2011)
 RADIOLOGICAL IMPACT ON MAN
 MAXIMUM DOSES RESULTING FROM RELEASES AND COMPLIANCE STATUS

| Infant Receptor | Quarterly Limit | Units | 1st Quarter | % of Limit | 2nd Quarter | % of Limit | 3rd Quarter | % of Limit | 4th Quarter | % of Limit | Annual Limit | % of Limit |
|------------------------------------------------------------|-----------------|-------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|--------------|------------|
| 10CFR50 Appendix I compliance | | | | | | | | | | | | |
| Total Body | 1.50E+00 | mRem | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 3.00E+00 | 0.00 |
| Organ | 5.00E+00 | mRem | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 1.00E+01 | 0.00 |
| 40CFR141 compliance (nearest public drinking water) | | | | | | | | | | | | |
| Total Body | | mRem | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 4.00E+00 | 0.00 |
| Organ | | mRem | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 4.00E+00 | 0.00 |
| Child Receptor | | | | | | | | | | | | |
| 10CFR50 Appendix I compliance | | | | | | | | | | | | |
| Total Body | 1.50E+00 | mRem | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 3.00E+00 | 0.00 |
| Organ | 5.00E+00 | mRem | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 1.00E+01 | 0.00 |
| 40CFR141 compliance (nearest public drinking water) | | | | | | | | | | | | |
| Total Body | | mRem | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 4.00E+00 | 0.00 |
| Organ | | mRem | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 4.00E+00 | 0.00 |
| Teenager Receptor | | | | | | | | | | | | |
| 10CFR50 Appendix I compliance | | | | | | | | | | | | |
| Total Body | 1.50E+00 | mRem | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 3.00E+00 | 0.00 |
| Organ | 5.00E+00 | mRem | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 1.00E+01 | 0.00 |
| 40CFR141 compliance (nearest public drinking water) | | | | | | | | | | | | |
| Total Body | | mRem | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 4.00E+00 | 0.00 |
| Organ | | mRem | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 4.00E+00 | 0.00 |
| Adult Receptor | | | | | | | | | | | | |
| 10CFR50 Appendix I compliance | | | | | | | | | | | | |
| Total Body | 1.50E+00 | mRem | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 3.00E+00 | 0.00 |
| Organ | 5.00E+00 | mRem | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00 | 1.00E+01 | 0.00 |
| 40CFR141 compliance (nearest public drinking water) | | | | | | | | | | | | |
| Total Body | | mRem | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 4.00E+00 | 0.00 |
| Organ | | mRem | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 0.00E+00 | | 4.00E+00 | 0.00 |

Table 3.3-1

LASALLE COUNTY NUCLEAR POWER STATION
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT (2011)
RADIOLOGICAL IMPACT ON MAN
MAXIMUM DOSES RESULTING FROM RELEASES AND COMPLIANCE STATUS

10CFR20 / 40CFR190 Compliance

| | 1 st Quarter Dose (mRem) | 2 nd Quarter Dose (mRem) | 3 rd Quarter Dose (mRem) | 4 th Quarter Dose (mRem) | Annual Dose (mRem) | Annual Limit (mRem/yr) | % Annual Limit |
|---------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------|--------------------------|------------------------------|----------------------|
| Unit 1 | | | | | | | |
| U1 D ^{Ex} | 9.14E-02 | 1.02E-01 | 1.03E-01 | 1.05E-01 | 4.01E-01 | 25 | 1.60 |
| 40CFR190 Compliance | | | | | | | |
| U1 D ^{Tot} | 1.44E-01 | 1.16E-01 | 1.25E-01 | 1.46E-01 | 5.31E-01 | 100 | 0.53 |
| 10CFR20 Compliance | | | | | | | |
| Bone | 1.71E-04 | 4.40E-03 | 7.05E-03 | 7.11E-03 | 1.87E-02 | 25 | 0.07 |
| Liver | 1.96E-04 | 9.85E-04 | 1.61E-03 | 1.68E-03 | 4.47E-03 | 25 | 0.02 |
| Thyroid | 5.22E-02 | 1.40E-02 | 2.20E-02 | 4.12E-02 | 1.29E-01 | 75 | 0.17 |
| Kidney | 2.22E-04 | 9.91E-04 | 1.61E-03 | 1.69E-03 | 4.52E-03 | 25 | 0.02 |
| Lung | 8.28E-05 | 9.44E-04 | 1.53E-03 | 1.54E-03 | 4.10E-03 | 25 | 0.02 |
| GI-LLI | 8.24E-05 | 9.46E-04 | 1.55E-03 | 1.56E-03 | 4.13E-03 | 25 | 0.02 |
| Unit 2 | | | | | | | |
| U2 D ^{Ex} | 7.23E-02 | 9.61E-02 | 9.61E-02 | 9.84E-02 | 3.63E-01 | 25 | 1.45 |
| 40CFR190 Compliance | | | | | | | |
| U2 D ^{Tot} | 7.23E-02 | 9.61E-02 | 9.61E-02 | 9.84E-02 | 3.63E-01 | 100 | 0.36 |
| 10CFR20 Compliance | | | | | | | |
| Bone | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 25 | 0.00 |
| Liver | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 25 | 0.00 |
| Thyroid | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 75 | 0.00 |
| Kidney | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 25 | 0.00 |
| Lung | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 25 | 0.00 |
| GI-LLI | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 25 | 0.00 |

Table 3.4-1

Maximum Dose Resulting from Airborne Releases Based
On Current Meteorological Data

LaSalle County Generating Station:

| <u>Dose</u> | <u>Maximum Value</u> | <u>Sector Affected</u> |
|---------------------------------------|-------------------------------|------------------------|
| gamma air ⁽¹⁾ | 4.160 x 10 ⁻³ mrad | South |
| beta air ⁽²⁾ | 1.380 x 10 ⁻³ mrad | South |
| whole body ⁽³⁾ | 1.816 x 10 ⁻² mrem | South |
| skin ⁽⁴⁾ | 4.240 x 10 ⁻³ mrem | South |
| organ ⁽⁶⁾ (infant-thyroid) | 7.473 x 10 ⁻¹ mrem | South |

Compliance Status

| 10 CFR 50 Appendix I | Yearly Objective | % of App. I |
|-----------------------------|-------------------------|--------------------|
| gamma air | 10.0 mrad | 0.04 |
| beta air | 20.0 mrad | 0.01 |
| whole body | 5.0 mrem | 0.36 |
| skin | 15.0 mrem | 0.03 |
| organ | 15.0 mrem | 4.98 |

(1) Gamma Air Dose - GASPAR II, NUREG-0597
 (2) Beta Air Dose - GASPAR II, NUREG-0597
 (3) Whole Body Dose - GASPAR II, NUREG-0597
 (4) Skin Dose - GASPAR II, NUREG-0597
 (6) Inhalation and Food Pathways Dose - GASPAR II, NUREG-0597

APPENDIX F

METEOROLOGICAL DATA

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Extremely Unstable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| NNE | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| NE | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 4 | 3 | 0 | 0 | 7 |
| ESE | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| SE | 0 | 0 | 0 | 3 | 2 | 0 | 5 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 2 | 1 | 0 | 0 | 3 |
| SSW | 0 | 0 | 2 | 3 | 3 | 0 | 8 |
| SW | 0 | 0 | 2 | 4 | 1 | 0 | 7 |
| WSW | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WNW | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 5 | 0 | 0 | 5 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 23 | 20 | 6 | 0 | 50 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Moderately Unstable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 1 | 4 | 2 | 0 | 0 | 7 |
| NNE | 0 | 3 | 1 | 0 | 0 | 0 | 4 |
| NE | 0 | 0 | 6 | 2 | 0 | 0 | 8 |
| ENE | 0 | 1 | 2 | 1 | 0 | 0 | 4 |
| E | 0 | 1 | 1 | 1 | 0 | 0 | 3 |
| ESE | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| SE | 0 | 1 | 0 | 1 | 0 | 0 | 2 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 2 | 0 | 1 | 0 | 0 | 3 |
| SSW | 0 | 2 | 3 | 0 | 0 | 0 | 5 |
| SW | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| WSW | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| W | 0 | 0 | 2 | 1 | 0 | 0 | 3 |
| WNW | 0 | 1 | 5 | 0 | 1 | 0 | 7 |
| NW | 0 | 2 | 1 | 0 | 0 | 0 | 3 |
| NNW | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 20 | 26 | 9 | 1 | 0 | 56 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Slightly Unstable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 2 | 6 | 6 | 0 | 0 | 14 |
| NNE | 0 | 4 | 5 | 4 | 0 | 0 | 13 |
| NE | 0 | 2 | 3 | 11 | 0 | 0 | 16 |
| ENE | 0 | 1 | 0 | 5 | 0 | 0 | 6 |
| E | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| ESE | 0 | 1 | 1 | 1 | 0 | 0 | 3 |
| SE | 0 | 1 | 2 | 2 | 0 | 0 | 5 |
| SSE | 1 | 1 | 9 | 5 | 0 | 0 | 16 |
| S | 0 | 1 | 1 | 1 | 2 | 0 | 5 |
| SSW | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| SW | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| WSW | 0 | 0 | 4 | 2 | 1 | 0 | 7 |
| W | 0 | 2 | 1 | 0 | 0 | 0 | 3 |
| WNW | 0 | 2 | 3 | 2 | 1 | 0 | 8 |
| NW | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| NNW | 0 | 5 | 2 | 3 | 0 | 0 | 10 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1 | 22 | 39 | 45 | 7 | 0 | 114 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Neutral - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 3 | 25 | 34 | 28 | 0 | 0 | 90 |
| NNE | 3 | 15 | 16 | 7 | 3 | 0 | 44 |
| NE | 0 | 18 | 32 | 19 | 3 | 8 | 80 |
| ENE | 2 | 14 | 34 | 58 | 19 | 0 | 127 |
| E | 0 | 14 | 25 | 35 | 10 | 0 | 84 |
| ESE | 1 | 9 | 20 | 15 | 2 | 0 | 47 |
| SE | 0 | 1 | 10 | 8 | 5 | 0 | 24 |
| SSE | 0 | 1 | 7 | 5 | 6 | 0 | 19 |
| S | 0 | 6 | 18 | 2 | 1 | 0 | 27 |
| SSW | 1 | 20 | 12 | 7 | 1 | 0 | 41 |
| SW | 1 | 14 | 21 | 6 | 0 | 0 | 42 |
| WSW | 1 | 12 | 25 | 5 | 8 | 0 | 51 |
| W | 0 | 18 | 37 | 15 | 3 | 2 | 75 |
| WNW | 1 | 13 | 61 | 57 | 9 | 4 | 145 |
| NW | 0 | 4 | 31 | 42 | 1 | 0 | 78 |
| NNW | 1 | 7 | 49 | 35 | 10 | 5 | 107 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 14 | 191 | 432 | 344 | 81 | 19 | 1081 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 3
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011

Stability Class - Slightly Stable - 200Ft-33Ft Delta-T (F)

Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 1 | 20 | 2 | 0 | 0 | 0 | 23 |
| NNE | 0 | 16 | 8 | 0 | 0 | 0 | 24 |
| NE | 1 | 3 | 4 | 4 | 0 | 0 | 12 |
| ENE | 0 | 0 | 4 | 8 | 0 | 0 | 12 |
| E | 0 | 5 | 25 | 12 | 0 | 0 | 42 |
| ESE | 2 | 3 | 3 | 8 | 0 | 0 | 16 |
| SE | 2 | 7 | 9 | 13 | 1 | 0 | 32 |
| SSE | 2 | 5 | 2 | 7 | 0 | 0 | 16 |
| S | 2 | 2 | 26 | 14 | 3 | 0 | 47 |
| SSW | 0 | 6 | 21 | 17 | 1 | 0 | 45 |
| SW | 3 | 12 | 21 | 25 | 4 | 0 | 65 |
| WSW | 2 | 6 | 20 | 8 | 1 | 0 | 37 |
| W | 1 | 9 | 16 | 17 | 4 | 0 | 47 |
| WNW | 1 | 13 | 42 | 29 | 4 | 1 | 90 |
| NW | 0 | 12 | 30 | 7 | 0 | 0 | 49 |
| NNW | 1 | 12 | 4 | 0 | 0 | 0 | 17 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 18 | 131 | 237 | 169 | 18 | 1 | 574 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011

Stability Class - Moderately Stable - 200Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 6 | 9 | 0 | 0 | 0 | 15 |
| ESE | 1 | 7 | 3 | 0 | 0 | 0 | 11 |
| SE | 0 | 3 | 7 | 0 | 0 | 0 | 10 |
| SSE | 0 | 6 | 2 | 0 | 0 | 0 | 8 |
| S | 1 | 1 | 3 | 8 | 0 | 0 | 13 |
| SSW | 0 | 5 | 15 | 10 | 3 | 0 | 33 |
| SW | 0 | 0 | 8 | 17 | 4 | 0 | 29 |
| WSW | 0 | 3 | 17 | 14 | 2 | 0 | 36 |
| W | 0 | 3 | 23 | 7 | 2 | 0 | 35 |
| WNW | 1 | 9 | 13 | 3 | 2 | 3 | 31 |
| NW | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 5 | 45 | 100 | 59 | 13 | 3 | 225 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Extremely Stable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| SE | 0 | 6 | 5 | 0 | 0 | 0 | 11 |
| SSE | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| S | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| SSW | 0 | 4 | 3 | 2 | 0 | 0 | 9 |
| SW | 0 | 0 | 6 | 8 | 0 | 0 | 14 |
| WSW | 0 | 1 | 6 | 0 | 0 | 0 | 7 |
| W | 0 | 0 | 8 | 0 | 0 | 0 | 8 |
| WNW | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 14 | 32 | 10 | 0 | 0 | 56 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Extremely Unstable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Moderately Unstable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Slightly Unstable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSW | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| SW | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| WSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 1 | 2 | 0 | 2 | 5 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Neutral - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 1 | 10 | 21 | 33 | 35 | 3 | 103 |
| NNE | 1 | 17 | 15 | 9 | 9 | 7 | 58 |
| NE | 1 | 11 | 27 | 43 | 27 | 14 | 123 |
| ENE | 2 | 16 | 16 | 47 | 64 | 14 | 159 |
| E | 0 | 5 | 15 | 27 | 27 | 10 | 84 |
| ESE | 2 | 2 | 16 | 17 | 4 | 3 | 44 |
| SE | 2 | 3 | 7 | 9 | 15 | 3 | 39 |
| SSE | 0 | 0 | 12 | 11 | 7 | 6 | 36 |
| S | 0 | 3 | 14 | 21 | 4 | 6 | 48 |
| SSW | 0 | 4 | 15 | 12 | 8 | 5 | 44 |
| SW | 1 | 8 | 15 | 26 | 5 | 3 | 58 |
| WSW | 1 | 0 | 11 | 19 | 2 | 9 | 42 |
| W | 0 | 6 | 13 | 17 | 17 | 9 | 62 |
| WNW | 2 | 10 | 19 | 22 | 32 | 13 | 98 |
| NW | 0 | 10 | 38 | 48 | 64 | 8 | 168 |
| NNW | 0 | 4 | 21 | 20 | 12 | 13 | 70 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 13 | 109 | 275 | 381 | 332 | 126 | 1236 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 91
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Slightly Stable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 2 | 2 | 0 | 6 | 4 | 0 | 14 |
| NNE | 0 | 0 | 3 | 12 | 3 | 0 | 18 |
| NE | 0 | 2 | 7 | 10 | 2 | 0 | 21 |
| ENE | 0 | 1 | 2 | 9 | 4 | 0 | 16 |
| E | 1 | 3 | 8 | 11 | 10 | 1 | 34 |
| ESE | 0 | 2 | 5 | 8 | 13 | 6 | 34 |
| SE | 0 | 4 | 4 | 5 | 15 | 12 | 40 |
| SSE | 2 | 1 | 4 | 7 | 5 | 3 | 22 |
| S | 0 | 0 | 3 | 5 | 9 | 15 | 32 |
| SSW | 1 | 0 | 2 | 12 | 12 | 23 | 50 |
| SW | 0 | 0 | 11 | 19 | 25 | 27 | 82 |
| WSW | 0 | 4 | 1 | 13 | 5 | 17 | 40 |
| W | 2 | 1 | 3 | 9 | 6 | 16 | 37 |
| WNW | 0 | 3 | 7 | 20 | 39 | 28 | 97 |
| NW | 2 | 3 | 12 | 28 | 32 | 5 | 82 |
| NNW | 0 | 2 | 2 | 8 | 6 | 0 | 18 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 10 | 28 | 74 | 182 | 190 | 153 | 637 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 18
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Moderately Stable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 2 | 1 | 0 | 0 | 3 |
| NNE | 0 | 0 | 0 | 3 | 2 | 0 | 5 |
| NE | 0 | 2 | 3 | 0 | 0 | 0 | 5 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| ESE | 0 | 0 | 1 | 2 | 1 | 0 | 4 |
| SE | 0 | 0 | 0 | 2 | 2 | 0 | 4 |
| SSE | 0 | 0 | 2 | 1 | 3 | 1 | 7 |
| S | 0 | 0 | 2 | 6 | 3 | 4 | 15 |
| SSW | 0 | 1 | 1 | 1 | 1 | 8 | 12 |
| SW | 0 | 0 | 0 | 5 | 11 | 18 | 34 |
| WSW | 0 | 0 | 0 | 5 | 8 | 15 | 28 |
| W | 0 | 0 | 3 | 6 | 3 | 6 | 18 |
| WNW | 0 | 0 | 0 | 8 | 3 | 2 | 13 |
| NW | 0 | 0 | 0 | 3 | 2 | 0 | 5 |
| NNW | 0 | 0 | 3 | 1 | 0 | 0 | 4 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 3 | 17 | 46 | 39 | 54 | 159 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: January - March 2011
 Stability Class - Extremely Stable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| S | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| SSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| W | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| WNW | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| NW | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 2 | 6 | 5 | 0 | 13 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011

Stability Class - Extremely Unstable - 200Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 4 | 24 | 1 | 0 | 0 | 29 |
| NNE | 0 | 2 | 22 | 7 | 0 | 0 | 31 |
| NE | 0 | 0 | 3 | 4 | 0 | 0 | 7 |
| ENE | 0 | 4 | 2 | 5 | 0 | 0 | 11 |
| E | 1 | 2 | 4 | 1 | 0 | 0 | 8 |
| ESE | 0 | 1 | 3 | 1 | 4 | 0 | 9 |
| SE | 0 | 0 | 1 | 1 | 1 | 0 | 3 |
| SSE | 0 | 0 | 3 | 1 | 0 | 0 | 4 |
| S | 0 | 0 | 5 | 0 | 2 | 0 | 7 |
| SSW | 0 | 1 | 7 | 1 | 3 | 0 | 12 |
| SW | 0 | 0 | 3 | 2 | 3 | 0 | 8 |
| WSW | 0 | 1 | 0 | 4 | 0 | 0 | 5 |
| W | 0 | 0 | 3 | 4 | 0 | 0 | 7 |
| WNW | 0 | 1 | 2 | 0 | 0 | 0 | 3 |
| NW | 0 | 2 | 1 | 0 | 0 | 0 | 3 |
| NNW | 1 | 2 | 5 | 0 | 0 | 0 | 8 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 2 | 20 | 88 | 32 | 13 | 0 | 155 |

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011

Stability Class - Moderately Unstable - 200Ft-33Ft Delta-T (F)

Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 1 | 2 | 0 | 0 | 3 |
| NNE | 0 | 0 | 6 | 5 | 0 | 0 | 11 |
| NE | 0 | 0 | 9 | 10 | 2 | 0 | 21 |
| ENE | 0 | 1 | 4 | 7 | 3 | 0 | 15 |
| E | 0 | 0 | 4 | 4 | 0 | 0 | 8 |
| ESE | 0 | 1 | 0 | 2 | 0 | 1 | 4 |
| SE | 0 | 0 | 3 | 2 | 3 | 1 | 9 |
| SSE | 0 | 4 | 4 | 0 | 1 | 1 | 10 |
| S | 1 | 0 | 1 | 2 | 1 | 1 | 6 |
| SSW | 0 | 2 | 1 | 5 | 3 | 0 | 11 |
| SW | 0 | 0 | 0 | 4 | 2 | 0 | 6 |
| WSW | 0 | 0 | 1 | 8 | 1 | 0 | 10 |
| W | 0 | 0 | 3 | 7 | 3 | 0 | 13 |
| WNW | 0 | 0 | 0 | 4 | 0 | 1 | 5 |
| NW | 0 | 0 | 3 | 3 | 0 | 0 | 6 |
| NNW | 0 | 1 | 4 | 4 | 0 | 0 | 9 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1 | 9 | 44 | 69 | 19 | 5 | 147 |

Hours of calm in this stability class: 0

Hours of missing wind measurements in this stability class: 0

Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011

Stability Class - Slightly Unstable - 200Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 4 | 11 | 2 | 0 | 0 | 17 |
| NNE | 0 | 6 | 12 | 6 | 0 | 0 | 24 |
| NE | 0 | 2 | 10 | 7 | 5 | 0 | 24 |
| ENE | 0 | 5 | 6 | 12 | 11 | 4 | 38 |
| E | 0 | 6 | 7 | 4 | 2 | 0 | 19 |
| ESE | 0 | 1 | 1 | 5 | 0 | 0 | 7 |
| SE | 0 | 1 | 1 | 3 | 1 | 1 | 7 |
| SSE | 0 | 0 | 3 | 2 | 2 | 1 | 8 |
| S | 0 | 2 | 7 | 4 | 1 | 0 | 14 |
| SSW | 0 | 1 | 9 | 11 | 1 | 2 | 24 |
| SW | 0 | 1 | 3 | 7 | 2 | 0 | 13 |
| WSW | 1 | 1 | 7 | 3 | 1 | 0 | 13 |
| W | 0 | 2 | 10 | 14 | 1 | 0 | 27 |
| WNW | 0 | 3 | 8 | 18 | 1 | 0 | 30 |
| NW | 0 | 2 | 7 | 9 | 3 | 0 | 21 |
| NNW | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1 | 37 | 103 | 108 | 31 | 8 | 288 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011
 Stability Class - Neutral - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 8 | 16 | 1 | 0 | 0 | 25 |
| NNE | 1 | 10 | 30 | 1 | 0 | 0 | 42 |
| NE | 2 | 12 | 23 | 31 | 9 | 0 | 77 |
| ENE | 0 | 9 | 15 | 24 | 9 | 5 | 62 |
| E | 0 | 15 | 26 | 22 | 13 | 3 | 79 |
| ESE | 0 | 10 | 15 | 15 | 7 | 4 | 51 |
| SE | 3 | 6 | 14 | 12 | 7 | 3 | 45 |
| SSE | 1 | 8 | 19 | 5 | 1 | 1 | 35 |
| S | 3 | 9 | 18 | 13 | 3 | 1 | 47 |
| SSW | 3 | 9 | 23 | 16 | 4 | 2 | 57 |
| SW | 1 | 15 | 8 | 26 | 7 | 2 | 59 |
| WSW | 1 | 6 | 14 | 22 | 3 | 1 | 47 |
| W | 1 | 10 | 28 | 37 | 14 | 0 | 90 |
| WNW | 2 | 8 | 30 | 20 | 8 | 3 | 71 |
| NW | 2 | 6 | 11 | 11 | 1 | 0 | 31 |
| NNW | 4 | 11 | 12 | 8 | 1 | 0 | 36 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 24 | 152 | 302 | 264 | 87 | 25 | 854 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011

