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Nuclear

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Quad Cities Nuclear Power Station, Units 1 and 2  
Facility Operating License Nos. DPR-29 and DPR-30  
NRC Docket Nos. 50-254 and 50-265

Subject: Quad Cities Nuclear Station Annual Radiological Environmental Operating Report

In accordance with Quad Cities Technical Specifications 5.6.2, we are submitting the 2002 Radiological Environmental Operating Report for Quad Cities Nuclear Power Station. This report contains the results of the radiological environmental and meteorological monitoring programs.

Should you have any questions concerning this letter, please contact Mr. W. J. Beck at (309) 227-2800.

Respectfully,



Timothy J. Tulon  
Site Vice President  
Quad Cities Nuclear Power Station

Attachment: The Quad Cities Nuclear Power Station 2002 Annual Radiological Environmental Operating Report

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

IE 25

## **Attachment**

# **The Quad Cities Nuclear Power Station 2002 Annual Radiological Environmental Operating Report**

**QUAD CITIES STATION  
ANNUAL RADIOLOGICAL  
ENVIRONMENTAL OPERATING  
REPORT**

**2002**

**MAY 2003**

## TABLE OF CONTENTS

|  | <u>Page</u> |
|--|-------------|
| INTRODUCTION.....  | 1           |
| SUMMARY .....  | 2           |
| <br>1.0 EFFLUENTS  |             |
| 1.1 Gaseous Effluents to the Atmosphere .....            | 3           |
| 1.2 Liquids Released to Mississippi River .....          | 3           |
| <br>2.0 SOLID RADIOACTIVE WASTE .....                    | 3           |
| <br>3.0 DOSE TO MAN                                      |             |
| 3.1 Gaseous Effluent Pathways .....                      | 3           |
| 3.1.1 Noble Gases .....                                  | 4           |
| 3.1.1.1 Gamma Dose Rates .....                           | 4           |
| 3.1.1.2 Beta Air and Skin Rates .....                    | 4           |
| 3.1.2 Radioactive Iodine .....                           | 5           |
| 3.1.2.1 Iodine Concentrations in Air .....               | 5           |
| 3.1.2.2 Dose to Thyroid.....                             | 5           |
| 3.1.3 Concentrations of Particulates in Air.....         | 5           |
| 3.2 Liquid Effluent Pathways.....                        | 5           |
| 3.3 Assessment of Dose to Member of Public .....         | 6           |
| <br>4.0 SITE METEOROLOGY .....                           | 6           |
| <br>5.0 ENVIRONMENTAL MONITORING.....                    | 7           |
| 5.1 Gamma Radiation.....                                 | 7           |
| 5.2 Airborne I-131 and Particulate Radioactivity.....    | 7           |
| 5.3 Aquatic Radioactivity.....                           | 7           |
| 5.4 Milk.....  | 8           |
| 5.5 Terrestrial Radioactivity .....                      | 8           |
| 5.6 Sample Collections.....                              | 8           |
| 5.7 Program Modifications.....                           | 8           |
| <br>6.0 ANALYTICAL PROCEDURES .....                      | 9           |
| <br>7.0 MILCH ANIMALS AND NEAREST LIVESTOCK CENSUS ..... | 9           |
| <br>8.0 NEAREST RESIDENCE CENSUS.....                    | 9           |
| <br>9.0 INTERLABORATORY COMPARISON PROGRAM RESULTS.....  | 9           |
| <br>10.0 ERRATA DATA.....                                | 9           |

## TABLE OF CONTENTS (continued)

|  | <u>Page</u> |
|--|-------------|
| APPENDIX I - DATA TABLES AND FIGURES .....   | I-1         |
| Station Releases   |             |
| Table 1.1-1 Gaseous Effluents Summation of all Releases .....  | I-2         |
| Table 1.2-1 Liquid Effluents Summation of all Releases .....   | I-4         |
| Table 2.0-1 Solid Radwaste Annual Report .....   | I-6         |
| Figure 3.1-1 - Figure 3.1-4  |             |
| Isodose and Concentration Contours .....   | I-7         |
| Table 3.1-1 Maximum Doses Resulting from Airborne Releases .....   | I-11        |
| Table 3.2-1 Maximum Doses Resulting from Liquid Effluents .....  | I-12        |
| Table 3.3-1 10CFR20 Compliance Assessment .....  | I-13        |
| Table 3.4-1 Maximum Doses Resulting from Airborne Releases Based on Concurrent Meteorological Data .....           | I-15        |
| Environmental Monitoring   |             |
| Figure 5.0-1 Near Fixed Air Sampling Sites and Outer Ring TLD Locations .....                                      | I-17        |
| Figure 5.0-2 Inner Ring TLD Locations .....  | I-18        |
| Figure 5.0-3 Milk, Fish, Water and Sediment Locations .....  | I-19        |
| Table 5.0-1 Radiological Environmental Monitoring Locations .....  | I-20        |
| Table 5.0-2 Radiological Environmental Monitoring Program Sampling Locations, Sample Collection and Analyses ..... | I-21        |
| Table 5.0-3 - Table 5.0-6 Radiological Environmental Monitoring Program Quarterly Summary .....                    | I-27        |
| APPENDIX II - METEOROLOGICAL DATA .....  | II-1        |
| APPENDIX III - 2001 REMP SAMPLE RESULTS .....  | III-1       |
| APPENDIX IV - INTERLABORATORY COMPARISON PROGRAM RESULTS .....   | IV-1        |
| APPENDIX V - ERRATA DATA (If applicable) .....   | V-1         |

## INTRODUCTION

Units 1 and 2 of the Quad Cities Station, located near Cordova, Illinois next to the Mississippi River, are 2957 MW<sub>th</sub> boiling water reactors. The station has been designed to keep releases to the environment at levels below those specified in the regulations.

Liquid effluents from Quad Cities are released to the Mississippi 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 grab samples of noble gases as well as continuously collected composite samples of iodine and particulate activity 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, I-131, and particulate radioactivity in offsite areas are calculated using isotopic composition of effluent and meteorological data.

Environmental monitoring is conducted by sampling at indicator and control (background) locations in the vicinity of the Quad Cities Nuclear Power Station to measure changes in radiation or radioactivity levels that may be attributable to station operations. If significant changes attributable to Quad Cities Nuclear Power 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 most critical pathways at this site; however, an environmental monitoring program is conducted which includes these and other pathways.

## SUMMARY

Calculations based gaseous and liquid effluents and hydrogen addition activities indicate that public dose due to radioactive material attributable to Quad Cities Station during the period does not exceed regulatory or Offsite Dose Calculation Manual (ODCM) limits.

The Total Effective Dose Equivalent (TEDE) due to licensed activities at Quad Cities Station calculated for the maximally-exposed individual for the period is 6.28 mrem. The annual limit on TEDE is 100 mrem. This value is largely dominated by the direct radiation constituent from the Unit 1 and Unit 2 turbines (5.94 mrem). The balance of the calculated maximum dose (0.34 mrem) is due to exposure from radionuclides released from the Station in liquid and gaseous effluents.

The assessment of radiation doses are performed in accordance with the ODCM. The results of these analyses 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 and isotopic composition of noble gases, radioiodine, and particulate radioactivity released to the atmosphere during the year, are listed in Table 1.1-1. A total of  $3.36\text{E}+02$  curies of fission and activation gases was released with a maximum quarterly average release rate of  $1.44\text{E}+01$   $\mu\text{Ci/sec}$ .

A total of  $5.45\text{E}-03$  curies of I-131 was released during the year with a maximum quarterly average release rate of  $2.88\text{E}-04$   $\mu\text{Ci/sec}$ .

A total of  $2.96\text{E}-02$  curies of beta-gamma emitters was released as airborne particulate matter with a maximum quarterly average release rate of  $2.36\text{E}-03$   $\mu\text{Ci/sec}$ . A total of  $2.39\text{E}-05$  curies of alpha-emitting radionuclides was released.

A total of  $1.82\text{E}+02$  curies of tritium was released with a maximum quarterly average release rate of  $7.56\text{E}+00$   $\mu\text{Ci/sec}$ .

### 1.2 Liquids Released to the Mississippi River

A total of  $7.91\text{E}+06$  liters of radioactive liquid waste (prior to dilution) containing  $7.68\text{E}-02$  curies (excluding tritium, noble gases, and alpha) was discharged from the station. These wastes were released at a maximum quarterly average diluted concentration of  $7.10\text{E}-09$   $\mu\text{Ci/ml}$ . No alpha radioactivity was detected in the liquid waste. A total of  $4.42\text{E}+01$  curies of tritium was released at a maximum quarterly average concentration of  $1.73\text{E}-06$   $\mu\text{Ci/ml}$ . Quarterly release estimates and principal radionuclides in liquid effluents are given in Table 1.2-1.

## 2.0 SOLID RADIOACTIVE WASTE

Forty-one shipments of solid radioactive waste were shipped to waste processors via truck and 5 via rail during 2002; 15 shipments were sent, via truck, to disposal sites. For further detail, refer to the Quad Cities 2002 Effluent Report.

## 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

Offsite gamma air and total body doses 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. Isodose contours based on concurrent meteorological data for gamma dose are shown in Figure 3.1-1. Based on measured effluents and average meteorological data, the maximum total dose to an individual would be  $1.97\text{E-}02$  mrem for the year (Table 3.1-1), 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  $4.88\text{E-}02$  mrem (Table 3.4-1). The maximum gamma air dose was  $1.23\text{E-}03$  mrad (Table 3.1-1) based on measured effluents and average meteorological data and  $9.98\text{E-}03$  mrad based on concurrent meteorological data (Table 3.4-1).

#### 3.1.1.2 Beta Air and Skin Dose 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  $7.0\text{ mg/cm}^2$  and an occupancy factor of 1.0 is used. The skin dose from beta and gamma radiation for the year was  $5.85\text{E-}02$  mrem based on concurrent meteorological data (Table 3.4-1).

The air concentrations of radioactive noble gases at the offsite receptor locations are given in Figure 3.1-2. The maximum offsite beta air dose for the year was  $7.20\text{E-}04$  mrad (Table 3.1-1) and  $1.65\text{E-}03$  mrad based on concurrent meteorological data (Table 3.4-1).

The difference between the calculated doses from average meteorology and those calculated by the contractor from concurrent meteorology are attributable to:

1. Concurrent meteorology will almost always produce higher Chi/Q values than those using average meteorology data.
2. The dose calculated using concurrent meteorological data is also using a slightly different dose calculation than the ODCM calculation.

This is because not all of the Exelon sites have implemented the NUREG 0133 methodology in use at Quad Cities since January 2001.

### 3.1.2 Radioactive Iodine

The human thyroid exhibits a significant capacity to concentrate ingested or inhaled iodine. The radioiodine, I-131, released during routine operation of the station, may be made available to a person resulting in a dose to the thyroid. The principal pathway of interest for this radionuclide is ingestion of radioiodine in milk.

#### 3.1.2.1 Iodine Concentrations in Air

The calculated concentration contours for iodine in air are shown in Figure 3.1-3. These calculations include an iodine cloud depletion factor which accounts for the phenomenon of elemental iodine deposition on the ground. The maximum offsite concentration is estimated to be  $8.22\text{E-}05 \text{ pCi/m}^3$  for the year (Table 3.4-1).

#### 3.1.2.2 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 annual thyroid dose was  $3.86\text{E-}01 \text{ mrem}$  (infant) {Table 3.1-1}.

### 3.1.3 Concentrations of Particulates in Air

Concentration contours of radioactive airborne particulates are shown in Figure 3.1-4. The maximum offsite average level is estimated to be  $3.02\text{E+}00 \text{ pCi/m}^3$  (Table 3.4-1).

## 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

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\* Nuclear Regulatory Commission, NUREG 0133 methodology and Regulatory Guide 1.109 (Rev. 1) dose conversion factors.

the whole body, lower GI tracts, thyroid, bone, skin; specific parameters for use in the equations are given in the ComEd Offsite Dose Calculation Manual. The maximum whole body dose for the year was 2.46E-03 mrem and no organ dose exceeded 4.17E-03 mrem (Table 3.2-1 [teen]).

### 3.3 Assessment of Dose to Member of Public

During the period January to December, 2002, Quad Cities Station did not exceed the following limits as shown in Table 3.1-1 and Table 3.2-1 (based on yearly average meteorological data), as shown in Figure 3.1-1 (based on concurrent meteorological data), and as shown in Table 3.3-1:

- The RETS limits on dose or dose commitment to an individual due to radioactive materials in liquid effluents from each reactor unit (3 mrem to the whole body or 10 mrem to any organ during any calendar quarter; 6 mrem to the whole body or 20 mrem to any organ during any 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 mrad for gamma radiation or 20 mrad for beta radiation during any calendar year).
- The RETS limits on dose to any individual 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 RETS 40CFR190 limits for dose due to radioactive liquid and gaseous effluents to the whole body or any organ (25 mrem during the calendar year) and to the thyroid (75 mrem during the calendar year).
- The 10CFR20 limit on Total Effective Dose Equivalent to individual members of the public (100 mrem) during any calendar year.

### 4.0 SITE METEOROLOGY

A summary of the site meteorological measurements taken during each quarter of the year is given in Appendix II. The data are presented as cumulative joint frequency distributions of the wind direction for the 296' level and wind speed class by atmospheric stability class determined from the temperature difference between the 296' and 33' levels. Average data recovery for all measurements on the tower was 99.5% for 2002 (Table 3.4-1).

## 5.0 ENVIRONMENTAL MONITORING

Table 5.0-1 provides an outline of the Radiological Environmental Monitoring Program (REMP) as required in current Technical Specifications. Table 5.0-2 identifies the sampling locations, sample collections and analyses for each location. Tables 5.0-3 to 5.0-6 summarize data for the year. A detailed listing of all data is presented in Appendix III.

Specific findings for various environmental media are discussed below.

### 5.1 Gamma Radiation

External radiation dose from onsite sources and noble gases released to the atmosphere was measured using  $\text{CaF}_2$  thermoluminescent dosimeters (TLDs). The quarterly average external radiation dose for the year was 20.2 mR at the indicator locations and 19.1 mR at the control locations. TLD results are listed in Table 4.0 of Appendix III and locations are shown in Figure 5.0-1 and 5.0-2.

Quarterly average of external radiation dose (including background) at indicator air sampling locations averaged  $19.7 \pm 2.0$  mR and was similar to levels measured in 1986 (13.5 mR), 1987 (14.1 mR), 1988 (13.4 mR), 1989 (14.5 mR), 1990 (14.6 mR), 1991 (15.8 mR), 1992 (14.7 mR) and 1993 (14.1 mR), 1994 (14.1 mR), 1995 (15.0 mR), 1996 (14.8 mR), 1997 (13.5 mR), 1998 (15.1 mR), 1999 (14.9 mR), 2000 (15.2 mR) and 2001 (20.0 mR). The differences are not statistically different than the control locations.

### 5.2 Airborne I-131 and Particulate Radioactivity

Locations of the air samplers are shown in Figure 5.0-1. Airborne I-131 remained below the LLD of  $0.07 \text{ pCi/m}^3$  throughout the year.

Gross beta concentrations ranged from 0.011 to  $0.063 \text{ pCi/m}^3$  and averaged  $0.027 \text{ pCi/m}^3$  and was similar to overall average levels in 1985 ( $0.024 \text{ pCi/m}^3$ ), 1986 ( $0.025 \text{ pCi/m}^3$ ), except for the period from May 17 through June 7 when it was influenced by the nuclear reactor accident at Chernobyl), 1987 ( $0.023 \text{ pCi/m}^3$ ), 1988 ( $0.030 \text{ pCi/m}^3$ ), 1989 ( $0.028 \text{ pCi/m}^3$ ), 1990 ( $0.020 \text{ pCi/m}^3$ ), 1991 ( $0.022 \text{ pCi/m}^3$ ), 1992 ( $0.021 \text{ pCi/m}^3$ ), 1993 ( $0.021 \text{ pCi/m}^3$ ), 1994 ( $0.022 \text{ pCi/m}^3$ ), 1995 ( $0.022 \text{ pCi/m}^3$ ), 1996 ( $0.022 \text{ pCi/m}^3$ ), 1997 ( $0.022 \text{ pCi/m}^3$ ), 1998 ( $0.023 \text{ pCi/m}^3$ ), 1999 ( $0.027 \text{ pCi/m}^3$ ), 2000 ( $0.028 \text{ pCi/m}^3$ ) and 2001 ( $0.026 \text{ pCi/m}^3$ ).

No radioactivity attributable to station operation was detected in any sample.

### 5.3 Aquatic Radioactivity

Well water was collected quarterly from one nearsite well (Q-35) and one farsite well (Q-36) and was analyzed for tritium and gamma-emitting nuclides. All nuclides remained below the limits of detection for the year.

Weekly surface water samples from upstream (Q-34) and downstream (Q-33) from the station on the Mississippi River were composited monthly and analyzed for gamma-emitting nuclides and gross beta activity. Quarterly composites were analyzed for tritium.

Cs-134 and Cs-137 concentrations were below the LLD of 15 pCi/L and 18 pCi/L, respectively, in all samples.

Gross beta concentrations at Q-33 averaged 3.6 pCi/L with a range of 2.7-4.9 pCi/L; concentrations at Q-34 averaged 3.9 pCi/L with a range of 2.4-5.9 pCi/L.

Tritium concentrations remained below the LLD of 200 pCi/L in all samples.

Levels of gamma radioactivity in fish were measured and found in all cases to be below the lower limit of detection for the program. One downstream sediment sample was analyzed by gamma spectrometry. All gamma-emitters were below the limits of detection indicating that no radioactivity was found due to station operation.

Water, sediment, and fish sample locations are shown in Figure 5.0-3.

#### 5.4 Milk

Milk samples from the Bill Stanley Farm (located 3.5 miles east southeast of the station) were collected monthly from November through April and biweekly from May through October and analyzed for I-131.

I-131 remained below the detection limits during the non-grazing period (November through April) and the grazing period (May through October).

Milk sample locations are shown in Figure 5.0-3.

#### 5.5 Terrestrial Radioactivity

Vegetables were collected in the third quarter and analyzed for gamma-emitting nuclides. In addition, broad leaf vegetables were analyzed for I-131. All nuclides were below the limits of detection, indicating there was no measurable amount of radioactivity attributable to station releases.

#### 5.6 Sample Collections

All samples were collected as scheduled except those listed in the Listing of Missed Samples, Appendix III Table 2.0.

#### 5.7 Program Modifications

There were no changes to the program in 2002.

## 6.0 ANALYTICAL PROCEDURES

Procedures used during the period covered in this report remain unchanged. A summary of the procedures is given in Appendix VI of the 1993 Annual Radiological Environmental Operating Report.

## 7.0 MILCH ANIMALS AND NEAREST LIVESTOCK CENSUS

A census of milch animals and nearest livestock was conducted around the station by G. Kreuder. The survey was conducted on August 13, 2002.

Milch animal and nearest livestock census results are presented on pages 31 and 32 of Appendix III.

## 8.0 NEAREST RESIDENCE CENSUS

A census of the nearest residences within a 6.2-mile radius was conducted on August 13, 2002 by G. Kreuder.

The nearest residence census results are presented on page 33 of Appendix III.

## 9.0 INTERLABORATORY COMPARISON PROGRAM RESULTS

Teledyne's Interlaboratory Comparison Program Results are presented in Appendix IV.

## 10.0 ERRATA DATA

There is no errata data for 2002.

## APPENDIX I

### DATA TABLES AND FIGURES

**Table 1.1-1**

**ATTACHMENT 1  
Effluent & Waste Disposable Annual Report**

**GASEOUS EFFLUENTS – SUMMATION OF ALL RELEASES**

Period: January – June 2002

| <b>A. FISSION &amp; ACTIVATION GASES</b>  | <b>UNIT</b> | <b>FIRST<br/>QUARTER</b> | <b>SECOND<br/>QUARTER</b> | <b>EST. TOTAL<br/>ERROR %</b> |
|---|-------------|--------------------------|---------------------------|-------------------------------|
| 1. Total Release                          | Ci          | 7.98E+01                 | 1.13E+02                  | 12.4                          |
| 2. Average release rate for the period    | μCi/sec     | 1.03E+01                 | 1.44E+01                  |                               |
| 3. *Percent of ODCM limit Chimney & Stack | %           | 5.07E-03                 | 5.78E-03                  |                               |
|   |             | 1.51E-03                 | 1.90E-03                  |                               |

| <b>B. IODINE</b>                       |         |          |          |      |
|--|---------|----------|----------|------|
| 1. Total Iodine – 131.                 | Ci      | 9.55E-04 | 7.87E-04 | 40.0 |
| 2. Average release rate for the period | μCi/sec | 1.23E-04 | 1.00E-04 |      |

| <b>C. PARTICULATES</b>                   |         |          |          |      |
|--|---------|----------|----------|------|
| 1. Particulates with half-lives > 8 days | Ci      | 4.01E-03 | 2.51E-03 | 30.1 |
| 2. Average release rate for the period   | μCi/sec | 5.15E-04 | 3.20E-04 |      |
| 3. Gross alpha radioactivity             | Ci      | <LLD**   | 4.95E-06 |      |

| <b>D. TRITIUM</b>                      |         |          |          |     |
|--|---------|----------|----------|-----|
| 1. Total Release                       | Ci      | 3.51E+01 | 3.16E+01 | 8.1 |
| 2. Average release rate for the period | μCi/sec | 4.51E00  | 4.02E00  |     |

| <b>E. IODINE 131 &amp; 133, TRITIUM &amp; PARTICULATE</b> |   |         |          |  |
|---|---|---------|----------|--|
| 1. Percent of ODCM limit Chimney & Stack                  | % | 1.09E00 | 6.75E-01 |  |

\* % NOBLE GAS GAMMA/NOBLE GAS BETA DOSE LIMITS



**Table 1.1-1 (continued)**

**ATTACHMENT 1  
Effluent & Waste Disposable Annual Report**

**GASEOUS EFFLUENTS – SUMMATION OF ALL RELEASES**

Period: July – December 2002

| <b>A. FISSION &amp; ACTIVATION GASES</b>  | <b>UNIT</b> | <b>THIRD<br/>QUARTER</b> | <b>FOURTH<br/>QUARTER</b> | <b>EST. TOTAL<br/>ERROR %</b> |
|---|-------------|--------------------------|---------------------------|-------------------------------|
| 1. Total Release                          | CI          | 9.24E+01                 | 5.06E+01                  | 12.4                          |
| 2. Average release rate for the period    | µCi/sec     | 1.16E+01                 | 6.36E00                   |                               |
| 3. *Percent of ODCM limit Chimney & Stack | %           | 8.88E-03                 | 4.94E-03                  |                               |
|   |             | 2.34E-03                 | 1.45E-03                  |                               |

| <b>B. IODINE</b>                       |         |          |          |      |
|--|---------|----------|----------|------|
| 1. Total Iodine – 131.                 | CI      | 1.42E-03 | 2.29E-03 | 40.0 |
| 2. Average release rate for the period | µCi/sec | 1.79E-04 | 2.88E-04 |      |

| <b>C. PARTICULATES</b>                   |         |          |          |      |
|--|---------|----------|----------|------|
| 1. Particulates with half-lives > 8 days | CI      | 4.28E-03 | 1.88E-02 | 30.1 |
| 2. Average release rate for the period   | µCi/sec | 5.39E-04 | 2.36E-03 |      |
| 3. Gross alpha radioactivity             | CI      | 8.53E-06 | 1.04E-05 |      |

| <b>D. TRITIUM</b>                      |         |          |          |     |
|--|---------|----------|----------|-----|
| 1. Total Release                       | CI      | 6.01E+01 | 5.55E+01 | 8.1 |
| 2. Average release rate for the period | µCi/sec | 7.56E00  | 6.98E00  |     |

| <b>E. IODINE 131 &amp; 133, TRITIUM &amp; PARTICULATE</b> |   |         |         |  |
|---|---|---------|---------|--|
| 1. Percent of ODCM limit Chimney & Stack                  | % | 1.27E00 | 2.11E00 |  |

\* % NOBLE GAS GAMMA/NOBLE GAS BETA DOSE LIMITS

Table 1.2-1

**ATTACHMENT 1**  
**Effluent & Waste Disposable Annual Report**

**LIQUID EFFLUENTS – SUMMATION OF ALL RELEASES**

| A. FISSION & ACTIVATION PRODUCTS   | UNIT   | FIRST QUARTER | SECOND QUARTER | EST TOTAL ERROR% |          |
|--|--------|---------------|----------------|------------------|----------|
| 1. Total Release (not including tritium, gases & alpha)                  | Ci     | 4.24E-02      | 4.53E-03       | 5.6              |          |
| 2. Average diluted concentration during batch discharges for the period. | µCi/mL | 7.10E-09      | 5.45E-10       |                  |          |
| 3. Percent of applicable limit*  | %      | 1.19E-01      | 1.31E-02       |                  |          |
|  |        | 6.33E-02      | 6.90E-03       |                  |          |
| 4. Maximum diluted concentration during batch discharges                 | µCi/mL | 6.88E-09      | 6.35E-10       |                  |          |
| B. TRITIUM   |        |               |                |                  |          |
| 1. Total Release   | Ci     | 1.03E+01      | 6.22E00        | 4.1              |          |
| 2. Average diluted concentration during batch discharges for the period  | µCi/mL | 1.73E-06      | 7.48E-07       |                  |          |
| 3. Percent of applicable limit   | %      | 5.40E-02      | 3.21E-02       |                  |          |
| C. DISSOLVED & ENTRAINED GASES   |        |               |                |                  |          |
| 1. Total Release   | Ci     | <LLD          | <LLD           | 5.6              |          |
| 2. Average diluted concentration during batch discharges for the period  | µCi/mL | <LLD          | <LLD           |                  |          |
| 3. Percent of applicable limit   | %      | NA            | NA             |                  |          |
| D. GROSS ALPHA ACTIVITY  |        |               |                |                  |          |
| 1. Total Release   | Ci     | <LLD**        | <LLD**         | 14.8             |          |
| 2. Average diluted concentration during batch discharges for the period  | µCi/mL | NA            | NA             |                  |          |
| E. VOLUME OF WASTE RELEASED (prior to dilution)                          |        | Liters        | 2.30E+06       |                  | 1.24E+06 |
| F. VOLUME OF DILUTION WATER USED DURING BATCH DISCHARGES                 |        | Liters        | 5.97E+09       |                  | 8.32E+09 |
| G. TOTAL VOLUME OF DILUTION WATER USED DURING PERIOD (quarter)           | Liters | 2.00E+11      | 4.48E+11       |                  |          |