Stability Class - Slightly Stable - 200Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 12 | 11 | 0 | 0 | 0 | 23 |
| NNE | 1 | 11 | 2 | 2 | 0 | 0 | 16 |
| NE | 0 | 1 | 10 | 3 | 0 | 0 | 14 |
| ENE | 1 | 1 | 8 | 6 | 1 | 1 | 18 |
| E | 0 | 16 | 22 | 7 | 0 | 0 | 45 |
| ESE | 1 | 8 | 6 | 13 | 2 | 0 | 30 |
| SE | 1 | 10 | 16 | 10 | 3 | 0 | 40 |
| SSE | 1 | 6 | 6 | 5 | 1 | 0 | 19 |
| S | 0 | 3 | 6 | 11 | 4 | 0 | 24 |
| SSW | 0 | 6 | 4 | 17 | 5 | 1 | 33 |
| SW | 1 | 4 | 20 | 21 | 1 | 0 | 47 |
| WSW | 0 | 7 | 20 | 7 | 1 | 0 | 35 |
| W | 1 | 13 | 14 | 8 | 2 | 0 | 38 |
| WNW | 2 | 12 | 14 | 8 | 5 | 3 | 44 |
| NW | 1 | 3 | 6 | 0 | 0 | 0 | 10 |
| NNW | 0 | 3 | 2 | 0 | 0 | 0 | 5 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 10 | 116 | 167 | 118 | 25 | 5 | 441 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011

Stability Class - Moderately Stable - 200Ft-33Ft Delta-T (F)
Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 2 | 6 | 0 | 0 | 0 | 0 | 8 |
| NNE | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| NE | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| ENE | 0 | 3 | 1 | 0 | 0 | 0 | 4 |
| E | 1 | 14 | 6 | 0 | 0 | 0 | 21 |
| ESE | 1 | 5 | 11 | 0 | 0 | 0 | 17 |
| SE | 0 | 10 | 3 | 1 | 0 | 0 | 14 |
| SSE | 0 | 13 | 4 | 1 | 0 | 0 | 18 |
| S | 0 | 12 | 10 | 4 | 0 | 0 | 26 |
| SSW | 0 | 9 | 21 | 4 | 0 | 0 | 34 |
| SW | 0 | 5 | 6 | 0 | 1 | 0 | 12 |
| WSW | 0 | 6 | 5 | 0 | 0 | 0 | 11 |
| W | 0 | 12 | 14 | 2 | 0 | 0 | 28 |
| WNW | 2 | 6 | 7 | 0 | 0 | 0 | 15 |
| NW | 1 | 1 | 0 | 0 | 0 | 0 | 2 |
| NNW | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 7 | 106 | 89 | 12 | 1 | 0 | 215 |

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011

Stability Class - Extremely Stable - 200Ft-33Ft Delta-T (F)

Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 2 | 2 | 0 | 0 | 0 | 0 | 4 |
| NNE | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| ESE | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| SE | 0 | 7 | 4 | 0 | 0 | 0 | 11 |
| SSE | 1 | 10 | 0 | 0 | 0 | 0 | 11 |
| S | 0 | 13 | 5 | 0 | 0 | 0 | 18 |
| SSW | 1 | 5 | 1 | 0 | 0 | 0 | 7 |
| SW | 0 | 4 | 2 | 0 | 0 | 0 | 6 |
| WSW | 0 | 5 | 0 | 0 | 0 | 0 | 5 |
| W | 1 | 10 | 2 | 0 | 0 | 0 | 13 |
| WNW | 1 | 2 | 0 | 0 | 0 | 0 | 3 |
| NW | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 9 | 59 | 15 | 0 | 0 | 0 | 83 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011
 Stability Class - Extremely Unstable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 1 | 2 | 0 | 3 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSW | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 2 | 2 | 0 | 4 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011

Stability Class - Moderately Unstable - 375Ft-33Ft Delta-T (F)

Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| NNE | 0 | 0 | 0 | 3 | 10 | 1 | 14 |
| NE | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| S | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| SSW | 0 | 0 | 0 | 2 | 0 | 2 | 4 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 1 | 7 | 11 | 7 | 26 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011

Stability Class - Slightly Unstable - 375Ft-33Ft Delta-T (F)
Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 1 | 10 | 4 | 0 | 15 |
| NNE | 0 | 0 | 3 | 6 | 9 | 0 | 18 |
| NE | 0 | 0 | 1 | 0 | 4 | 1 | 6 |
| ENE | 0 | 0 | 0 | 3 | 4 | 0 | 7 |
| E | 0 | 0 | 2 | 6 | 0 | 1 | 9 |
| ESE | 0 | 0 | 1 | 2 | 0 | 0 | 3 |
| SE | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| SSW | 0 | 0 | 1 | 1 | 0 | 2 | 4 |
| SW | 0 | 0 | 2 | 2 | 3 | 2 | 9 |
| WSW | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| W | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 1 | 2 | 1 | 0 | 0 | 4 |
| NNW | 0 | 0 | 3 | 1 | 0 | 0 | 4 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 16 | 36 | 26 | 7 | 86 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011
 Stability Class - Neutral - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 4 | 19 | 8 | 3 | 0 | 34 |
| NNE | 1 | 10 | 17 | 21 | 23 | 7 | 79 |
| NE | 0 | 7 | 17 | 39 | 44 | 16 | 123 |
| ENE | 0 | 12 | 30 | 29 | 38 | 36 | 145 |
| E | 0 | 7 | 15 | 18 | 16 | 27 | 83 |
| ESE | 0 | 4 | 15 | 29 | 17 | 16 | 81 |
| SE | 1 | 8 | 9 | 9 | 12 | 23 | 62 |
| SSE | 1 | 8 | 25 | 12 | 9 | 6 | 61 |
| S | 1 | 8 | 12 | 26 | 14 | 14 | 75 |
| SSW | 1 | 6 | 12 | 25 | 26 | 23 | 93 |
| SW | 1 | 8 | 7 | 11 | 30 | 21 | 78 |
| WSW | 3 | 9 | 9 | 17 | 30 | 9 | 77 |
| W | 2 | 6 | 7 | 41 | 38 | 19 | 113 |
| WNW | 0 | 2 | 17 | 37 | 37 | 13 | 106 |
| NW | 1 | 7 | 14 | 24 | 23 | 8 | 77 |
| NNW | 0 | 5 | 11 | 15 | 7 | 0 | 38 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 12 | 111 | 236 | 361 | 367 | 238 | 1325 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011
 Stability Class - Slightly Stable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 4 | 2 | 5 | 0 | 0 | 11 |
| NNE | 0 | 6 | 5 | 18 | 7 | 0 | 36 |
| NE | 0 | 1 | 4 | 6 | 2 | 0 | 13 |
| ENE | 0 | 5 | 4 | 8 | 4 | 0 | 21 |
| E | 0 | 3 | 5 | 9 | 6 | 4 | 27 |
| ESE | 0 | 2 | 6 | 13 | 10 | 7 | 38 |
| SE | 0 | 4 | 3 | 9 | 19 | 19 | 54 |
| SSE | 0 | 1 | 5 | 8 | 8 | 7 | 29 |
| S | 0 | 1 | 3 | 9 | 7 | 15 | 35 |
| SSW | 0 | 3 | 12 | 7 | 12 | 35 | 69 |
| SW | 0 | 1 | 4 | 10 | 21 | 13 | 49 |
| WSW | 0 | 1 | 1 | 14 | 20 | 2 | 38 |
| W | 0 | 3 | 6 | 9 | 17 | 5 | 40 |
| WNW | 0 | 1 | 9 | 15 | 31 | 9 | 65 |
| NW | 0 | 3 | 9 | 1 | 7 | 3 | 23 |
| NNW | 0 | 1 | 3 | 5 | 1 | 0 | 10 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 40 | 81 | 146 | 172 | 119 | 558 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011

Stability Class - Moderately Stable - 375Ft-33Ft Delta-T (F)
Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 1 | 3 | 1 | 0 | 0 | 0 | 5 |
| NNE | 1 | 2 | 2 | 2 | 0 | 0 | 7 |
| NE | 0 | 1 | 2 | 2 | 0 | 0 | 5 |
| ENE | 0 | 1 | 1 | 3 | 0 | 0 | 5 |
| E | 0 | 1 | 3 | 6 | 0 | 0 | 10 |
| ESE | 0 | 2 | 4 | 0 | 5 | 1 | 12 |
| SE | 0 | 1 | 3 | 6 | 2 | 1 | 13 |
| SSE | 0 | 0 | 7 | 8 | 3 | 0 | 18 |
| S | 0 | 0 | 1 | 6 | 2 | 4 | 13 |
| SSW | 0 | 1 | 4 | 12 | 8 | 0 | 25 |
| SW | 0 | 2 | 5 | 5 | 3 | 0 | 15 |
| WSW | 0 | 1 | 7 | 3 | 0 | 0 | 11 |
| W | 1 | 1 | 7 | 3 | 2 | 2 | 16 |
| WNW | 1 | 0 | 7 | 3 | 3 | 0 | 14 |
| NW | 0 | 0 | 5 | 1 | 1 | 0 | 7 |
| NNW | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 4 | 17 | 60 | 60 | 29 | 8 | 178 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: April - June 2011

Stability Class - Extremely Stable - 375Ft-33Ft Delta-T (F)

Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| SSE | 0 | 0 | 1 | 2 | 0 | 0 | 3 |
| S | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| SSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 2 | 3 | 0 | 0 | 6 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Extremely Unstable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| NNE | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| SSW | 0 | 1 | 3 | 1 | 0 | 0 | 5 |
| SW | 0 | 2 | 5 | 1 | 0 | 0 | 8 |
| WSW | 0 | 1 | 10 | 4 | 0 | 0 | 15 |
| W | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| WNW | 0 | 0 | 1 | 1 | 1 | 0 | 3 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 4 | 21 | 12 | 2 | 0 | 39 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Moderately Unstable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 2 | 6 | 4 | 0 | 0 | 12 |
| NNE | 0 | 0 | 10 | 0 | 0 | 0 | 10 |
| NE | 0 | 0 | 4 | 1 | 0 | 0 | 5 |
| ENE | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| E | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| ESE | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| SE | 0 | 1 | 3 | 0 | 0 | 0 | 4 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 1 | 1 | 1 | 1 | 0 | 4 |
| SSW | 0 | 3 | 9 | 1 | 0 | 0 | 13 |
| SW | 0 | 6 | 1 | 0 | 0 | 0 | 7 |
| WSW | 0 | 5 | 12 | 12 | 0 | 0 | 29 |
| W | 0 | 2 | 9 | 3 | 0 | 0 | 14 |
| WNW | 0 | 2 | 3 | 2 | 1 | 0 | 8 |
| NW | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| NNW | 0 | 5 | 2 | 1 | 0 | 0 | 8 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 30 | 63 | 25 | 2 | 0 | 120 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Slightly Unstable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 6 | 12 | 4 | 0 | 0 | 22 |
| NNE | 0 | 4 | 12 | 0 | 0 | 0 | 16 |
| NE | 0 | 4 | 0 | 0 | 0 | 0 | 4 |
| ENE | 0 | 1 | 1 | 2 | 0 | 0 | 4 |
| E | 0 | 0 | 4 | 0 | 0 | 0 | 4 |
| ESE | 0 | 4 | 4 | 0 | 0 | 0 | 8 |
| SE | 0 | 2 | 0 | 1 | 0 | 0 | 3 |
| SSE | 0 | 8 | 2 | 0 | 1 | 0 | 11 |
| S | 0 | 6 | 12 | 0 | 0 | 0 | 18 |
| SSW | 0 | 5 | 4 | 1 | 0 | 0 | 10 |
| SW | 0 | 9 | 5 | 1 | 0 | 0 | 15 |
| WSW | 0 | 10 | 9 | 2 | 0 | 0 | 21 |
| W | 0 | 9 | 4 | 1 | 0 | 0 | 14 |
| WNW | 0 | 3 | 4 | 0 | 0 | 0 | 7 |
| NW | 0 | 3 | 4 | 3 | 0 | 0 | 10 |
| NNW | 0 | 2 | 14 | 2 | 0 | 0 | 18 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 76 | 91 | 17 | 1 | 0 | 185 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Neutral - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 4 | 42 | 23 | 5 | 0 | 0 | 74 |
| NNE | 4 | 30 | 12 | 0 | 0 | 0 | 46 |
| NE | 1 | 21 | 17 | 1 | 0 | 0 | 40 |
| ENE | 1 | 18 | 15 | 5 | 0 | 0 | 39 |
| E | 4 | 22 | 12 | 0 | 0 | 0 | 38 |
| ESE | 5 | 24 | 21 | 1 | 0 | 0 | 51 |
| SE | 5 | 9 | 7 | 4 | 0 | 0 | 25 |
| SSE | 3 | 14 | 16 | 4 | 0 | 0 | 37 |
| S | 2 | 19 | 9 | 10 | 2 | 0 | 42 |
| SSW | 2 | 13 | 9 | 7 | 0 | 0 | 31 |
| SW | 1 | 17 | 14 | 6 | 0 | 0 | 38 |
| WSW | 2 | 10 | 13 | 6 | 0 | 0 | 31 |
| W | 1 | 18 | 17 | 7 | 0 | 0 | 43 |
| WNW | 4 | 16 | 23 | 6 | 1 | 0 | 50 |
| NW | 1 | 18 | 26 | 2 | 2 | 0 | 49 |
| NNW | 1 | 22 | 56 | 16 | 8 | 1 | 104 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 41 | 313 | 290 | 80 | 13 | 1 | 738 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Slightly Stable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 4 | 57 | 22 | 1 | 0 | 0 | 84 |
| NNE | 5 | 30 | 9 | 0 | 0 | 0 | 44 |
| NE | 3 | 17 | 13 | 1 | 0 | 0 | 34 |
| ENE | 3 | 20 | 14 | 2 | 0 | 0 | 39 |
| E | 4 | 29 | 22 | 0 | 0 | 0 | 55 |
| ESE | 3 | 9 | 14 | 0 | 0 | 0 | 26 |
| SE | 2 | 5 | 4 | 0 | 0 | 0 | 11 |
| SSE | 1 | 4 | 3 | 2 | 0 | 0 | 10 |
| S | 0 | 3 | 13 | 7 | 0 | 0 | 23 |
| SSW | 0 | 14 | 14 | 5 | 0 | 0 | 33 |
| SW | 3 | 11 | 29 | 4 | 0 | 0 | 47 |
| WSW | 2 | 6 | 23 | 2 | 0 | 0 | 33 |
| W | 5 | 13 | 9 | 0 | 1 | 0 | 28 |
| WNW | 5 | 25 | 11 | 1 | 1 | 2 | 45 |
| NW | 9 | 8 | 10 | 1 | 1 | 0 | 29 |
| NNW | 3 | 13 | 14 | 2 | 0 | 0 | 32 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 52 | 264 | 224 | 28 | 3 | 2 | 573 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Moderately Stable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 1 | 22 | 0 | 0 | 0 | 0 | 23 |
| NNE | 2 | 2 | 0 | 0 | 0 | 0 | 4 |
| NE | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 3 | 31 | 7 | 0 | 0 | 0 | 41 |
| ESE | 4 | 17 | 4 | 0 | 0 | 0 | 25 |
| SE | 1 | 18 | 0 | 0 | 0 | 0 | 19 |
| SSE | 2 | 15 | 0 | 0 | 0 | 0 | 17 |
| S | 2 | 22 | 1 | 0 | 0 | 0 | 25 |
| SSW | 3 | 24 | 10 | 0 | 0 | 0 | 37 |
| SW | 0 | 20 | 17 | 1 | 0 | 0 | 38 |
| WSW | 1 | 17 | 10 | 0 | 0 | 0 | 28 |
| W | 9 | 14 | 2 | 0 | 0 | 0 | 25 |
| WNW | 5 | 19 | 2 | 0 | 0 | 0 | 26 |
| NW | 4 | 2 | 0 | 0 | 0 | 0 | 6 |
| NNW | 0 | 14 | 2 | 0 | 0 | 0 | 16 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 37 | 240 | 55 | 1 | 0 | 0 | 333 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Extremely Stable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 1 | 1 | 0 | 0 | 0 | 0 | 2 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 3 | 1 | 0 | 0 | 0 | 4 |
| ESE | 1 | 13 | 0 | 0 | 0 | 0 | 14 |
| SE | 4 | 19 | 0 | 0 | 0 | 0 | 23 |
| SSE | 0 | 22 | 0 | 0 | 0 | 0 | 22 |
| S | 0 | 34 | 1 | 0 | 0 | 0 | 35 |
| SSW | 2 | 27 | 7 | 0 | 0 | 0 | 36 |
| SW | 2 | 14 | 7 | 0 | 0 | 0 | 23 |
| WSW | 1 | 28 | 3 | 0 | 0 | 0 | 32 |
| W | 3 | 16 | 0 | 0 | 0 | 0 | 19 |
| WNW | 0 | 9 | 0 | 0 | 0 | 0 | 9 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 14 | 187 | 19 | 0 | 0 | 0 | 220 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Extremely Unstable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Moderately Unstable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| WSW | 0 | 0 | 1 | 4 | 0 | 0 | 5 |
| W | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| WNW | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 1 | 10 | 2 | 0 | 13 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Slightly Unstable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 2 | 2 | 2 | 0 | 6 |
| NNE | 0 | 1 | 3 | 7 | 1 | 0 | 12 |
| NE | 0 | 0 | 1 | 5 | 0 | 0 | 6 |
| ENE | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| SE | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 1 | 0 | 1 | 0 | 1 | 3 |
| SSW | 0 | 1 | 3 | 3 | 1 | 0 | 8 |
| SW | 0 | 1 | 6 | 2 | 0 | 0 | 9 |
| WSW | 0 | 1 | 6 | 7 | 3 | 0 | 17 |
| W | 0 | 0 | 4 | 4 | 0 | 0 | 8 |
| WNW | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| NW | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| NNW | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 5 | 33 | 37 | 7 | 1 | 83 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Neutral - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 1 | 22 | 33 | 31 | 14 | 0 | 101 |
| NNE | 1 | 16 | 20 | 24 | 3 | 0 | 64 |
| NE | 2 | 20 | 21 | 21 | 3 | 1 | 68 |
| ENE | 2 | 20 | 11 | 18 | 5 | 0 | 56 |
| E | 1 | 19 | 16 | 6 | 0 | 0 | 42 |
| ESE | 0 | 12 | 19 | 3 | 1 | 0 | 35 |
| SE | 1 | 10 | 13 | 14 | 6 | 0 | 44 |
| SSE | 0 | 21 | 10 | 4 | 3 | 2 | 40 |
| S | 2 | 8 | 18 | 15 | 7 | 9 | 59 |
| SSW | 3 | 14 | 16 | 13 | 14 | 2 | 62 |
| SW | 2 | 17 | 18 | 20 | 6 | 0 | 63 |
| WSW | 1 | 16 | 21 | 13 | 10 | 0 | 61 |
| W | 1 | 11 | 22 | 15 | 7 | 1 | 57 |
| WNW | 1 | 11 | 18 | 11 | 9 | 3 | 53 |
| NW | 0 | 11 | 35 | 19 | 2 | 8 | 75 |
| NNW | 1 | 16 | 43 | 30 | 15 | 11 | 116 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 19 | 244 | 334 | 257 | 105 | 37 | 996 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Slightly Stable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 1 | 6 | 11 | 15 | 13 | 1 | 47 |
| NNE | 0 | 13 | 16 | 30 | 12 | 0 | 71 |
| NE | 0 | 4 | 26 | 10 | 9 | 0 | 49 |
| ENE | 2 | 16 | 20 | 15 | 6 | 0 | 59 |
| E | 0 | 7 | 25 | 25 | 4 | 0 | 61 |
| ESE | 3 | 6 | 18 | 11 | 10 | 0 | 48 |
| SE | 0 | 3 | 8 | 6 | 7 | 0 | 24 |
| SSE | 0 | 2 | 3 | 3 | 3 | 1 | 12 |
| S | 1 | 7 | 7 | 9 | 9 | 7 | 40 |
| SSW | 2 | 6 | 5 | 13 | 11 | 10 | 47 |
| SW | 1 | 2 | 10 | 18 | 18 | 13 | 62 |
| WSW | 3 | 7 | 5 | 4 | 28 | 4 | 51 |
| W | 0 | 5 | 5 | 9 | 7 | 1 | 27 |
| WNW | 2 | 10 | 10 | 15 | 6 | 5 | 48 |
| NW | 0 | 6 | 7 | 18 | 5 | 4 | 40 |
| NNW | 1 | 3 | 7 | 10 | 13 | 0 | 34 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 16 | 103 | 183 | 211 | 161 | 46 | 720 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011
 Stability Class - Moderately Stable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 1 | 3 | 2 | 3 | 1 | 3 | 13 |
| NNE | 0 | 4 | 5 | 8 | 1 | 0 | 18 |
| NE | 0 | 2 | 6 | 4 | 0 | 0 | 12 |
| ENE | 0 | 5 | 3 | 1 | 0 | 0 | 9 |
| E | 0 | 3 | 3 | 6 | 5 | 0 | 17 |
| ESE | 0 | 1 | 6 | 15 | 6 | 0 | 28 |
| SE | 0 | 0 | 10 | 8 | 4 | 0 | 22 |
| SSE | 0 | 6 | 11 | 5 | 2 | 0 | 24 |
| S | 0 | 9 | 16 | 14 | 1 | 0 | 40 |
| SSW | 0 | 6 | 11 | 17 | 12 | 0 | 46 |
| SW | 1 | 2 | 12 | 9 | 11 | 7 | 42 |
| WSW | 0 | 6 | 11 | 7 | 4 | 1 | 29 |
| W | 1 | 3 | 11 | 4 | 6 | 0 | 25 |
| WNW | 0 | 2 | 5 | 6 | 1 | 0 | 14 |
| NW | 1 | 2 | 13 | 0 | 4 | 0 | 20 |
| NNW | 0 | 0 | 5 | 3 | 0 | 0 | 8 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 4 | 54 | 130 | 110 | 58 | 11 | 367 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: July - September 2011

Stability Class - Extremely Stable - 375Ft-33Ft Delta-T (F)
Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 2 | 3 | 3 | 0 | 8 |
| S | 0 | 0 | 1 | 3 | 0 | 0 | 4 |
| SSW | 0 | 0 | 2 | 4 | 2 | 0 | 8 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| W | 0 | 0 | 1 | 0 | 2 | 0 | 3 |
| WNW | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| NW | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 8 | 13 | 7 | 0 | 29 |

Hours of calm in this stability class: 0
Hours of missing wind measurements in this stability class: 0
Hours of missing stability measurements in all stability classes: 0

LaSalle County Generating Station

Period of Record: October - December 2011
 Stability Class - Extremely Unstable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 1 | 3 | 4 | 2 | 0 | 0 | 10 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| ESE | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| SE | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| SSE | 0 | 1 | 1 | 3 | 0 | 0 | 5 |
| S | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| SSW | 0 | 2 | 2 | 0 | 0 | 0 | 4 |
| SW | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| WSW | 0 | 2 | 9 | 2 | 0 | 0 | 13 |
| W | 0 | 2 | 4 | 3 | 0 | 0 | 9 |
| WNW | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| NW | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| NNW | 0 | 1 | 1 | 6 | 0 | 0 | 8 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1 | 14 | 29 | 18 | 0 | 0 | 62 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011
 Stability Class - Moderately Unstable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| E | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| ESE | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 1 | 1 | 1 | 0 | 3 |
| S | 0 | 0 | 1 | 7 | 0 | 0 | 8 |
| SSW | 0 | 1 | 5 | 7 | 0 | 0 | 13 |
| SW | 0 | 0 | 2 | 3 | 1 | 0 | 6 |
| WSW | 0 | 1 | 3 | 0 | 1 | 0 | 5 |
| W | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 0 | 1 | 1 | 0 | 0 | 2 |
| NNW | 1 | 1 | 0 | 0 | 0 | 0 | 2 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 2 | 5 | 17 | 19 | 3 | 0 | 46 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011

Stability Class - Slightly Unstable - 200Ft-33Ft Delta-T (F)

Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 3 | 1 | 0 | 0 | 4 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 1 | 2 | 0 | 2 | 0 | 5 |
| SSE | 0 | 4 | 5 | 1 | 1 | 0 | 11 |
| S | 0 | 0 | 3 | 6 | 0 | 0 | 9 |
| SSW | 0 | 1 | 6 | 11 | 2 | 1 | 21 |
| SW | 0 | 0 | 2 | 2 | 2 | 1 | 7 |
| WSW | 0 | 1 | 1 | 2 | 0 | 0 | 4 |
| W | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| WNW | 0 | 0 | 1 | 7 | 2 | 0 | 10 |
| NW | 1 | 0 | 0 | 3 | 0 | 0 | 4 |
| NNW | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1 | 8 | 25 | 35 | 9 | 2 | 80 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011
 Stability Class - Neutral - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 26 | 65 | 29 | 6 | 0 | 126 |
| NNE | 2 | 3 | 30 | 8 | 0 | 0 | 43 |
| NE | 2 | 5 | 9 | 14 | 8 | 0 | 38 |
| ENE | 0 | 2 | 18 | 26 | 0 | 0 | 46 |
| E | 0 | 4 | 17 | 3 | 0 | 0 | 24 |
| ESE | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| SE | 4 | 4 | 9 | 0 | 0 | 0 | 17 |
| SSE | 0 | 9 | 15 | 6 | 4 | 0 | 34 |
| S | 0 | 6 | 19 | 13 | 6 | 0 | 44 |
| SSW | 1 | 15 | 19 | 21 | 16 | 5 | 77 |
| SW | 0 | 5 | 23 | 17 | 3 | 2 | 50 |
| WSW | 0 | 11 | 17 | 10 | 1 | 0 | 39 |
| W | 0 | 18 | 16 | 23 | 4 | 2 | 63 |
| WNW | 2 | 18 | 41 | 29 | 10 | 4 | 104 |
| NW | 1 | 9 | 26 | 24 | 0 | 0 | 60 |
| NNW | 1 | 11 | 64 | 39 | 16 | 5 | 136 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 13 | 146 | 391 | 262 | 74 | 18 | 904 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 4
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011
 Stability Class - Slightly Stable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 4 | 8 | 8 | 0 | 0 | 0 | 20 |
| NNE | 0 | 4 | 7 | 0 | 0 | 0 | 11 |
| NE | 1 | 2 | 3 | 1 | 0 | 0 | 7 |
| ENE | 0 | 2 | 4 | 1 | 0 | 0 | 7 |
| E | 1 | 2 | 4 | 0 | 0 | 0 | 7 |
| ESE | 0 | 2 | 0 | 1 | 0 | 0 | 3 |
| SE | 3 | 2 | 1 | 0 | 0 | 0 | 6 |
| SSE | 1 | 6 | 7 | 9 | 0 | 0 | 23 |
| S | 1 | 3 | 16 | 29 | 6 | 1 | 56 |
| SSW | 2 | 10 | 24 | 57 | 17 | 0 | 110 |
| SW | 2 | 7 | 24 | 20 | 3 | 1 | 57 |
| WSW | 2 | 17 | 10 | 12 | 1 | 1 | 43 |
| W | 0 | 9 | 35 | 22 | 10 | 0 | 76 |
| WNW | 0 | 15 | 17 | 14 | 16 | 6 | 68 |
| NW | 1 | 7 | 9 | 1 | 0 | 0 | 18 |
| NNW | 1 | 4 | 7 | 7 | 0 | 0 | 19 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 19 | 100 | 176 | 174 | 53 | 9 | 531 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 7
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011
 Stability Class - Moderately Stable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| NE | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| ENE | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| E | 0 | 3 | 5 | 0 | 0 | 0 | 8 |
| ESE | 0 | 5 | 0 | 0 | 0 | 0 | 5 |
| SE | 0 | 4 | 9 | 1 | 0 | 0 | 14 |
| SSE | 3 | 8 | 4 | 0 | 0 | 0 | 15 |
| S | 1 | 10 | 17 | 6 | 0 | 0 | 34 |
| SSW | 3 | 16 | 25 | 18 | 0 | 0 | 62 |
| SW | 0 | 13 | 7 | 1 | 0 | 0 | 21 |
| WSW | 2 | 7 | 16 | 2 | 1 | 0 | 28 |
| W | 1 | 9 | 44 | 5 | 0 | 0 | 59 |
| WNW | 0 | 17 | 5 | 0 | 0 | 0 | 22 |
| NW | 1 | 5 | 1 | 0 | 0 | 0 | 7 |
| NNW | 1 | 1 | 0 | 0 | 0 | 0 | 2 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 14 | 100 | 133 | 33 | 1 | 0 | 281 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011
 Stability Class - Extremely Stable - 200Ft-33Ft Delta-T (F)
 Winds Measured at 33 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 5 | 5 | 0 | 0 | 0 | 10 |
| ESE | 0 | 13 | 1 | 0 | 0 | 0 | 14 |
| SE | 0 | 14 | 6 | 0 | 0 | 0 | 20 |
| SSE | 0 | 33 | 24 | 0 | 0 | 0 | 57 |
| S | 1 | 26 | 26 | 1 | 0 | 0 | 54 |
| SSW | 1 | 15 | 31 | 4 | 0 | 0 | 51 |
| SW | 3 | 11 | 8 | 3 | 0 | 0 | 25 |
| WSW | 1 | 10 | 7 | 2 | 0 | 0 | 20 |
| W | 0 | 9 | 4 | 0 | 0 | 0 | 13 |
| WNW | 0 | 14 | 8 | 0 | 0 | 0 | 22 |
| NW | 0 | 4 | 0 | 0 | 0 | 0 | 4 |
| NNW | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 6 | 156 | 120 | 10 | 0 | 0 | 292 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011

Stability Class - Extremely Unstable - 375Ft-33Ft Delta-T (F)

Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| NNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 1 | 0 | 1 |

Hours of calm in this stability class: 0

Hours of missing wind measurements in this stability class: 0

Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011

Stability Class - Moderately Unstable - 375Ft-33Ft Delta-T (F)

Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSE | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SSW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WSW | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| W | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| WNW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 0 | 0 | 0 | 0 | 2 | 1 | 3 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 4 | 3 | 1 | 8 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011

Stability Class - Slightly Unstable - 375Ft-33Ft Delta-T (F)

Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 3 | 1 | 2 | 0 | 6 |
| NNE | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| SSE | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| S | 0 | 0 | 1 | 1 | 2 | 0 | 4 |
| SSW | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| SW | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| WSW | 0 | 0 | 0 | 4 | 1 | 0 | 5 |
| W | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| WNW | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| NW | 0 | 0 | 0 | 1 | 3 | 0 | 4 |
| NNW | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 1 | 7 | 12 | 14 | 0 | 34 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011
 Stability Class - Neutral - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 2 | 4 | 24 | 63 | 17 | 22 | 132 |
| NNE | 2 | 1 | 19 | 22 | 6 | 7 | 57 |
| NE | 2 | 0 | 0 | 15 | 18 | 8 | 43 |
| ENE | 1 | 4 | 7 | 38 | 11 | 0 | 61 |
| E | 4 | 0 | 4 | 12 | 2 | 0 | 22 |
| ESE | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| SE | 1 | 3 | 5 | 7 | 1 | 2 | 19 |
| SSE | 0 | 4 | 15 | 12 | 5 | 7 | 43 |
| S | 0 | 5 | 18 | 20 | 18 | 24 | 85 |
| SSW | 0 | 4 | 20 | 32 | 22 | 45 | 123 |
| SW | 0 | 4 | 12 | 29 | 10 | 11 | 66 |
| WSW | 0 | 8 | 15 | 12 | 9 | 4 | 48 |
| W | 0 | 8 | 23 | 7 | 17 | 9 | 64 |
| WNW | 1 | 9 | 27 | 24 | 25 | 13 | 99 |
| NW | 0 | 5 | 26 | 26 | 28 | 21 | 106 |
| NNW | 0 | 7 | 22 | 41 | 20 | 20 | 110 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 13 | 67 | 237 | 360 | 209 | 193 | 1079 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011
 Stability Class - Slightly Stable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 2 | 3 | 1 | 4 | 0 | 10 |
| NNE | 0 | 1 | 5 | 1 | 8 | 0 | 15 |
| NE | 0 | 2 | 3 | 4 | 1 | 0 | 10 |
| ENE | 0 | 2 | 2 | 5 | 2 | 0 | 11 |
| E | 1 | 0 | 3 | 2 | 3 | 0 | 9 |
| ESE | 3 | 1 | 0 | 2 | 0 | 0 | 6 |
| SE | 1 | 2 | 0 | 2 | 5 | 0 | 10 |
| SSE | 1 | 0 | 3 | 5 | 3 | 6 | 18 |
| S | 1 | 3 | 7 | 8 | 13 | 38 | 70 |
| SSW | 0 | 2 | 6 | 8 | 30 | 85 | 131 |
| SW | 0 | 1 | 16 | 20 | 17 | 17 | 71 |
| WSW | 2 | 1 | 12 | 11 | 6 | 11 | 43 |
| W | 0 | 2 | 16 | 19 | 37 | 34 | 108 |
| WNW | 0 | 2 | 12 | 24 | 15 | 32 | 85 |
| NW | 1 | 1 | 5 | 17 | 7 | 3 | 34 |
| NNW | 0 | 2 | 6 | 6 | 6 | 0 | 20 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 10 | 24 | 99 | 135 | 157 | 226 | 651 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011
 Stability Class - Moderately Stable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 4 | 0 | 0 | 0 | 4 |
| NNE | 0 | 1 | 3 | 0 | 0 | 0 | 4 |
| NE | 1 | 0 | 0 | 1 | 0 | 0 | 2 |
| ENE | 0 | 0 | 1 | 4 | 0 | 0 | 5 |
| E | 0 | 3 | 2 | 1 | 1 | 2 | 9 |
| ESE | 0 | 1 | 4 | 5 | 0 | 1 | 11 |
| SE | 0 | 3 | 3 | 6 | 2 | 7 | 21 |
| SSE | 0 | 3 | 1 | 2 | 6 | 10 | 22 |
| S | 0 | 0 | 3 | 4 | 12 | 20 | 39 |
| SSW | 0 | 0 | 3 | 18 | 13 | 26 | 60 |
| SW | 0 | 0 | 2 | 23 | 4 | 6 | 35 |
| WSW | 0 | 3 | 3 | 3 | 8 | 2 | 19 |
| W | 0 | 2 | 3 | 1 | 11 | 11 | 28 |
| WNW | 0 | 1 | 3 | 12 | 2 | 4 | 22 |
| NW | 0 | 0 | 2 | 14 | 1 | 0 | 17 |
| NNW | 0 | 0 | 1 | 6 | 0 | 0 | 7 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1 | 17 | 38 | 100 | 60 | 89 | 305 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