\* Whole Body/Organ (ODCM)

**Table 1.2-1 (continued)**

**ATTACHMENT 1  
Effluent & Waste Disposable Annual Report**

**LIQUID EFFLUENTS – SUMMATION OF ALL RELEASES**

| A. FISSION & ACTIVATION PRODUCTS   | UNIT   | THIRD<br>QUARTER | FOURTH<br>QUARTER | EST TOTAL<br>ERROR% |
|--|--------|------------------|-------------------|---------------------|
| 1. Total Release (not including tritium, gases & alpha)                  | CI     | 2.71E-03         | 2.72E-02          | 5.6                 |
| 2. Average diluted concentration during batch discharges for the period. | µCi/mL | 1.90E-10         | 2.81E-09          |                     |
| 3. Percent of applicable limit*  | %      | 2.16E-02         | 5.42E-02          |                     |
|  |        | 1.03E-02         | 2.69E-02          |                     |
| 4. Maximum diluted concentration during batch discharges                 | µCi/mL | 1.70E-10         | 6.83E-09          |                     |
| B. TRITIUM   |        |                  |                   |                     |
| 1. Total Release   | CI     | 1.53E+01         | 1.24E+01          | 4.1                 |
| 2. Average diluted concentration during batch discharges for the period  | µCi/mL | 1.08E-06         | 1.28E-06          |                     |
| 3. Percent of applicable limit   | %      | 8.02E-02         | 6.40E-02          |                     |
| C. DISSOLVED & ENTRAINED GASES   |        |                  |                   |                     |
| 1. Total Release   | CI     | <LLD             | 5.84E-05          | 5.6                 |
| 2. Average diluted concentration during batch discharges for the period  | µCi/mL | <LLD             | 6.04E-12          |                     |
| 3. Percent of applicable limit   | %      | NA               | 3.02E-06          |                     |
| D. GROSS ALPHA ACTIVITY  |        |                  |                   |                     |
| 1. Total Release   | CI     | <LLD**           | <LLD**            | 14.8                |
| 2. Average diluted concentration during batch discharges for the period  | µCi/MI | NA               | NA                |                     |
| E. VOLUME OF WASTE RELEASED (prior to dilution)                          | Liters | 1.81E+06         | 2.56E+06          |                     |
| F. VOLUME OF DILUTION WATER USED DURING BATCH DISCHARGES                 | Liters | 1.42E+10         | 9.67E+09          |                     |
| G. TOTAL VOLUME OF DILUTION WATER USED DURING PERIOD (quarter)           | Liters | 4.86E+11         | 3.14E+11          |                     |

\* Whole Body/Organ (ODCM)

TABLE 2.0-1

Table 2.0-1 has been deliberately deleted. For Solid Waste Disposal detail, refer to Quad Cities 2002 Effluent Report.

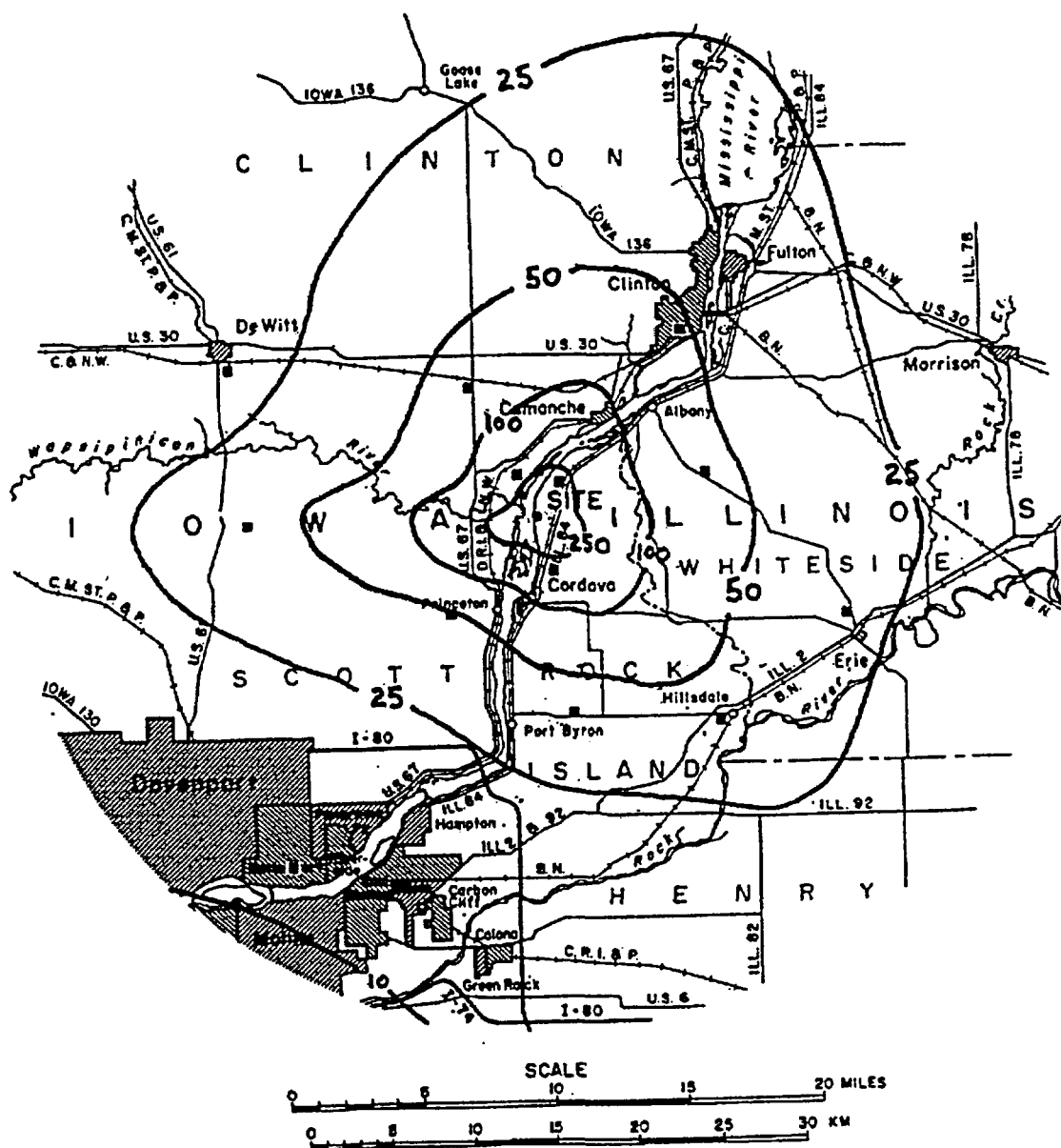
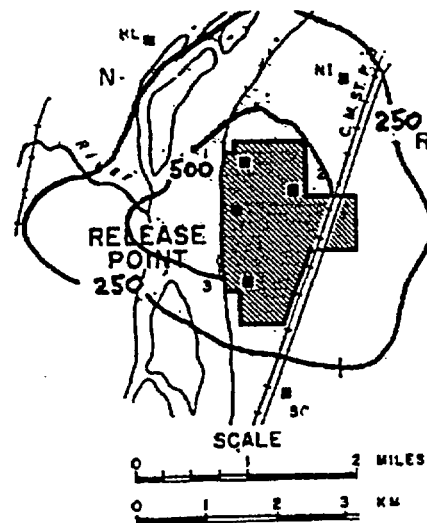
Figure 3.1-1

Estimated Cumulative Gamma Dose (in mrem)  
from the Quad Cities Station for the period  
January-December 2002

Isopleth Labels

Small figure - multiply by  $10^{-5}$

Large figure - multiply by  $10^{-3}$



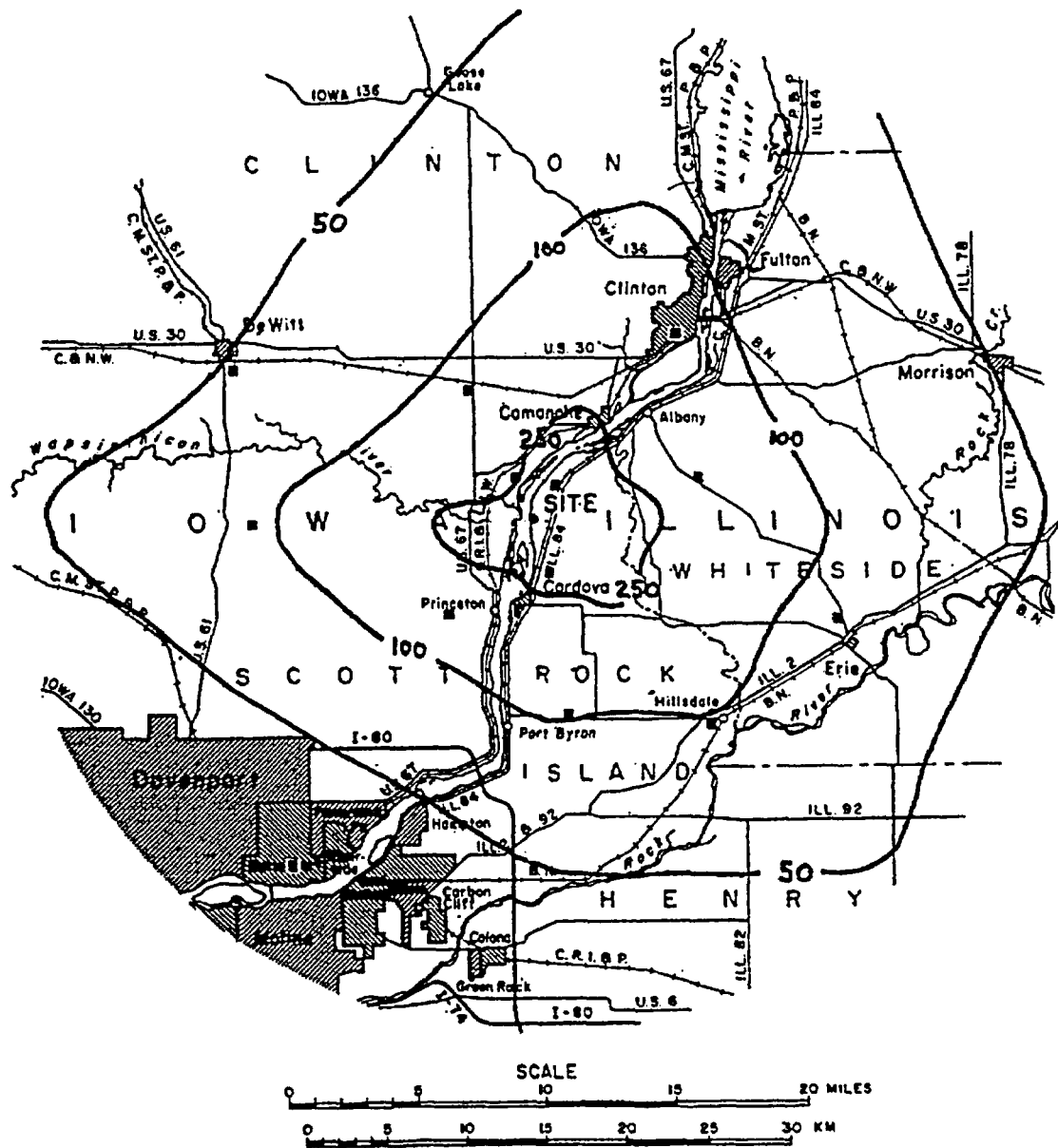
**Estimated Total Concentrations (in pCi/m3)  
of Noble Gases from the Quad Cities Station  
for the period January-December 2002**

Small figure - multiply by  $10^{-2}$   
Large figure - multiply by  $10^{-2}$



**Estimated Total Concentrations (in pCi/m3)  
of Iodines from the Quad Cities Station for  
the period January-December 2002**

Small figure - multiply by  $10^{-7}$   
Large figure - multiply by  $10^{-7}$



**Estimated Total Concentrations (in pCi/m3)  
of Particulates from the Quad Cities Station  
for the period January-December 2002**

Small figure - multiply by  $10^{-2}$   
Large figure - multiply by  $10^{-3}$





Table 3.1-1

GASEOUS ANNUAL DOSE SUMMARY REPORT  
(Composite Critical Receptor - Limited Analysis)

Release ID.....: 1 All Gas Releases  
 Year.....: 2002  
 Coefficient Type.....: Historical  
 Receptor.....: 5 Composite Crit. Receptor - IP  
 Distance (meters).....: 0.0  
 Compass Point.....: 0.0

=== MAXIMUM PERIOD DOSE TO LIMIT (Any Organ) ===

| Dose Period | Age Group | Organ   | Dose (mrem) | Limit Period | Admin Limit | Admin % of Limit | T.Spec Limit | T.Spec % of Limit |
|-------------|-----------|---------|-------------|--------------|-------------|------------------|--------------|-------------------|
| Quarter 1   | INFANT    | THYROID | 8.18E-02    | Quarter      | 5.63E+00    | 1.45E+00         | 7.50E+00     | 1.09E+00          |
| Quarter 2   | INFANT    | THYROID | 5.06E-02    | Quarter      | 5.63E+00    | 9.00E-01         | 7.50E+00     | 6.75E-01          |
| Quarter 3   | INFANT    | THYROID | 9.51E-02    | Quarter      | 5.63E+00    | 1.69E+00         | 7.50E+00     | 1.27E+00          |
| Quarter 4   | INFANT    | THYROID | 1.58E-01    | Quarter      | 5.63E+00    | 2.82E+00         | 7.50E+00     | 2.11E+00          |
| Annual      | INFANT    | THYROID | 3.86E-01    | Annual       | 1.13E+01    | 3.43E+00         | 1.50E+01     | 2.57E+00          |

=== MAXIMUM PERIOD DOSE TO LIMIT (Tot Body) ===

| Dose Period | Age Group | Organ | Dose (mrem) | Limit Period | Admin Limit | Admin % of Limit | T.Spec Limit | T.Spec % of Limit |
|-------------|-----------|-------|-------------|--------------|-------------|------------------|--------------|-------------------|
| Quarter 1   | CHILD     | TBODY | 6.63E-03    | Quarter      | 5.25E+00    | 1.26E-01         | 7.50E+00     | 8.84E-02          |
| Quarter 2   | CHILD     | TBODY | 2.06E-03    | Quarter      | 5.25E+00    | 3.92E-02         | 7.50E+00     | 2.75E-02          |
| Quarter 3   | CHILD     | TBODY | 4.38E-03    | Quarter      | 5.25E+00    | 8.33E-02         | 7.50E+00     | 5.83E-02          |
| Quarter 4   | CHILD     | TBODY | 6.64E-03    | Quarter      | 5.25E+00    | 1.26E-01         | 7.50E+00     | 8.85E-02          |
| Annual      | CHILD     | TBODY | 1.97E-02    | Annual       | 1.05E+01    | 1.88E-01         | 1.50E+01     | 1.31E-01          |

Receptor.....: 4 Composite Crit. Receptor - NG  
 Distance (meters).....: 0.0  
 Compass Point.....: 0.0

=== MAXIMUM PERIOD NG DOSE TO LIMIT (Gamma) ===

| Dose Period | Dose Type | Dose (mrad) | Limit Period | Admin Limit | Admin % of Limit | T.Spec Limit | T.Spec % of Limit |
|-------------|-----------|-------------|--------------|-------------|------------------|--------------|-------------------|
| Quarter 1   | Gamma     | 2.53E-04    | Quarter      | 3.75E+00    | 6.76E-03         | 5.00E+00     | 5.07E-03          |
| Quarter 2   | Gamma     | 2.89E-04    | Quarter      | 3.75E+00    | 7.70E-03         | 5.00E+00     | 5.78E-03          |
| Quarter 3   | Gamma     | 4.44E-04    | Quarter      | 3.75E+00    | 1.18E-02         | 5.00E+00     | 8.88E-03          |
| Quarter 4   | Gamma     | 2.47E-04    | Quarter      | 3.75E+00    | 6.58E-03         | 5.00E+00     | 4.94E-03          |
| Annual      | Gamma     | 1.23E-03    | Annual       | 7.50E+00    | 1.64E-02         | 1.00E+01     | 1.23E-02          |

=== MAXIMUM PERIOD NG DOSE TO LIMIT (Beta) ===

| Dose Period | Dose Type | Dose (mrad) | Limit Period | Admin Limit | Admin % of Limit | T.Spec Limit | T.Spec % of Limit |
|-------------|-----------|-------------|--------------|-------------|------------------|--------------|-------------------|
| Quarter 1   | Beta      | 1.51E-04    | Quarter      | 7.50E+00    | 2.01E-03         | 1.00E+01     | 1.51E-03          |
| Quarter 2   | Beta      | 1.90E-04    | Quarter      | 7.50E+00    | 2.54E-03         | 1.00E+01     | 1.90E-03          |
| Quarter 3   | Beta      | 2.34E-04    | Quarter      | 7.50E+00    | 3.11E-03         | 1.00E+01     | 2.34E-03          |
| Quarter 4   | Beta      | 1.45E-04    | Quarter      | 7.50E+00    | 1.93E-03         | 1.00E+01     | 1.45E-03          |
| Annual      | Beta      | 7.20E-04    | Annual       | 1.50E+01    | 4.80E-03         | 2.00E+01     | 3.60E-03          |

Table 3.2-1

LIQUID ANNUAL DOSE SUMMARY REPORT  
----- (PERIOD BASIS) -----

Release ID.....: 11 River Discharge Tank  
Year.....: 2002  
Liquid Receptor.....: 0 Liquid Receptor

=== MAXIMUM PERIOD DOSE TO LIMIT (Any Organ) ===

| Dose<br>Period | Age<br>Group | Organ | Dose<br>(mrem) | Limit<br>Period | Admin<br>Limit | Admin %<br>of Limit | T.Spec<br>Limit | T.Spec %<br>of Limit |
|----------------|--------------|-------|----------------|-----------------|----------------|---------------------|-----------------|----------------------|
| Quarter 1      | TEEN         | LIVER | 1.64E-03       | Quarter         | 3.75E+00       | 4.36E-02            | 5.00E+00        | 3.27E-02             |
| Quarter 2      | TEEN         | LIVER | 2.86E-04       | Quarter         | 3.75E+00       | 7.62E-03            | 5.00E+00        | 5.71E-03             |
| Quarter 3      | TEEN         | LIVER | 4.83E-04       | Quarter         | 3.75E+00       | 1.29E-02            | 5.00E+00        | 9.66E-03             |
| Quarter 4      | TEEN         | LIVER | 1.16E-03       | Quarter         | 3.75E+00       | 3.10E-02            | 5.00E+00        | 2.32E-02             |
| Annual         | TEEN         | LIVER | 3.18E-03       | Annual          | 7.50E+00       | 4.24E-02            | 1.00E+01        | 3.18E-02             |

=== MAXIMUM PERIOD DOSE TO LIMIT (Tot Body) ===

| Dose<br>Period | Age<br>Group | Organ | Dose<br>(mrem) | Limit<br>Period | Admin<br>Limit | Admin %<br>of Limit | T.Spec<br>Limit | T.Spec %<br>of Limit |
|----------------|--------------|-------|----------------|-----------------|----------------|---------------------|-----------------|----------------------|
| Quarter 1      | ADULT        | TBODY | 9.47E-04       | Quarter         | 1.13E+00       | 8.42E-02            | 1.50E+00        | 6.31E-02             |
| Quarter 2      | ADULT        | TBODY | 1.69E-04       | Quarter         | 1.13E+00       | 1.50E-02            | 1.50E+00        | 1.12E-02             |
| Quarter 3      | ADULT        | TBODY | 3.09E-04       | Quarter         | 1.13E+00       | 2.75E-02            | 1.50E+00        | 2.06E-02             |
| Quarter 4      | ADULT        | TBODY | 7.16E-04       | Quarter         | 1.13E+00       | 6.36E-02            | 1.50E+00        | 4.77E-02             |
| Annual         | ADULT        | TBODY | 1.93E-03       | Annual          | 2.25E+00       | 8.57E-02            | 3.00E+00        | 6.43E-02             |

Release ID.....: 2 Abnormal Liquid Continuous  
Year.....: 2002  
Liquid Receptor.....: 0 Liquid Receptor

=== MAXIMUM PERIOD DOSE TO LIMIT (Any Organ) ===

| Dose<br>Period | Age<br>Group | Organ | Dose<br>(mrem) | Limit<br>Period | Admin<br>Limit | Admin %<br>of Limit | T.Spec<br>Limit | T.Spec %<br>of Limit |
|----------------|--------------|-------|----------------|-----------------|----------------|---------------------|-----------------|----------------------|
| Quarter 1      | TEEN         | LIVER | 1.53E-03       | Quarter         | 3.75E+00       | 4.08E-02            | 5.00E+00        | 3.06E-02             |
| Quarter 2      | ADULT        | LIVER | 5.94E-05       | Quarter         | 3.75E+00       | 1.59E-03            | 5.00E+00        | 1.19E-03             |
| Quarter 3      | TEEN         | LIVER | 3.12E-05       | Quarter         | 3.75E+00       | 8.32E-04            | 5.00E+00        | 6.24E-04             |
| Quarter 4      | TEEN         | LIVER | 1.84E-04       | Quarter         | 3.75E+00       | 4.92E-03            | 5.00E+00        | 3.69E-03             |
| Annual         | TEEN         | LIVER | 9.88E-04       | Annual          | 7.50E+00       | 1.32E-02            | 1.00E+01        | 9.88E-03             |

=== MAXIMUM PERIOD DOSE TO LIMIT (Tot Body) ===

| Dose<br>Period | Age<br>Group | Organ | Dose<br>(mrem) | Limit<br>Period | Admin<br>Limit | Admin %<br>of Limit | T.Spec<br>Limit | T.Spec %<br>of Limit |
|----------------|--------------|-------|----------------|-----------------|----------------|---------------------|-----------------|----------------------|
| Quarter 1      | ADULT        | TBODY | 8.42E-04       | Quarter         | 1.13E+00       | 7.49E-02            | 1.50E+00        | 5.62E-02             |
| Quarter 2      | ADULT        | TBODY | 2.90E-05       | Quarter         | 1.13E+00       | 2.58E-03            | 1.50E+00        | 1.93E-03             |
| Quarter 3      | ADULT        | TBODY | 1.55E-05       | Quarter         | 1.13E+00       | 1.37E-03            | 1.50E+00        | 1.03E-03             |
| Quarter 4      | ADULT        | TBODY | 9.81E-05       | Quarter         | 1.13E+00       | 8.72E-03            | 1.50E+00        | 6.54E-03             |
| Annual         | ADULT        | TBODY | 5.34E-04       | Annual          | 2.25E+00       | 2.37E-02            | 3.00E+00        | 1.78E-02             |

Table 3.3-1

QUAD CITIES STATION UNIT ONE

10 CFR 20 COMPLIANCE ASSESSMENT

PERIOD OF ASSESSMENT 01/01/02 THROUGH 12/31/02

CALCULATED 03/25/03

1. 10 CFR 20.1301 (a) (1) Compliance

|                                  |            |       |
|----------------------------------|------------|-------|
| Total Effective Dose Equivalent, | mrem/yr    | 2.93  |
| 10 CFR 20.1301 (a) (1) limit     | mrem/yr    | 100.0 |
|                                  | % of limit | 2.93  |

Compliance Summary - 10CFR20

|      | 1 <sup>st</sup><br>Qtr | 2 <sup>nd</sup><br>Qtr | 3 <sup>rd</sup><br>Qtr | 4 <sup>th</sup><br>Qtr | % of<br>Limit |
|------|------------------------|------------------------|------------------------|------------------------|---------------|
| TEDE | 6.01E-01               | 8.54E-01               | 8.03E-01               | 6.70E-01               | 2.93E+00      |

Table 3.3-1 (continued)

QUAD CITIES STATION UNIT TWO

10 CFR 20 COMPLIANCE ASSESSMENT

PERIOD OF ASSESSMENT 01/01/02 THROUGH 12/31/02

CALCULATED 03/25/03

2. 10 CFR 20.1301 (a) (1) Compliance

|                                  |            |       |
|----------------------------------|------------|-------|
| Total Effective Dose Equivalent, | mrem/yr    | 3.35  |
| 10 CFR 20.1301 (a) (1) limit     | mrem/yr    | 100.0 |
|                                  | % of limit | 3.35  |

Compliance Summary - 10CFR20

|      | 1 <sup>st</sup><br>Qtr | 2 <sup>nd</sup><br>Qtr | 3 <sup>rd</sup><br>Qtr | 4 <sup>th</sup><br>Qtr | % of<br>Limit |
|------|------------------------|------------------------|------------------------|------------------------|---------------|
| TEDE | 6.29E-01               | 8.94.E-01              | 8.58E-01               | 9.66E-01               | 3.35E+00      |

# Table 3.4-1

Quad Cities Station - Unit 1

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

2002

| TYPE OF DOSE      | FIRST QUARTER  | SECOND QUARTER | THIRD QUARTER  | FOURTH QUARTER | ANNUAL         |
|-------------------|----------------|----------------|----------------|----------------|----------------|
| GAMMA AIR (mrad)  | 8.450E-04( E ) | 1.270E-03( N ) | 2.915E-03( W ) | 8.406E-04( E ) | 4.988E-03( W ) |
| BETA AIR (mrad)   | 2.140E-04( E ) | 2.485E-04( NE) | 5.200E-04(WSW) | 1.623E-04( E ) | 8.230E-04(NNE) |
| WHOLE BODY (mrem) | 8.735E-03(NNE) | 3.030E-03(NNE) | 6.160E-03(NNE) | 6.485E-03(NNE) | 2.441E-02(NNE) |
| SKIN (mrem)       | 1.035E-02(NNE) | 3.700E-03(NNE) | 7.475E-03(NNE) | 7.745E-03(NNE) | 2.926E-02(NNE) |
| ORGAN (mrem)      | 1.613E-04( E ) | 1.230E-04(WNW) | 4.025E-04(WNW) | 2.572E-04(WNW) | 8.846E-04(WNW) |
| CRITICAL PERSON   | Teenager       | Teenager       | Teenager       | Teenager       | Teenager       |
| CRITICAL ORGAN    | Lung           | Lung           | Lung           | Lung           | Lung           |