LaSalle County Generating Station

Period of Record: October - December 2011
 Stability Class - Extremely Stable - 375Ft-33Ft Delta-T (F)
 Winds Measured at 375 Feet

| Wind Direction | Wind Speed (in mph) | | | | | | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
| | 1-3 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 | |
| N | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| NNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ENE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ESE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SE | 0 | 2 | 4 | 2 | 0 | 0 | 8 |
| SSE | 0 | 0 | 1 | 8 | 6 | 4 | 19 |
| S | 0 | 0 | 1 | 9 | 7 | 6 | 23 |
| SSW | 0 | 0 | 7 | 14 | 11 | 10 | 42 |
| SW | 0 | 0 | 1 | 2 | 1 | 0 | 4 |
| WSW | 1 | 1 | 7 | 9 | 0 | 1 | 19 |
| W | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| WNW | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNW | 1 | 0 | 0 | 3 | 5 | 0 | 9 |
| Variable | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 2 | 3 | 23 | 50 | 30 | 21 | 129 |

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 0
 Hours of missing stability measurements in all stability classes: 1

APPENDIX G

ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

Docket No: 50-373
50-374

LASALLE COUNTY STATION UNITS 1 and 2

Annual Radiological
Groundwater Protection Program Report

1 January Through 31 December 2011

Prepared By

Teledyne Brown Engineering
Environmental Services

ExelonSM

Nuclear

LaSalle County Station
Marseilles, IL 61341

May 2012

Table Of Contents

| | |
|------------------------------------------------------------------|----|
| I. Summary and Conclusions..... | 1 |
| II. Introduction | 3 |
| A. Objectives of the RGPP | 3 |
| B. Implementation of the Objectives..... | 3 |
| C. Program Description | 4 |
| D. Characteristics of Tritium (H-3) | 4 |
| III. Program Description | 5 |
| A. Sample Analysis..... | 5 |
| B. Data Interpretation..... | 6 |
| C. Background Analysis..... | 7 |
| 1. Background Concentrations of Tritium | 7 |
| IV. Results and Discussion | 9 |
| A. Groundwater Results..... | 9 |
| B. Surface Water Results | 10 |
| C. Drinking Water Well Survey..... | 11 |
| D. Summary of Results – Inter-laboratory Comparison Program..... | 11 |
| E. Leaks, Spills, and Releases | 11 |
| F. Trends..... | 11 |
| G. Investigations | 12 |
| H. Actions Taken | 12 |

Appendices

Appendix A Location Designation & Distance

Tables

Table A-1 LaSalle County Station Groundwater Monitoring Sample Point List

Figures

Figure A-1 LaSalle County Station Map of Groundwater Monitoring Sample Locations.

Appendix B Data Tables

Tables

Table B-I.1 Concentrations of Tritium, Strontium, Gross Alpha and Gross Beta in Groundwater Samples Collected in the Vicinity of LaSalle County Station, 2011.

Table B-I.2 Concentrations of Gamma Emitters in Groundwater Samples Collected in the Vicinity of LaSalle County Station, 2011.

Table B-I.3 Concentrations of Hard-to-Detects in Groundwater Samples Collected in the Vicinity of LaSalle County Station, 2011.

Table B-II.1 Concentrations of Tritium and Strontium in Surface Water Samples Collected in the Vicinity of LaSalle County Station, 2011.

I. Summary and Conclusions

In 2006, Exelon instituted a comprehensive program to evaluate the impact of station operations on groundwater and surface water in the vicinity of LaSalle County Station. This evaluation involved numerous station personnel and contractor support personnel. Baseline sampling efforts included the use of six surface water locations, two of which were already included in LaSalle's REMP sampling program, and seventeen groundwater well sampling locations. Following baseline sampling and subsequent recommendations, LaSalle's Radiological Groundwater Protection Program (RGPP) program now consists of the six surface water and sixteen groundwater well sampling locations. The results for LaSalle's RGPP sampling efforts in 2011 are included in this report.

This is the sixth in a series of annual reports on the status of the RGPP conducted at LaSalle County Station. This report covers groundwater and surface water samples, collected from the environment, both on and off station property in 2011. During that time period, 145 analyses were performed on 78 samples from 19 locations (4 surface water and 15 ground water wells). The monitoring was conducted by Station personnel.

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

Strontium-90 was not detected in any groundwater or surface water sample during 2011.

Naturally occurring Potassium-40 was detected in one groundwater samples and one surface water sample. Other gamma-emitting radionuclides attributable to licensed plant operations were not detected in any of the groundwater or surface water samples.

In the case of tritium, Exelon specified that its laboratories achieve a lower limit of detection 10 times lower than that required by federal regulation.

Tritium was not detected in surface water samples at concentrations greater than the United States Environmental Protection Agency (USEPA) drinking water standard (and the Nuclear Regulatory Commission Reporting Limit) of 20,000 pCi/L. Levels of tritium were detected at concentrations greater than the LLD of 200 pCi/L in 5 of 15 groundwater monitoring locations. The tritium concentrations ranged from <LLD to $290,000 \pm 28,700$ pCi/L. Elevated tritium levels (>200 pCi/L) observed are associated with the U1 CY tank leak, which occurred in June - July, 2010, and historic elevated tritium believed to be associated with the 2001 CY tank leak, as documented in the Station's

10CFR50.75(g) report.

Gross Alpha and Gross Beta analyses in the dissolved and suspended fractions were performed on groundwater samples during the second sampling in 2011. Gross Alpha (dissolved) was not detected in any of the groundwater locations. Gross Alpha (suspended) was detected in 3 of 7 samples affecting 3 of 7 groundwater locations analyzed. The concentrations ranged from 3.4 to 8.7 pCi/L. Gross Beta (dissolved) was detected in 4 of 7 samples affecting 4 of 7 groundwater locations analyzed. The concentrations ranged from 3.1 to 9.3 pCi/L. Gross Beta (suspended) was detected in 6 of 7 samples affecting 6 of 7 groundwater locations analyzed. The concentrations ranged from 2.3 to 71.2 pCi/L.

Hard-To-Detect analyses were performed on a one of the groundwater locations to establish background levels. The analyses for groundwater included Fe-55, Ni-63, Am-241, Cm-242, Cm-243/244, Pu-238, Pu-239/240, U-234, U-235, U-238. The isotopes of U-234 and U-238 was detected in one sample affecting 1 of 1 groundwater monitoring locations analyzed. The U-234 concentration ranged was 1.42 pCi/L and the U-238 concentration was 1.2 pCi/L. The levels detected are considered background.

Introduction

The LaSalle County Station (LSCS), consisting of two boiling water reactors, each rated for 3,546 MWt, owned and operated by Exelon Corporation, is located in LaSalle County, Illinois. Unit No. 1 went critical on 16 March 1982. Unit No. 2 went critical on 02 December 1983. The site is located in northern Illinois, approximately 75 miles southwest of Chicago, Illinois.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) on samples collected in 2011.

A. Objectives of the RGPP

The long-term objectives of the RGPP are as follows:

1. Identify suitable locations to monitor and evaluate potential impacts from station operations before significant radiological impact to the environment and potential drinking water sources.
2. Understand the local hydrogeologic regime in the vicinity of the station and maintain up-to-date knowledge of flow patterns on the surface and shallow subsurface.
3. Perform routine water sampling and radiological analysis of water from selected locations.
4. Report new leaks, spills, or other detections with potential radiological significance to stakeholders in a timely manner.
5. Regularly assess analytical results to identify adverse trends.
6. Take necessary corrective actions to protect groundwater resources.

B. Implementation of the Objectives

The objectives identified have been implemented at LaSalle County Station as discussed below:

Exelon and its consultant identified locations as described in the 2006 Phase 1 study. Phase 1 studies were conducted by Conestoga Rovers and Associates (CRA) and the results and conclusions were made available to state and federal regulators.

1. The LaSalle County Station reports describe the local hydrogeologic regime. Periodically, the flow patterns on the

surface and shallow subsurface are updated based on ongoing measurements.

2. LaSalle County Station will continue to perform routine sampling and radiological analysis of water from selected locations.
3. LaSalle County Station has implemented procedures to identify and report new leaks, spills, or other detections with potential radiological significance in a timely manner.
4. LaSalle County Station staff and consulting hydrogeologist assess analytical results on an ongoing basis to identify adverse trends.

C. Program Description

1. Sample Collection

Sample locations can be found in Table A-1, Appendix A.

Groundwater and Surface Water

Samples of water are collected, managed, transported and analyzed in accordance with approved procedures following EPA methods. Both groundwater and surface samples water are collected. Sample locations, sample collection frequencies and analytical frequencies are controlled in accordance with approved station procedures. Contractor and/or station personnel are trained in the collection, preservation management, and shipment of samples, as well as in documentation of sampling events. Analytical laboratories are subject to internal quality assurance programs, industry cross-check programs, as well as nuclear industry audits. Station personnel review and evaluate all analytical data deliverables as data are received.

Analytical data results are reviewed by both station personnel and an independent hydrogeologist for adverse trends or changes to hydrogeologic conditions.

D. Characteristics of Tritium (H-3)

Tritium (chemical symbol H-3) is a radioactive isotope of hydrogen. The most common form of tritium is tritium oxide, which is also called "tritiated water." The chemical properties of tritium are essentially those of ordinary hydrogen.