## COMPLIANCE STATUS

| TYPE OF DOSE      | 10 CFR 50 APP. I    |             | 10 CFR 50 APP. I |             |
|-------------------|---------------------|-------------|------------------|-------------|
|                   | QUARTERLY OBJECTIVE | % OF APP. I | YEARLY OBJECTIVE | % OF APP. I |
| GAMMA AIR (mrad)  | 5.0                 | 0.06        | 10.0             | 0.05        |
| BETA AIR (mrad)   | 10.0                | 0.01        | 20.0             | 0.00        |
| WHOLE BODY (mrem) | 2.5                 | 0.35        | 5.0              | 0.49        |
| SKIN (mrem)       | 7.5                 | 0.14        | 15.0             | 0.20        |
| ORGAN (mrem)      | 7.5                 | 0.01        | 15.0             | 0.01        |
| CRITICAL PERSON   |                     | Teenager    |                  | Teenager    |
| CRITICAL ORGAN    |                     | Lung        |                  | Lung        |

Calculation used release data from the following:

Unit 0 - Vent

Unit 0 - Chimney

Date of calculation: 4/30/2003

**Table 3.4-1 (continued)**

**Quad Cities Station - Unit 2**

**MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES**

2002

| TYPE OF DOSE      | FIRST QUARTER  | SECOND QUARTER | THIRD QUARTER  | FOURTH QUARTER | ANNUAL         |
|-------------------|----------------|----------------|----------------|----------------|----------------|
| GAMMA AIR (mrad)  | 8.450E-04( E ) | 1.270E-03( N ) | 2.915E-03( W ) | 8.406E-04( E ) | 4.988E-03( W ) |
| BETA AIR (mrad)   | 2.140E-04( E ) | 2.485E-04( NE) | 5.200E-04(WSW) | 1.623E-04( E ) | 8.230E-04(NNE) |
| WHOLE BODY (mrem) | 8.735E-03(NNE) | 3.030E-03(NNE) | 6.160E-03(NNE) | 6.485E-03(NNE) | 2.441E-02(NNE) |
| SKIN (mrem)       | 1.035E-02(NNE) | 3.700E-03(NNE) | 7.475E-03(NNE) | 7.745E-03(NNE) | 2.926E-02(NNE) |
| ORGAN (mrem)      | 1.613E-04( E ) | 1.230E-04(WNW) | 4.025E-04(WNW) | 2.572E-04(WNW) | 8.846E-04(WNW) |
| CRITICAL PERSON   | Teenager       | Teenager       | Teenager       | Teenager       | Teenager       |
| CRITICAL ORGAN    | Lung           | Lung           | Lung           | Lung           | Lung           |

**COMPLIANCE STATUS**

| TYPE OF DOSE      | 10 CFR 50 APP. I    |             | 10 CFR 50 APP. I |             |
|-------------------|---------------------|-------------|------------------|-------------|
|                   | QUARTERLY OBJECTIVE | % OF APP. I | YEARLY OBJECTIVE | % OF APP. I |
| GAMMA AIR (mrad)  | 5.0                 | 0.06        | 10.0             | 0.05        |
| BETA AIR (mrad)   | 10.0                | 0.01        | 20.0             | 0.00        |
| WHOLE BODY (mrem) | 2.5                 | 0.35        | 5.0              | 0.49        |
| SKIN (mrem)       | 7.5                 | 0.14        | 15.0             | 0.20        |
| ORGAN (mrem)      | 7.5                 | 0.01        | 15.0             | 0.01        |
| CRITICAL PERSON   |                     | Teenager    |                  | Teenager    |
| CRITICAL ORGAN    |                     | Lung        |                  | Lung        |

Calculation used release data from the following:

Unit 0 - Vent  
Unit 0 - Chimney

Maximum Offsite  
Values (pCi/m3)

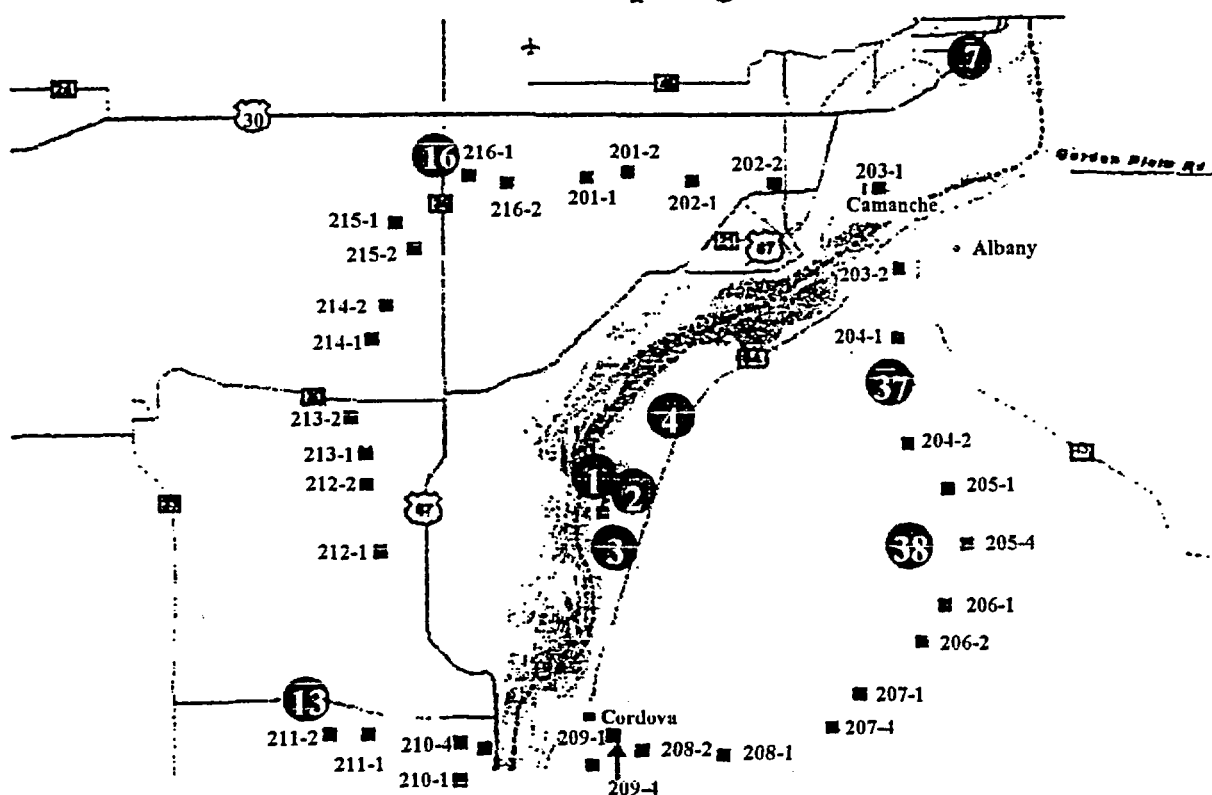
Iodine 8.22E-05  
Particulate Matter 3.02E+00  
Data Recovery 99.5%  
(priority parameters)

Date of calculation: 4/30/2003

## Quad Cities

**Figure 5.0-1**

# Quad Cities Outer Ring TLD's and Air Sampling Sites



 = Air Sampling Sites

■ = Outer Ring TLD Locations

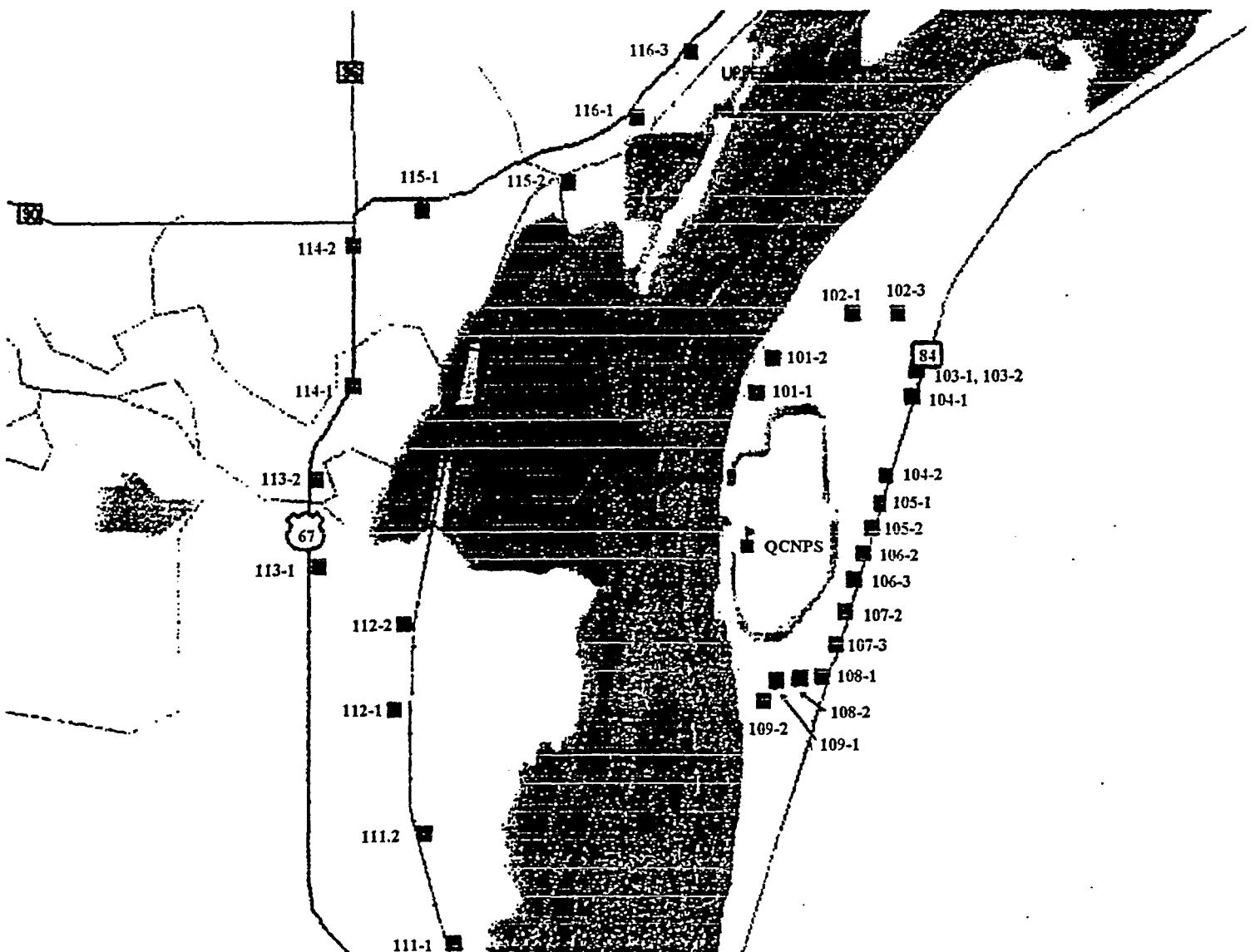
### Air Sampling Sites

Q-01 Onsite No. 1      Q-07 Clinton (C)  
Q-02 Onsite No. 2      Q-13 Princeton  
Q-03 Onsite No. 3      Q-16 Low Moor  
Q-04 Nitrin              Q-37 Meredosia Road  
                                 Q-38 Fuller Road

## Quad Cities

Figure 5.0-2

### Quad Cities Inner Ring TLD Locations

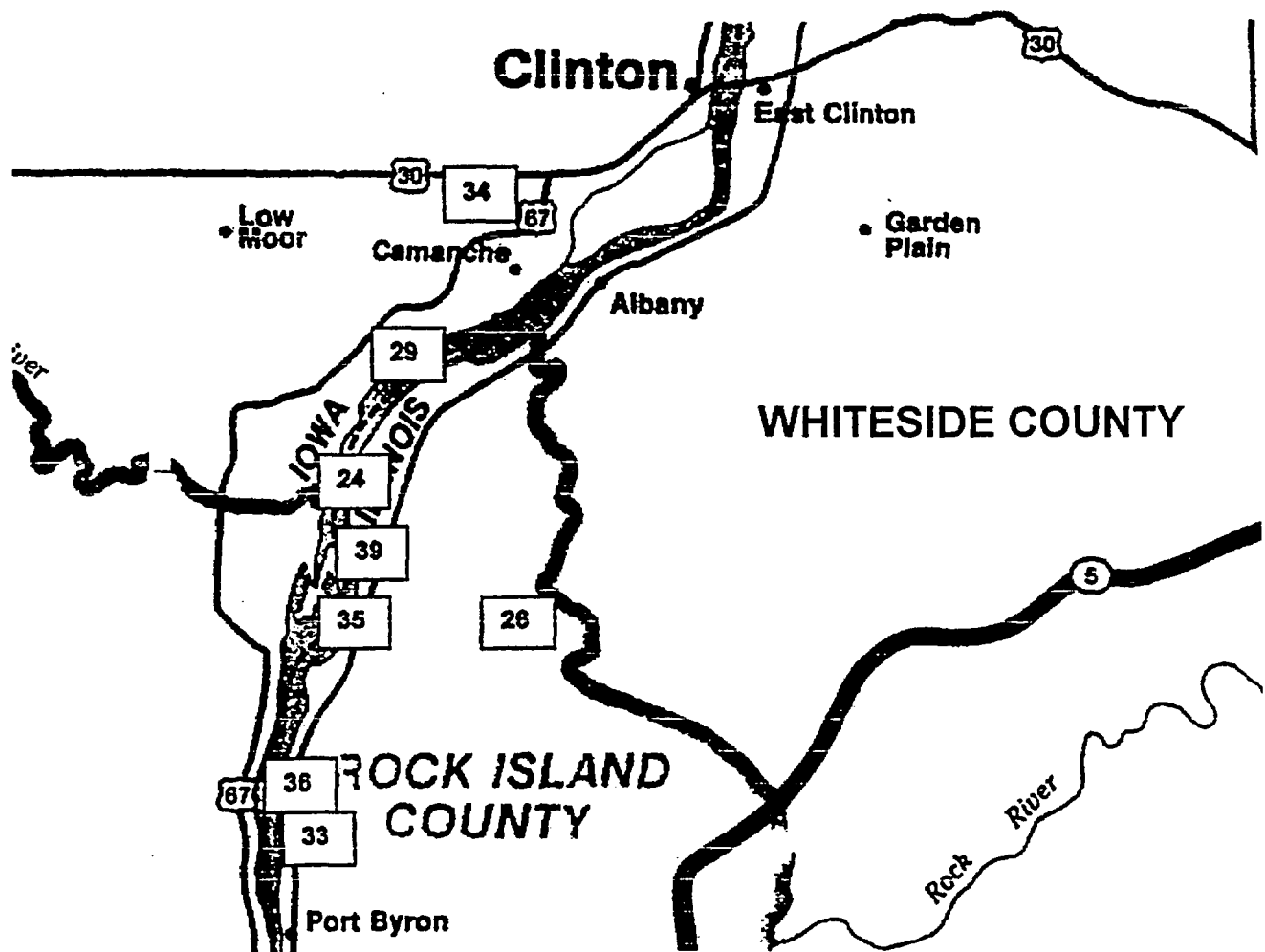




# Quad Cities

Figure 5.0-3

## Milk, Fish, Water and Sediment Sampling Locations



### Milk, Fish, Water and Sediment Sample Locations

|                                      |   |
|--------------------------------------|---|
| Q-24 Pool #14 of Mississippi River   | Q-34 Camanche (C)                             |
| Q-26 Bill Stanley Dairy              | Q-35 McMillan Well                            |
| Q-29 Mississippi River, Upstream (C) | Q-36 Cordova Well                             |
| Q-33 Cordova                         | Q-39 Cordova, Downstream on Mississippi River |

TABLE 5.0-1

Quad Cities Station  
Radiological Environmental  
Monitoring Locations

Q-01 Onsite No. 1  
Q-02 Onsite No. 2  
Q-03 Onsite No. 3  
Q-04 Nitrin  
Q-07 Clinton  
Q-13 Princeton  
Q-16 Low Moor  
Q-24 Pool #14 of Mississippi River  
Q-26 Bill Stanley Dairy  
Q-29 Mississippi River, Upstream  
Q-33 Cordova  
Q-34 Camanche  
Q-35 McMillan Well  
Q-36 Cordova Well  
Q-37 Meredosia Road  
Q-38 Fuller Road  
Q-39 Cordova, Downstream on Mississippi  
Q-Quad 1  
Q-Quad 2  
Q-Quad 3  
Q-Quad 4  
Q-Control

| Air Sampling | TLD | Fish | Milk | Sediments | Surface Water | Well Water | Vegetation |
|--------------|-----|------|------|-----------|---------------|------------|------------|
| ◀            | ◀   | .    | .    | .         | .             | .          | .          |
| ◀            | ◀   | .    | .    | .         | .             | .          | .          |
| ◀            | ◀   | .    | .    | .         | .             | .          | .          |
| ◀            | ◀   | .    | .    | .         | .             | .          | .          |
| ◀            | ◀   | .    | .    | .         | .             | .          | .          |
| ◀            | ◀   | .    | .    | .         | .             | .          | .          |
| ◀            | ◀   | .    | .    | .         | .             | .          | .          |
| .            | .   | ◀    | .    | .         | .             | .          | .          |
| .            | .   | .    | ◀    | .         | .             | .          | .          |
| .            | .   | ◀    | .    | .         | .             | .          | .          |
| .            | .   | .    | .    | .         | ◀             | .          | .          |
| .            | .   | .    | .    | .         | .             | ◀          | .          |
| .            | .   | .    | .    | .         | .             | ◀          | .          |
| ◀            | ◀   | .    | .    | .         | .             | .          | .          |
| ◀            | ◀   | .    | .    | .         | .             | .          | .          |
| .            | .   | .    | .    | ◀         | .             | .          | .          |
| .            | .   | .    | .    | .         | .             | .          | ◀          |
| .            | .   | .    | .    | .         | .             | .          | ◀          |
| .            | .   | .    | .    | .         | .             | .          | ◀          |
| .            | .   | .    | .    | .         | .             | .          | ◀          |

## CENSUS

Dairy  
Residence  
Livestock

TABLE 5.0-2

## QUAD CITIES STATION

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLING LOCATIONS

1. AIR SAMPLERS

| <u>Site Code</u> <sup>a</sup> | <u>Location</u> | <u>Distance</u><br>(miles) | <u>Direction</u> | <u>Sector</u> |
|-------------------------------|-----------------|----------------------------|------------------|---------------|
| Q-01                          | Onsite No. 1    | 0.5                        | N                | A             |
| Q-02                          | Onsite No. 2    | 0.5                        | ENE              | D             |
| Q-03                          | Onsite No. 3    | 0.6                        | S                | J             |
| Q-04                          | Nitric          | 1.5                        | NE               | C             |
| Q-07 (C)                      | Clinton         | 9.0                        | NE               | C             |
| Q-13                          | Princeton       | 4.8                        | SW               | L             |
| Q-16                          | Low Moor        | 6.0                        | NNW              | R             |
| Q-37                          | Meredosia Road  | 4.4                        | ENE              | D             |
| Q-38                          | Fuller Road     | 4.7                        | E                | E             |

2. TLDs

a. Same as No. 1.

b. Special TLD locations

| <u>Site Code</u> | <u>Distance</u><br>(miles) | <u>Direction</u> | <u>Sector</u> |
|------------------|----------------------------|------------------|---------------|
| Inner Ring       |                            |                  |               |
| Q-101-1          | 0.6                        | N                | A             |
| Q-101-2          | 0.9                        | N                | A             |
| Q-102-1          | 1.3                        | NNE              | B             |
| Q-102-3          | 1.4                        | NNE              | B             |
| Q-103-1,2        | 1.2                        | NE               | C             |
| Q-104-1          | 1.1                        | ENE              | D             |
| Q-104-2          | 0.9                        | ENE              | D             |
| Q-105-1,2        | 0.8                        | E                | E             |
| Q-106-2,3        | 0.7                        | ESE              | F             |
| Q-107-2          | 0.7                        | SE               | G             |
| Q-107-3          | 0.8                        | SE               | G             |
| Q-108-1          | 1.0                        | SSE              | H             |
| Q-108-2          | 0.9                        | SSE              | H             |
| Q-109-1          | 0.9                        | S                | J             |
| Q-109-2          | 1.2                        | S                | J             |
| Q-111-1          | 2.6                        | SW               | L             |
| Q-111-2          | 2.5                        | SW               | L             |
| Q-112-1          | 2.5                        | WSW              | M             |
| Q-112-2          | 2.2                        | WSW              | M             |
| Q-113-1,2        | 2.5                        | W                | N             |
| Q-114-1          | 2.1                        | WNW              | P             |
| Q-114-2          | 2.5                        | WNW              | P             |
| Q-115-1          | 2.6                        | NW               | Q             |
| Q-115-2          | 2.3                        | NW               | Q             |
| Q-116-1          | 2.3                        | NNW              | R             |
| Q-116-3          | 2.4                        | NNW              | R             |

<sup>a</sup> Control (background) locations are denoted by a "C" after site code. All other locations are indicators.

TABLE 5.0-2 (continued)

## QUAD CITIES STATION

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLING LOCATIONS

2. TLDs

## b. Special TLD locations (continued)

| <u>Site Code</u> | <u>Distance<br/>(miles)</u> | <u>Direction</u> | <u>Sector</u> |
|------------------|-----------------------------|------------------|---------------|
| Outer Ring       |                             |                  |               |
| Q-201-1,2        | 4.2                         | N                | A             |
| Q-202-1          | 4.4                         | NNE              | B             |
| Q-202-2          | 4.8                         | NNE              | B             |
| Q-203-1          | 4.7                         | NE               | C             |
| Q-203-2          | 5.0                         | NE               | C             |
| Q-204-1          | 4.7                         | ENE              | D             |
| Q-204-2          | 4.5                         | ENE              | D             |
| Q-205-1          | 4.7                         | E                | E             |
| Q-205-4          | 4.8                         | E                | E             |
| Q-206-1,2        | 4.8                         | ESE              | F             |
| Q-207-1,4        | 4.7                         | SE               | G             |
| Q-208-1          | 4.3                         | SSE              | H             |
| Q-208-2          | 4.9                         | SSE              | H             |
| Q-209-1,4        | 4.8                         | S                | J             |
| Q-210-1,4        | 4.4                         | SSW              | K             |
| Q-211-1,2        | 4.5                         | SW               | L             |
| Q-212-1          | 5.4                         | WSW              | M             |
| Q-212-2          | 4.4                         | WSW              | M             |
| Q-213-1          | 4.3                         | W                | N             |
| Q-213-2          | 4.8                         | W                | N             |
| Q-214-1          | 4.7                         | WNW              | P             |
| Q-214-2          | 4.4                         | WNW              | P             |
| Q-215-1          | 5.0                         | NW               | Q             |
| Q-215-2          | 4.2                         | NW               | Q             |
| Q-216-1          | 4.6                         | NNW              | R             |
| Q-216-2          | 4.3                         | NNW              | R             |

3. MILK

| <u>Site Code</u> <sup>a</sup> | <u>Location</u>    | <u>Distance<br/>(mile)</u> | <u>Direction</u> | <u>Sector</u> |
|-------------------------------|--------------------|----------------------------|------------------|---------------|
| Q-26                          | Bill Stanley Dairy | 3.5                        | ESE              | F             |

4. SURFACE WATER

| <u>Site Code</u> <sup>a</sup> | <u>Location</u> | <u>Distance<br/>(miles)</u> | <u>Direction</u> | <u>Sector</u> |
|-------------------------------|-----------------|-----------------------------|------------------|---------------|
| Q-33                          | Cordova         | 3.3                         | SSW              | K             |
| Q-34(C)                       | Camanche        | 4.4                         | NNE              | C             |

<sup>a</sup> Control (background) locations are denoted by a "C" after site code. All other locations are indicators.

Table 5.0-2 (continued)

## QUAD CITIES STATION

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLING LOCATIONS

5. WELL WATER

| <u>Site Code</u> <sup>a</sup> | <u>Location</u> | <u>Distance</u><br><u>(miles)</u> | <u>Direction</u> | <u>Sector</u> |
|-------------------------------|-----------------|-----------------------------------|------------------|---------------|
| Q-35                          | McMillan Well   | 1.5                               | S                | J             |
| Q-36                          | Cordova Well    | 3.3                               | SSW              | K             |

6. FISH

| <u>Site Code</u> <sup>a</sup> | <u>Location</u>               | <u>Distance</u><br><u>(miles)</u> | <u>Direction</u> | <u>Sector</u> |
|-------------------------------|-------------------------------|-----------------------------------|------------------|---------------|
| Q-24                          | Pool #14 of Mississippi River | 0.5                               | SW               | L             |
| Q-29 (C)                      | Mississippi River, Upstream   | 1.0                               | N                | A             |

7. SEDIMENTS

| <u>Site Code</u> <sup>a</sup> | <u>Location</u>                          | <u>Distance</u><br><u>(miles)</u> | <u>Direction</u> | <u>Sector</u> |
|-------------------------------|--|-----------------------------------|------------------|---------------|
| Q-39                          | Cordova, Downstream on Mississippi River | 0.8                               | SSW              | K             |

8. VEGETABLES

| <u>Site Code</u> <sup>a</sup> | <u>Location</u> | <u>Distance</u><br><u>(miles)</u> | <u>Direction</u> | <u>Sector</u> |
|-------------------------------|-----------------|-----------------------------------|------------------|---------------|
| Q-Quad 1                      | Robert Ziegler  | 6.0                               | NE               | C             |
| Q-Quad 2                      | Dale Nimmic     | 3.0                               | ESE              | F             |
| Q-Quad 3                      | Amy Johnston    | 1.8                               | S                | J             |
| Q-Quad 4                      | Mike Fauwcet    | 4.5                               | WNW              | P             |
| Q-Control(C)                  | Charles Leavens | 9.5                               | NE               | C             |

<sup>a</sup> Control (background) locations are denoted by a "C" after site code. All other locations are indicators.