Tritiated water behaves the same as ordinary water in both the

environment and the body. Tritium can be taken into the body by drinking water, breathing air, eating food, or absorption through skin. Once tritium enters the body, it disperses quickly and is uniformly distributed throughout the body. Tritium is excreted primarily through urine with a clearance rate characterized by an effective biological half-life of about 14 days. Within one month or so after ingestion, essentially all tritium is cleared. Organically bound tritium (tritium that is incorporated in organic compounds) can remain in the body for a longer period.

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

Tritium has a half-life of approximately 12.3 years. It decays spontaneously to helium-3 (^3He). This radioactive decay releases a beta particle (low-energy electron). The radioactive decay of tritium is the source of the health risk from exposure to tritium. Tritium is one of the least dangerous radionuclides because it emits very weak radiation and leaves the body relatively quickly. Since tritium is almost always found as water, it goes directly into soft tissues and organs. The associated dose to these tissues is generally uniform and is dependent on the water content of the specific tissue.

III. Program Description

A. Sample Analysis

This section describes the general analytical methodologies used by TBE to analyze the environmental samples for radioactivity for the LaSalle County Station RGPP in 2011. Sample and analysis and frequency is based upon well location, assessed risk and site hydrogeology as described in the RGPP.

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

1. Concentrations of gamma emitters in groundwater and surface water.
2. Concentrations of strontium in groundwater.

3. Concentrations of tritium in groundwater and surface water.
4. Concentrations of Gross Alpha, Dissolved and Suspended and Gross Beta, Dissolved and Suspended in groundwater.
5. Concentrations of Am-241 in groundwater.
6. Concentrations of Cm-242 and Cm-243/244 in groundwater.
7. Concentrations of Pu-238 and PU-239/240 in groundwater.
8. Concentrations of U-234, U-235 and U-238 in groundwater.
9. Concentrations of Fe-55 in groundwater.
10. Concentrations of Ni-63 in groundwater.

B. Data Interpretation

The radiological data collected prior to LaSalle County Station becoming operational were used as a baseline with which these operational data were compared. For the purpose of this report, LaSalle County Station was considered operational at initial criticality. Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

The lower limit of detection (LLD) is specified by federal regulation as a minimum sensitivity value that must be achieved routinely by the analytical parameter.

2. Laboratory Measurements Uncertainty

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

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

or minus \pm the estimated sample standard deviation, as TPU, that is obtained by propagating all sources of analytical uncertainty in measurements.

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

C. Background Analysis

A pre-operational radiological environmental monitoring program (pre-operational REMP) was conducted to establish background radioactivity levels prior to operation of the Station. The environmental media sampled and analyzed during the pre-operational REMP were atmospheric radiation, fall-out, domestic water, surface water, precipitation, marine life, and foodstuffs. The results of the monitoring were detailed in the report entitled, Environmental Radiological Monitoring for LaSalle County Nuclear Power Station, Commonwealth Edison Company, Annual Reports for the years 1979 and 1981. The pre-operational REMP contained analytical results from samples collected from the surface water and groundwater.

1. Background Concentrations of Tritium

The purpose of the following discussion is to summarize background measurements of tritium in various media performed by others. Additional detail may be found by consulting references (CRA 2006).

a. Tritium Production

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

A major anthropogenic source of tritium and strontium-90 comes from the former atmospheric testing of thermonuclear

weapons. Levels of tritium in precipitation increased significantly during the 1950s and early 1960s, and later with additional testing, resulting in the release of significant amounts of tritium to the atmosphere. The Canadian heavy water nuclear power reactors, other commercial power reactors, nuclear research and weapons production continue to influence tritium concentrations in the environment.

b. Precipitation Data

Precipitation samples are routinely collected at stations around the world for the analysis of tritium and other radionuclides. Two publicly available databases that provide tritium concentrations in precipitation are Global Network of Isotopes in Precipitation (GNIP) and USEPA's RadNet database. GNIP provides tritium precipitation concentration data for samples collected world wide from 1960 to 2006. RadNet provides tritium precipitation concentration data for samples collected at stations throughout the U.S. from 1960 up to and including 2006. Based on GNIP data for sample stations located in the U.S. Midwest, tritium concentrations peaked around 1963. This peak, which approached 10,000 pCi/L for some stations, coincided with the atmospheric testing of thermonuclear weapons. Tritium concentrations in surface water showed a sharp decline up until 1975 followed by a gradual decline since that time. Tritium concentrations in Midwest precipitation have typically been below 100 pCi/L since around 1980. LaSalle's 1979 or 1981 pre-operational REMP showed precipitation tritium concentrations >300 pCi/L. Tritium concentrations in wells may still be above the 200 pCi/L detection limit from the external causes described above. Water from previous years and decades is naturally captured in groundwater, so some well water sources today are affected by the surface water from the 1960s that was elevated in tritium.

Surface Water Data

Tritium concentrations are routinely measured in large surface water bodies, including Lake Michigan and the Mississippi River. Illinois surface water data were typically less than 100 pCi/L. Illinois River H3 results have shown >200 pCi/L, as evidenced in LaSalle's REMP program sample results. This could be attributable to releases from Braidwood and Dresden upstream.

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

The radio-analytical laboratory is counting tritium results to an Exelon specified LLD of 200 pCi/L. Typically, the lowest positive measurement will be reported within a range of 40 – 240 pCi/L or 140 ± 100 pCi/L. Clearly, these sample results cannot be distinguished as different from background at this concentration.

IV. Results and Discussion

A. Groundwater Results

Groundwater

Samples were collected from on-site wells throughout the year in accordance with the station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from 15 locations were analyzed for tritium activity (Table B-I.1, Appendix B). Tritium values ranged from <LLD to 290,000 pCi/L at well TW-LS-118S. Based on the hydrogeological study conducted at LaSalle, there is no feasible pathway into a drinking water supply. Based on established aquifer flow paths the location most representative of potential offsite release into groundwater was also less than the detection limit.

Strontium

Strontium-90 was analyzed for in 8 samples from 8 groundwater locations and was less than the required detection limit of 1.0 pCi/liter (Table B-I.1, Appendix B).

Gross Alpha and Gross Beta (dissolved and suspended)

Gross Alpha (dissolved) was not detected in any of the groundwater locations. Gross Alpha (suspended) was detected in

3 of 7 samples affecting 3 of 7 groundwater locations analyzed. The concentrations ranged from 3.4 to 8.7 pCi/L. Gross Beta (dissolved) was detected in 4 of 7 samples affecting 4 of 7 groundwater locations analyzed. The concentrations ranged from 3.1 to 9.3 pCi/L. Gross Beta (suspended) was detected in 6 of 7 samples affecting 6 of 7 groundwater locations analyzed. The concentrations ranged from 2.3 to 71.2 pCi/L (Table B-I.1, Appendix B).

Gamma Emitters

Naturally occurring K-40 was detected in two samples. The concentrations ranged from 43 to 57 pCi/L. No other gamma emitting nuclides were detected in any of the samples analyzed (Table B-I.2, Appendix B).

Hard-To-Detect

Hard-To-Detect analyses were performed on a select group of groundwater locations to establish background levels. The analyses included Fe-55, Ni-63, Am-241, Cm-242, Cm-243/244, Pu-238, Pu-239/240, U-234, U-235, and U-238. The isotopes of U-234 and U-238 was detected in one sample affecting 1 of 1 groundwater monitoring locations analyzed. The U-234 concentration ranged was 1.42 pCi/L and the U-238 concentration was 1.2 pCi/L. The levels detected are considered background (Table B-I.3, Appendix B).

All other hard-to-detect nuclides were not detected at concentrations greater than their respective MDCs.

B. Surface Water Results

Surface Water

Samples were collected from on and off-site surface water locations throughout the year in accordance with the station radiological groundwater protection program. Analytical results and anomalies are discussed below.

Tritium

Samples from four locations were analyzed for tritium activity (Table B-II.1, Appendix B). Seven of 21 samples from 2 of 4 surface water locations did show activity above 200 pCi/L. The concentrations ranged from 239 to 1470 pCi/L. Based on the

hydrogeological study conducted at LaSalle, there is no feasible pathway into a drinking water supply. Based on established aquifer flow paths the location most representative of potential offsite release into groundwater was also less than the detection limit.

Strontium

Strontium-90 was not analyzed in any surface water samples in 2011.

Gamma Emitters

Gamma emitting nuclides were not analyzed in any surface water samples in 2011.

C. Drinking Water Well Survey

A drinking water well survey was conducted during the summer 2006 by CRA (CRA 2006) around the LaSalle County Station. This survey concluded that no residents in the vicinity of the plant utilize the shallow water aquifer as a drinking water supply. Site hydrological studies of aquifer flow and permeation rates from the shallow aquifer to the deep aquifer concluded that there is no feasible dose receptor via a ground water pathway at LaSalle.

D. Summary of Results – Inter-Laboratory Comparison Program

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

E. Leaks, Spills, and Releases

There were no new leaks identified at LaSalle Station during the reporting period.

F. Trends

Analysis results from samples continue to be trended in order to assess impact to groundwater at LaSalle Station. There were no new leaks identified in the reporting period. Sample data from the plume arising from the 2010 U1 CY tank leak is being trended per the LaSalle RGPP. The plume is currently dispersing with the groundwater flow as to be expected. Currently, no tritium has migrated offsite, and tritium migration offsite is not expected.

G. Investigations

No investigations were carried out during the reporting period.

H. Actions Taken

1. Compensatory Actions

No compensatory actions were taken during the reporting period.

2. Installation of Monitoring Wells

No new monitoring wells were installed during the reporting period.

3. Actions to Recover/Reverse Plumes

LaSalle station is currently utilizing Natural Monitored Attenuation to remediate the plume resultant from the U1 CY tank leak that occurred in June – July 2010.

APPENDIX A

LOCATION DESIGNATION

TABLE A-1

LaSalle County Station Groundwater Monitoring Sample Point List, 2011

| Site | Site Type |
|------------|-----------------|
| SW-LS-101 | Surface Water |
| SW-LS-102 | Surface Water |
| SW-LS-103 | Surface Water |
| SW-LS-104 | Surface Water |
| SW-LS-105 | Surface Water |
| SW-LS-106 | Surface Water |
| MW-LS-101S | Monitoring Well |
| MW-LS-102S | Monitoring Well |
| MW-LS-103S | Monitoring Well |
| MW-LS-104S | Monitoring Well |
| MW-LS-105S | Monitoring Well |
| MW-LS-106S | Monitoring Well |
| MW-LS-107S | Monitoring Well |
| MW-LS-108S | Monitoring Well |
| MW-LS-109S | Monitoring Well |
| MW-LS-110S | Monitoring Well |
| MW-LS-111S | Monitoring Well |
| MW-LS-112S | Monitoring Well |
| MW-LS-113S | Monitoring Well |
| HP-2 | Monitoring Well |
| HP-5 | Monitoring Well |
| HP-7 | Monitoring Well |
| HP-10 | Monitoring Well |
| TW-LS-114S | Monitoring Well |
| TW-LS-115S | Monitoring Well |
| TW-LS-116S | Monitoring Well |
| TW-LS-117S | Monitoring Well |
| TW-LS-118S | Monitoring Well |
| TW-LS-119S | Monitoring Well |