TABLE 5.0-2 (continued)

QUAD CITIES STATION  
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLE COLLECTION AND ANALYSES

| Sample Media             | Location                      |                                       | Collection Frequency       | Type of Analysis     | Frequency of Analysis  |   |
|--------------------------|-------------------------------|---------------------------------------|----------------------------|----------------------|--|---|
|                          | Code <sup>a</sup>             | Site                                  |                            |                      |  |   |
| 1. Airborne Particulates | Onsite, Nearfield and Control |                                       | Filter exchange weekly     | Gross Beta           | Weekly<br>Quarterly Composite<br><br>(or if weekly gross beta in a sample exceeds 5X the average concentration of preceding calendar quarter). |   |
|                          | Q-01                          | Onsite No. 1                          |                            | Gamma Isot.          |  |   |
|                          | Q-02                          | Onsite No. 2                          |                            |                      |  |   |
|                          | Q-03                          | Onsite No.3                           |                            |                      |  |   |
|                          | Q-04                          | Nitrin                                |                            |                      |  |   |
|                          | Q-07 (C)                      | Clinton                               |                            |                      |  |   |
|                          | Far Field                     |                                       |                            |                      | Gamma Isot.  | If gross beta in a sample exceeds 10 times the yearly mean of control samples and radioactivity is confirmed as having its origin in airborne effluents from station. |
|                          | Q-13                          | Princeton                             |                            |                      |  |   |
|                          | Q-16                          | Low Moor                              |                            |                      |  |   |
|                          | Q-37                          | Meredosia Road                        |                            |                      |  |   |
| Q-38                     | Fuller Road                   |                                       |                            |                      |  |   |
| 2. Airborne Iodine       | Same as 1.                    |                                       | Canister exchange biweekly | I-131                | Biweekly   |   |
| 3. Air Sampling Train    | Same as 1.                    |                                       | -                          | Test and Maintenance | Weekly   |   |
| 4. TLDs                  | a.                            | Same as 1.<br>(two TLDs per location) | Quarterly                  | Gamma                | Quarterly  |   |
|                          | b.                            | Q-101-1,2 Inner Ring                  |                            |                      |  |   |
|                          |                               | 102-1,3                               |                            |                      |  |   |
|                          |                               | 103-1,2                               |                            |                      |  |   |
|                          |                               | 104-1,2                               |                            |                      |  |   |
|                          |                               | 105-1,2                               |                            |                      |  |   |
|                          |                               | 106-2,3                               |                            |                      |  |   |
|                          |                               | 107-2,3                               |                            |                      |  |   |
|                          |                               | 108-1,2                               |                            |                      |  |   |
|                          |                               | 109-1,2                               |                            |                      |  |   |
|                          |                               | 111-1,2                               |                            |                      |  |   |
|                          |                               | 112-1,2                               |                            |                      |  |   |
|                          |                               | 113-1,2                               |                            |                      |  |   |
|                          |                               | 114-1,2                               |                            |                      |  |   |
|                          |                               | 115-1,2                               |                            |                      |  |   |
|                          |                               | 116-1,3                               |                            |                      |  |   |
|                          | c.                            | Q-201-1,2 Outer Ring                  |                            |                      |  |   |
|                          |                               | 202-1,2                               |                            |                      |  |   |
|                          |                               | 203-1,2                               |                            |                      |  |   |
|                          |                               | 204-1,2                               |                            |                      |  |   |
|                          |                               | 205-1,4                               |                            |                      |  |   |
|                          |                               | 206-1,2                               |                            |                      |  |   |
|                          |                               | 207-1,4                               |                            |                      |  |   |
|                          |                               | 208-1,2                               |                            |                      |  |   |
|                          |                               | 209-1,4                               |                            |                      |  |   |
|                          |                               | 210-1,4                               |                            |                      |  |   |
|                          |                               | 211-1,2                               |                            |                      |  |   |

<sup>a</sup> Control (background) locations are denoted by a "C" in this column. All other location are indicators.

TABLE 5.0-2 (continued)

QUAD CITIES STATION  
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLE COLLECTION AND ANALYSES

| Sample Media                      | Location                        |  | Collection Frequency   | Type of Analysis  | Frequency of Analysis                                  |
|-----------------------------------|---------------------------------|--|--|---|--|
|                                   | Code <sup>a</sup>               | Site   |  |   |  |
| 4. TLDs (continued)               |                                 |  |  |   |  |
|                                   | Outer Ring                      |  | Quarterly  | Gamma   | Quarterly  |
|                                   | Q-212-1,2                       |  |  |   |  |
|                                   | 213-1,2                         |  |  |   |  |
|                                   | 214-1,2                         |  |  |   |  |
|                                   | 215-1,2                         |  |  |   |  |
|                                   | 216-1,2                         |  |  |   |  |
| 5. Milk                           | Q-26                            | Bill Stanley Dairy                             | Biweekly:<br>May-October<br>Monthly:<br>November-April                     | I-131<br>Gamma Isot.  | Biweekly:<br>May-October<br>Monthly:<br>November-April |
| 6. Vegetables                     | Quad 1                          | Robert Ziegler                                 | Annually - two varieties<br>from each location as<br>available at harvest. | Gamma Isot.   | Annually   |
|                                   | Quad 2                          | Dale Nimmic                                    |  | I-131   | Annually, on broad leaf<br>vegetation.                 |
|                                   | Quad 3                          | Amy Johnston                                   |  |   |  |
|                                   | Quad 4                          | William Dohrmann                               |  |   |  |
|                                   | Control                         | Charles Leavens                                |  |   |  |
| 7. Ground/Well<br>Water           | Q-35                            | McMillan Well                                  | Quarterly  | Gamma Isot.   | Quarterly  |
|                                   | Q-36                            | Cordova Well                                   |  | Tritium   |  |
| 8. Surface Water                  | Q-33                            | Cordova  | Weekly   | Gross Beta  | Monthly composite.                                     |
|                                   | Q-34 (C)                        | Comanche                                       |  | Gamma Isot.<br>Tritium  | Monthly composite.<br>Quarterly composite.             |
| 9. Fish (at least<br>two species) | Q-24                            | Pool #14 of<br>Mississippi River               | Two times/year   | Gamma Isot.   | Two times/year on<br>edible portions only.             |
|                                   | Q-29 (C)                        | Mississippi River<br>Upstream                  |  |   |  |
| 10. Sediments                     | Q-28                            | Cordova,<br>Downstream on<br>Mississippi River | Semiannually   | Gamma Isot.   | Semiannually   |
| 11. Land Use<br>Census            |                                 |  |  |   |  |
|                                   | Milch Animals                   |  |  |   |  |
|                                   | a. Site Boundary to 2 miles     |  | -  | a. Enumeration<br>by a door to door<br>or equivalent<br>counting technique.                         | Annually during grazing<br>season.                     |
|                                   | b. 2 miles to 6.2 miles         |  | -  | b. Using referenced<br>information from<br>county agricultural<br>agents or other reliable sources. |  |
|                                   | c. At dairies listed in Item 5. |  | -  | c. Inquire as to<br>feeding practices:  | Annually during grazing<br>season.                     |

<sup>a</sup> Control (background) locations are denoted by a "C" in this column. All other location are indicators.

TABLE 5.0-2 (continued)

QUAD CITIES STATION  
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLE COLLECTION AND ANALYSES

| Sample Media                          | Location          |                                 | Collection<br>Frequency | Type of<br>Analysis   | Frequency<br>of Analysis           |
|---------------------------------------|-------------------|---------------------------------|-------------------------|---|------------------------------------|
|                                       | Code <sup>a</sup> | Site                            |                         |   |                                    |
| 13. Land Use<br>Census<br>(continued) |                   |                                 |                         | 1. Pasture only.<br><br>2. Feed and chop only.<br><br>3. Pasture and feed:<br>if both, ask farmer<br>to estimate fraction<br>of food from pasture:<br><25%, 25-50%,<br>50-75%, or >75%. |                                    |
| Nearest<br>Residence                  |                   | In all sectors up to 6.2 miles. | -                       | -   | Annually during grazing<br>season. |

<sup>a</sup> Control (background) locations are denoted by a "C" in this column. All other location are indicators.



Table 5.0-3

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Quad Cities Nuclear Power Station Docket No. 50-254, 50-265  
 Location of Facility Rock Island, Illinois Reporting Period 1st Quarter 2002  
 (County, State)

| Sample Type (Units)                    | Type and Number of Analyses | LLD       | Indicator Locations Mean <sup>a</sup> Range | Location with Highest Quarterly Mean | Highest Mean <sup>a</sup> Range | Control Locations Mean <sup>a</sup> Range | Number of Non-routine Results |
|--|-----------------------------|-----------|---|--------------------------------------|---------------------------------|---|-------------------------------|
| Air Particulates (pCi/m <sup>3</sup> ) | Gross Beta 65               | 0.01      | 0.030 (52/52) (0.011-0.055)                 | Q-07, Clinton 8.9 mi. NE, Sector C   | 0.031 (13/13) (0.017-0.060)     | 0.031 (13/13) (0.017-0.060)               | 0                             |
|  | Gamma Spec. 5               |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 0.01      | <LLD  |                                      |                                 |   | 0                             |
|  | Cs-137                      | 0.01      | <LLD  |                                      |                                 |   | 0                             |
|  | Other Gammas                | 0.01-0.04 | <LLD  |                                      |                                 |   | 0                             |
| Airborne Iodine (pCi/m <sup>3</sup> )  | I-131 35                    | 0.07      | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
| Milk (pCi/L)                           | I-131 3                     | 5         | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Gamma Spec. 3               |           |   | -                                    | -                               | None                                      | 0                             |
|  | Cs-134                      | 15        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Cs-137                      | 18        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Ba/La-140                   | 15        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Other Gammas                | 10-15     | <LLD  | -                                    | -                               | None                                      | 0                             |
| Surface Water (pCi/L)                  | Gross Beta 2                | 4         | <LLD  | Q-34, Comanche 4.4 mi. NNE, Sector C | 5.8 (1/3)                       | 5.8 (1/3)                                 | 0                             |
|  | Gamma Spec. 2               |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 15        | <LLD  |                                      |                                 |   | 0                             |
|  | Cs-137                      | 18        | <LLD  |                                      |                                 |   | 0                             |
|  | Other ODCM-Required Gammas  | 15-30     | <LLD  |                                      |                                 |   | 0                             |
|  | Tritium 2                   | 200       | <LLD  |                                      |                                 |   | 0                             |
| Well Water (pCi/L)                     | Tritium 2                   | 200       | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Gamma Spec. 2               |           |   | -                                    | -                               | None                                      | 0                             |
|  | Cs-134                      | 15        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Cs-137                      | 18        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Other ODCM-Required Gammas  | 15-30     | <LLD  | -                                    | -                               | None                                      | 0                             |
| Gamma Background (TLDs) (mR/Qtr.)      | Gamma Dose 80               | 9.7       | 20.6 (77/78) (16-27)                        | Q-215-2 4.2 mi. NW, Sector Q         | 27 (1/1)                        | 19 (2/2) (17-21)                          | 0                             |

<sup>a</sup> Mean and range based on detectable measurements only. Fractions indicated in parentheses.

Table 5.0-4

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Quad Cities Nuclear Power Station Docket No. 50-254, 50-265  
 Location of Facility Rock Island, Illinois Reporting Period 2nd Quarter 2002  
 (County, State)

| Sample Type (Units)                    | Type and Number of Analyses | LLD                  | Indicator Locations Mean <sup>a</sup> Range | Location with Highest Quarterly Mean                | Highest Mean <sup>a</sup> Range | Control Locations Mean <sup>a</sup> Range | Number of Non-routine Results |
|--|-----------------------------|----------------------|---|---|---------------------------------|---|-------------------------------|
| Air Particulates (pCi/m <sup>3</sup> ) | Gross Beta 65               | 0.01                 | 0.020 (52/52) (0.012-0.034)                 | Q-01 <sup>b</sup> , Onsite No. 1 0.5 mi N, Sector A | 0.021 (13/13) (0.014-0.034)     | 0.021 (13/13) (0.015-0.028)               | 0                             |
|  | Gamma Spec. 5               |                      |   |   |                                 |   |                               |
|  | Cs-134                      | 0.01                 | <LLD  |   |                                 |   | 0                             |
|  | Cd-137                      | 0.01                 | <LLD  |   |                                 |   | 0                             |
|  | Other Gammas                | 0.01-0.04            | <LLD  |   |                                 |   | 0                             |
| Airborne Iodine (pCi/m <sup>3</sup> )  | I-131 30                    | 0.07                 | <LLD  | -   | -                               | None                                      | 0                             |
| Milk (pCi/L)                           | I-131 6                     | 5.0/0.5 <sup>c</sup> | <LLD  | -   | -                               | None                                      | 0                             |
|  | Gamma Spec. 6               |                      |   |   |                                 |   |                               |
|  | Cs-134                      | 15                   | <LLD  | -   | -                               | None                                      | 0                             |
|  | Cs-137                      | 18                   | <LLD  | -   | -                               | None                                      | 0                             |
|  | Ba/La-140                   | 15                   | <LLD  | -   | -                               | None                                      | 0                             |
|  | Other Gammas                | 10-15                | <LLD  | -   | -                               | None                                      | 0                             |
| Fish (pCi/g wet)                       | Gamma Spec. 4               |                      |   |   |                                 |   |                               |
|  | Cs-134                      | 0.10                 | <LLD  | -   | -                               | <LLD                                      | 0                             |
|  | Cs-137                      | 0.10                 | <LLD  | -   | -                               | <LLD                                      | 0                             |
|  | Other ODCM-Required Gammas  | 0.13-0.26            | <LLD  | -   | -                               | <LLD                                      | 0                             |
|  | Other Gammas                | 0.20-0.30            | <LLD  | -   | -                               | <LLD                                      | 0                             |
| Bottom Sediments (pCi/g dry)           | Gamma Spec. 1               |                      |   |   |                                 |   |                               |
|  | Cs-134                      | 0.15                 | <LLD  | -   | -                               | None                                      | 0                             |
|  | Cs-137                      | 0.18                 | <LLD  | -   | -                               | None                                      | 0                             |
|  | Other ODCM-Required Gammas  | 0.10-0.60            | <LLD  | -   | -                               | None                                      | 0                             |

<sup>a</sup> Mean and range based on detectable measurements only. Fractions indicated in parentheses.