APPENDIX A-1

**LASALLE COUNTY STATION MAP OF GROUNDWATER
MONITORING SAMPLE LOCATIONS**

APPENDIX B

DATA TABLES

TABLE B-I.1 CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

| SITE | COLLECTION | | H-3 | SR-90 | GR-A (DIS) | GR-A (SUS) | GR-B (DIS) | GR-B (SUS) |
|------------|------------|------------|----------------|-------|------------|------------|------------|------------|
| | DATE | | | | | | | |
| HP-10 | 03/21/11 | | < 144 | < 0.7 | < 1.9 | < 1.2 | < 2.9 | < 2.6 |
| HP-10 | 06/16/11 | | < 176 | | | | | |
| HP-10 | 08/16/11 | | < 174 | | | | | |
| HP-10 | 11/18/11 | | < 191 | | | | | |
| HP-2 | 03/21/11 | | < 145 | < 0.6 | < 0.8 | < 1.1 | 9.3 ± 1.2 | 4.8 ± 1.4 |
| HP-2 | 06/16/11 | | < 171 | | | | | |
| HP-2 | 08/15/11 | | < 177 | | | | | |
| HP-2 | 11/18/11 | | < 188 | | | | | |
| HP-5 | 03/21/11 | | < 144 | < 0.9 | < 1.7 | 3.4 ± 1.1 | 3.1 ± 1.2 | 2.3 ± 1.1 |
| HP-5 | 06/16/11 | | < 172 | | | | | |
| HP-5 | 08/15/11 | | < 175 | | | | | |
| HP-5 | 11/18/11 | | < 186 | | | | | |
| HP-7 | 03/22/11 | | < 145 | < 0.6 | < 1.9 | 4.3 ± 1.3 | 7.4 ± 1.6 | 3.9 ± 1.2 |
| HP-7 | 06/16/11 | | < 171 | | | | | |
| HP-7 | 08/16/11 | | < 174 | | | | | |
| HP-7 | 11/23/11 | | < 183 | | | | | |
| MW-LS-104S | 03/21/11 | | 58800 ± 4770 | < 0.6 | < 0.9 | < 0.7 | < 1.4 | 6.4 ± 1.6 |
| MW-LS-104S | 06/23/11 | | 111000 ± 11000 | | | | | |
| MW-LS-104S | 06/23/11 | Reanalysis | 108000 ± 10800 | | | | | |
| MW-LS-104S | 08/15/11 | | 150000 ± 14800 | | | | | |
| MW-LS-104S | 11/16/11 | | 149000 ± 14900 | | | | | |
| MW-LS-105S | 03/22/11 | | 506 ± 115 | < 0.7 | < 1.2 | 8.7 ± 3.7 | 3.7 ± 1.3 | 71.2 ± 6.1 |
| MW-LS-105S | 06/15/11 | | 573 ± 138 | | | | | |
| MW-LS-105S | 08/15/11 | | 721 ± 143 | | | | | |
| MW-LS-105S | 11/18/11 | | 228 ± 128 | | | | | |
| MW-LS-106S | 03/22/11 | | < 145 | | | | | |
| MW-LS-107S | 03/21/11 | | < 144 | < 1.0 | < 11.6 | < 2.9 | < 12.1 | 18.3 ± 7.8 |
| MW-LS-107S | 06/16/11 | | < 172 | | | | | |
| MW-LS-107S | 08/15/11 | | < 175 | | | | | |
| MW-LS-107S | 11/18/11 | | < 185 | | | | | |
| MW-LS-111S | 03/22/11 | | < 191 | | | | | |
| MW-LS-111S | 06/17/11 | | < 174 | < 0.8 | | | | |
| MW-LS-111S | 08/16/11 | | < 175 | | | | | |
| MW-LS-111S | 11/23/11 | | < 186 | | | | | |
| TW-LS-114S | 11/16/11 | | < 186 | | | | | |
| TW-LS-114S | 03/21/11 | | < 175 | | | | | |
| TW-LS-114S | 06/16/11 | | < 173 | | | | | |
| TW-LS-114S | 08/15/11 | | < 176 | | | | | |
| TW-LS-115S | 03/21/11 | | < 191 | | | | | |
| TW-LS-115S | 06/16/11 | | < 177 | | | | | |
| TW-LS-115S | 08/15/11 | | < 177 | | | | | |
| TW-LS-115S | 11/16/11 | | < 183 | | | | | |
| TW-LS-116S | 03/23/11 | | 35200 ± 3570 | | | | | |
| TW-LS-116S | 06/23/11 | | 6190 ± 661 | | | | | |
| TW-LS-116S | 06/23/11 | Reanalysis | 5540 ± 614 | | | | | |
| TW-LS-116S | 08/17/11 | | 25700 ± 2610 | | | | | |
| TW-LS-116S | 08/17/11 | Reanalysis | 25600 ± 2600 | | | | | |
| TW-LS-116S | 11/16/11 | | 19600 ± 2010 | | | | | |
| TW-LS-117S | 03/22/11 | | < 187 | | | | | |

**TABLE B-I.1 CONCENTRATIONS OF TRITIUM, STRONTIUM, GROSS ALPHA, AND GROSS BETA
IN GROUNDWATER SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY
STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

| SITE | COLLECTION DATE | H-3 | SR-90 | GR-A (DIS) | GR-A (SUS) | GR-B (DIS) | GR-B (SUS) |
|------------|---------------------|--------------------|-------|------------|------------|------------|------------|
| TW-LS-117S | 06/15/11 | < 173 | | | | | |
| TW-LS-117S | 08/15/11 | < 174 | | | | | |
| TW-LS-117S | 11/18/11 | < 184 | | | | | |
| TW-LS-118S | 03/23/11 | 22100 \pm 2260 | | | | | |
| TW-LS-118S | 06/23/11 | 69300 \pm 6920 | | | | | |
| TW-LS-118S | 06/23/11 Reanalysis | 75400 \pm 7540 | | | | | |
| TW-LS-118S | 08/15/11 | 78700 \pm 7890 | | | | | |
| TW-LS-118S | 11/16/11 | 290000 \pm 28700 | | | | | |
| TW-LS-119S | 03/21/11 | < 187 | | | | | |
| TW-LS-119S | 07/08/11 | 586 \pm 150 | (1) | | | | |
| TW-LS-119S | 07/08/11 Reanalysis | 586 \pm 132 | (1) | | | | |
| TW-LS-119S | 08/17/11 | 525 \pm 135 | | | | | |
| TW-LS-119S | 11/16/11 | 828 \pm 152 | | | | | |

(1) SAMPLE COLLECTED ON 07/08/11 DUE TO SAMPLE POINT BEING OBSTRUCTED DURING SECOND QUARTER COLLECTION

TABLE B-1.2
CONCENTRATIONS OF GAMMA EMITTERS IN GROUNDWATER
SAMPLES COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

| SITE | COLLECTION PERIOD | Be-7 | K-40 | Mn-54 | Co-58 | Fe-59 | Co-60 | Zn-65 | Nb-95 | Zr-95 | I-131 | Cs-134 | Cs-137 | Ba-140 | La-140 |
|------------|-------------------|------|---------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| HP-10 | 03/21/11 | < 12 | < 10 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 2 | < 13 | < 1 | < 1 | < 17 | < 4 |
| HP-2 | 03/21/11 | < 13 | < 9 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 2 | < 14 | < 1 | < 1 | < 18 | < 6 |
| HP-5 | 03/21/11 | < 13 | < 32 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 3 | < 14 | < 1 | < 1 | < 19 | < 6 |
| HP-7 | 03/22/11 | < 12 | < 10 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 2 | < 14 | < 1 | < 1 | < 18 | < 5 |
| MW-LS-104S | 03/21/11 | < 13 | < 35 | < 1 | < 1 | < 3 | < 1 | < 3 | < 1 | < 2 | < 14 | < 1 | < 1 | < 21 | < 6 |
| MW-LS-104S | 08/15/11 | < 14 | 57 ± 23 | < 1 | < 1 | < 4 | < 1 | < 2 | < 1 | < 2 | < 12 | < 1 | < 1 | < 37 | < 13 |
| MW-LS-105S | 03/22/11 | < 13 | < 10 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 2 | < 14 | < 1 | < 1 | < 19 | < 5 |
| MW-LS-107S | 03/21/11 | < 12 | 43 ± 28 | < 1 | < 1 | < 3 | < 1 | < 2 | < 1 | < 2 | < 14 | < 1 | < 1 | < 18 | < 6 |
| MW-LS-111S | 06/17/11 | < 14 | < 11 | < 1 | < 2 | < 3 | < 1 | < 2 | < 2 | < 3 | < 11 | < 1 | < 1 | < 18 | < 5 |

**TABLE B-I.3 CONCENTRATIONS OF HARD TO DETECTS IN GROUNDWATER SAMPLES COLLECTED
IN THE VICINITY OF LASALLE COUNTY STATION, 2011**

RESULTS IN UNITS OF PCI/LITER ± 2 SIGMA

| SITE | COLLECTION PERIOD | AM-241 | CM-242 | CM-243/244 | PU-238 | PU-239/240 | U-234 | U-235 | U-238 | FE-55 | NI-63 |
|------------|-------------------|--------|--------|------------|--------|------------|-------------|--------|-------------|-------|--------|
| MW-LS-104S | 03/21/11 | < 0.10 | < 0.08 | < 0.09 | < 0.08 | < 0.02 | 1.42 ± 0.38 | < 0.05 | 1.20 ± 0.34 | < 104 | < 4.54 |

**TABLE B-II.1 CONCENTRATIONS OF TRITIUM IN SURFACE WATER SAMPLES
COLLECTED IN THE VICINITY OF LASALLE COUNTY STATION, 2011**

RESULTS IN UNITS OF PCI/LITER \pm 2 SIGMA

| SITE | COLLECTION DATE | H-3 |
|-----------|---------------------|----------------|
| SW-LS-101 | 03/22/11 | < 171 |
| SW-LS-101 | 06/17/11 | < 182 |
| SW-LS-101 | 08/16/11 | < 179 |
| SW-LS-101 | 11/23/11 | < 184 |
| SW-LS-102 | 03/22/11 | < 196 |
| SW-LS-102 | 05/18/11 | < 190 |
| SW-LS-102 | 06/23/11 | < 193 |
| SW-LS-102 | 08/16/11 | 786 \pm 147 |
| SW-LS-102 | 08/16/11 Recount | 742 \pm 145 |
| SW-LS-102 | 08/16/11 Reanalysis | 660 \pm 142 |
| SW-LS-102 | 08/16/11 | 960 \pm 158 |
| SW-LS-102 | 10/04/11 | 449 \pm 132 |
| SW-LS-102 | 11/23/11 | 1470 \pm 223 |
| SW-LS-102 | 11/23/11 Recount | 1150 \pm 211 |
| SW-LS-102 | 11/23/11 Reanalysis | 1190 \pm 180 |
| SW-LS-103 | 03/22/11 | < 158 |
| SW-LS-103 | 06/17/11 | 561 \pm 139 |
| SW-LS-103 | 06/17/11 Reanalysis | 522 \pm 152 |
| SW-LS-103 | 06/17/11 | 741 \pm 139 |
| SW-LS-103 | 06/17/11 Recount | 671 \pm 146 |
| SW-LS-103 | 08/09/11 | 239 \pm 112 |
| SW-LS-103 | 08/16/11 | < 176 |
| SW-LS-103 | 11/23/11 | < 188 |
| SW-LS-106 | 03/22/11 | < 159 |
| SW-LS-106 | 06/17/11 | < 171 |
| SW-LS-106 | 08/16/11 | < 173 |
| SW-LS-106 | 11/23/11 | < 185 |