<sup>b</sup> Locations Q-01 and Q-07 (C) had identical means of 0.021 pCi/m<sup>3</sup>. Both are detailed in this summary.

<sup>c</sup> November - April LLD=5.0 ; May - October LLD=0.5.

**Table 5.0-4 (continued)**

**RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY**

Name of Facility Quad Cities Nuclear Power Station Docket No. 50-254, 50-265  
 Location of Facility Rock Island, Illinois Reporting Period 2nd Quarter 2002  
 (County, State)

| Sample Type (Units)               | Type and Number of Analyses | LLD   | Indicator Locations Mean <sup>a</sup> Range | Location with Highest Quarterly Mean | Highest Mean <sup>a</sup> Range | Control Locations Mean <sup>a</sup> Range | Number of Non-routine Results |
|-----------------------------------|-----------------------------|-------|---|--------------------------------------|---------------------------------|---|-------------------------------|
| Surface Water (pCi/L)             | Gross Beta 6                | 4     | 4.9 (1/3)                                   | Q-34, Camanche 4.4 mi. NNE, Sector C | 5.8 (1/3)                       | 5.8 (1/3)                                 | 0                             |
|                                   | Gamma Spec. 6               |       |   |                                      |                                 |   |                               |
|                                   | Cs-134                      | 15    | <LLD  |                                      |                                 |   | 0                             |
|                                   | Cs-137                      | 18    | <LLD  |                                      |                                 |   | 0                             |
|                                   | Other ODCM-Required Gammas  | 15-30 | <LLD  |                                      |                                 |   | 0                             |
|                                   | Tritium 2                   | 200   | <LLD  |                                      |                                 |   | 0                             |
| Well Water (pCi/L)                | Tritium 2                   | 200   | <LLD  | -                                    | -                               | None                                      | 0                             |
|                                   | Gamma Spec. 2               |       |   |                                      |                                 |   |                               |
|                                   | Cs-134                      | 15    | <LLD  | -                                    | -                               | None                                      | 0                             |
|                                   | Cs-137                      | 18    | <LLD  | -                                    | -                               | None                                      | 0                             |
|                                   | Other ODCM-Required Gammas  | 15-30 | <LLD  | -                                    | -                               | None                                      | 0                             |
| Gamma Background (TLDs) (mR/Qtr.) | Gamma Dose 80               | 9.7   | 20.1 (78/78) (6.0-29.0)                     | Q-215-1, 5.0 mi. NW Sector Q         | 29.0 (1/1)                      | 19.5 (2/2) (19.0-20.0)                    | 0                             |

<sup>a</sup> Mean and range based on detectable measurements only. Fractions indicated in parentheses.

Table 5.0-5

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Quad Cities Nuclear Power Station Docket No. 50-254, 50-265Location of Facility Rock Island, Illinois Reporting Period 3rd Quarter 2002  
(County, State)

| Sample Type (Units)                    | Type and Number of Analyses | LLD       | Indicator Locations Mean <sup>a</sup> Range | Location with Highest Quarterly Mean | Highest Mean <sup>a</sup> Range | Control Locations Mean <sup>a</sup> Range | Number of Non-routine Results |
|--|-----------------------------|-----------|---|--------------------------------------|---------------------------------|---|-------------------------------|
| Air Particulates (pCi/m <sup>3</sup> ) | Gross Beta 63               | 0.01      | 0.026 (50/50) (0.014-0.037)                 | Q-07, Clinton 8.9 mi NE, Sector C    | 0.028 (13/13) (0.019-0.037)     | 0.028 (13/13) (0.019-0.037)               | 0                             |
|  | Gamma Spec. 5               |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 0.01      | <LLD  | -                                    | -                               | -   | 0                             |
|  | Cs-137                      | 0.01      | <LLD  | -                                    | -                               | -   | 0                             |
|  | Other Gammas                | 0.01-0.04 | <LLD  | -                                    | -                               | -   | 0                             |
| Airborne Iodine (pCi/m <sup>3</sup> )  | I-131 35                    | 0.10      | <LLD  | -                                    | -                               | None                                      | 0                             |
| Milk (pCi/L)                           | I-131 6                     | 0.5       | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Gamma Spec. 6               |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 15        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Cs-137                      | 18        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Ba/La-140                   | 15        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Other Gammas                | 10-15     | <LLD  | -                                    | -                               | None                                      | 0                             |
| Vegetation (pCi/gr. wet)               | I-131 10                    | 0.06      | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Gamma Spec. 10              |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 0.06      | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Cs-137                      | 0.08      | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Other Gammas                | 0.01-0.10 | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
| Surface Water (pCi/L)                  | Gross Beta 6                | 4         | 4.3 (2/3) (4.3-4.3)                         | Q-33 Cordova 3.3 mi. SSW, Sector K   | 4.3 (2/3) (4.3-4.3)             | <LLD                                      | 0                             |
|  | Gamma Spec. 6               |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 15        | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Cs-137                      | 18        | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Other ODCM-Required Gammas  | 15-30     | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Tritium 2                   | 200       | <LLD  | -                                    | -                               | <LLD                                      | 0                             |

<sup>a</sup> Mean and range based on detectable measurements only. Fractions indicated in parentheses.

**Table 5.0-5 (continued)**

**RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY**

Name of Facility Quad Cities Nuclear Power Station Docket No. 50-254, 50-265

Location of Facility Rock Island, Illinois Reporting Period 3rd Quarter 2002  
(County, State)

| Sample Type (Units)               | Type and Number of Analyses      | LLD   | Indicator Locations Mean Range | Location with Highest Quarterly Mean | Highest Mean Range | Control Locations Mean Range | Number of Non-routine Results |
|-----------------------------------|----------------------------------|-------|--------------------------------|--------------------------------------|--------------------|------------------------------|-------------------------------|
| Well Water (pCi/L)                | Tritium 2                        | 200   | <LLD                           | -                                    | -                  | None                         | 0                             |
|                                   | Gamma Spec. 2                    |       |                                |                                      |                    |                              |                               |
|                                   | Cs-134 15                        | 15    | <LLD                           | -                                    | -                  | None                         | 0                             |
|                                   | Cs-137 18                        | 18    | <LLD                           | -                                    | -                  | None                         | 0                             |
|                                   | Other ODCM-Required Gammas 15-30 | 15-30 | <LLD                           | -                                    | -                  | None                         | 0                             |
| Gamma Background (TLDs) (mR/Qtr.) | Gamma Dose 80                    | 9.7   | 17.7 (78/78)<br>(15.0-34.0)    | Q-216-2<br>4.3 mi. NNW<br>Sector R   | 34.0 (1/1)         | 16.0 (2/2)<br>(16.0-16.0)    | 0                             |

<sup>a</sup> Mean and range based on detectable measurements only. Fractions indicated in parentheses.

Table 5.0-6

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Quad Cities Nuclear Power Station Docket No. 50-254, 50-265  
 Location of Facility Rock Island, Illinois Reporting Period 4th Quarter 2002  
 (County, State)

| Sample Type (Units)                    | Type and Number of Analyses | LLD       | Indicator Locations Mean <sup>a</sup> Range | Location with Highest Quarterly Mean | Highest Mean <sup>a</sup> Range | Control Locations Mean <sup>a</sup> Range | Number of Non-routine Results |
|--|-----------------------------|-----------|---|--------------------------------------|---------------------------------|---|-------------------------------|
| Air Particulates (pCi/m <sup>3</sup> ) | Gross Beta 65               | 0.01      | 0.030 (52/52) (0.019-0.060)                 | Q-07, Clinton 8.9 mi NE, Sector C    | 0.033 (13/13) (0.019-0.063)     | 0.033 (13/13) (0.019-0.063)               | 0                             |
|  | Gamma Spec. 5               |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 0.01      | <LLD  |                                      |                                 |   | 0                             |
|  | Cs-137                      | 0.01      | <LLD  |                                      |                                 |   | 0                             |
|  | Other Gammas                | 0.01-0.04 | <LLD  |                                      |                                 |   | 0                             |
| Airborne Iodine (pCi/m <sup>3</sup> )  | I-131 30                    | 0.07      | <LLD  | -                                    | -                               | None                                      | 0                             |
| Milk (pCi/L)                           | I-131 4                     | 1.0       | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Gamma Spec. 4               |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 15        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Cs-137                      | 18        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | La-140                      | 15        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Ba-140                      | 60        | <LLD  | -                                    | -                               | None                                      | 0                             |
|  | Other Gammas                | 10-15     |   |                                      |                                 |   |                               |
| Fish (pCi/g wet)                       | Gamma Spec. 4               |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 0.13      | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Cs-137                      | 0.15      | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Other ODCM-Required Gammas  | 0.13-0.26 | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Other Gammas                | 0.20-0.30 | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
| Bottom Sediments (pCi/g dry)           | Gamma Spec. 1               |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 0.15      | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Cs-137                      | 0.18      | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
|  | Other Gammas                | 0.10-0.60 | <LLD  | -                                    | -                               | <LLD                                      | 0                             |
| Surface Water (pCi/L)                  | Gross Beta 6                | 4         | 4.4 (1/3)                                   | Q-34 Camanche 4.4 mi. NNE, Sector C  | 5.0 (1/3)                       | 5.0 (1/3)                                 | 0                             |
|  | Gamma Spec. 6               |           |   |                                      |                                 |   |                               |
|  | Cs-134                      | 15        | <LLD  |                                      |                                 |   | 0                             |
|  | Cs-137                      | 18        | <LLD  |                                      |                                 |   | 0                             |
|  | Other ODCM-Required Gammas  | 15-60     | <LLD  |                                      |                                 |   | 0                             |
|  | Tritium 2                   | 200       | <LLD  |                                      |                                 |   | 0                             |

<sup>a</sup> Mean and range based on detectable measurements only. Fractions indicated in parentheses.

**Table 5.0-6 (continued)**

**RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY**

Name of Facility Quad Cities Nuclear Power Station Docket No. 50-254, 50-265

Location of Facility Rock Island, Illinois Reporting Period 4th Quarter 2002  
(County, State)

| Sample Type (Units)               | Type and Number of Analyses      | LLD   | Indicator Locations Mean <sup>a</sup> Range | Location with Highest Quarterly Mean         | Highest Mean <sup>a</sup> Range | Control Locations Mean <sup>a</sup> Range | Number of Non-routine Results |
|-----------------------------------|----------------------------------|-------|---|--|---------------------------------|---|-------------------------------|
| Well Water (pCi/L)                | Tritium 2                        | 200   | <LLD  | -  | -                               | None                                      | 0                             |
|                                   | Gamma Spec.                      |       |   |  |                                 |   |                               |
|                                   | Cs-134 15                        | 15    | <LLD  | -  | -                               | None                                      | 0                             |
|                                   | Cs-137 18                        | 18    | <LLD  | -  | -                               | None                                      | 0                             |
|                                   | Other ODCM-Required Gammas 15-60 | 15-60 | <LLD  | -  | -                               | None                                      | 0                             |
| Gamma Background (TLDs) (mR/Qtr.) | Gamma Dose 80                    | 9.7   | 22.3 (78/78) (20.0-26.0)                    | Q-204-2 <sup>b</sup> , 4.9 mi. SSE, Sector H | 26 (1/1)                        | 22.0 (2/2) (22.0-22.0)                    | 0                             |

<sup>a</sup> Mean and range based on detectable measurements only. Fractions indicated in parentheses.

<sup>b</sup> Locations Q-204-2 and Q-211-1,2 had identical results of 26 mR. Only Q-204-2 is detailed in this summary.

QUAD CITIES

APPENDIX II

METEOROLOGICAL DATA



Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Extremely Unstable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 3   | 7    | 0     | 0     | 0    | 10    |
| NNE               | 1                   | 3   | 0    | 0     | 0     | 0    | 4     |
| NE                | 0                   | 5   | 4    | 2     | 0     | 0    | 11    |
| ENE               | 1                   | 8   | 6    | 1     | 0     | 0    | 16    |
| E                 | 0                   | 3   | 1    | 0     | 0     | 0    | 4     |
| ESE               | 0                   | 1   | 1    | 0     | 0     | 0    | 2     |
| SE                | 0                   | 5   | 1    | 0     | 0     | 0    | 6     |
| SSE               | 0                   | 2   | 9    | 0     | 0     | 0    | 11    |
| S                 | 0                   | 13  | 12   | 0     | 0     | 0    | 25    |
| SSW               | 1                   | 35  | 6    | 0     | 0     | 0    | 42    |
| SW                | 1                   | 22  | 7    | 0     | 0     | 0    | 30    |
| WSW               | 1                   | 27  | 7    | 0     | 0     | 0    | 35    |
| W                 | 2                   | 25  | 41   | 1     | 0     | 0    | 69    |
| WNW               | 1                   | 9   | 38   | 0     | 0     | 0    | 48    |
| NW                | 2                   | 8   | 6    | 6     | 0     | 0    | 22    |
| NNW               | 0                   | 6   | 1    | 0     | 0     | 0    | 7     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 10                  | 175 | 147  | 10    | 0     | 0    | 342   |

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

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Moderately Unstable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| NNE               | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| NE                | 0                   | 0   | 2    | 0     | 0     | 0    | 2     |
| ENE               | 0                   | 1   | 2    | 0     | 0     | 0    | 3     |
| E                 | 0                   | 2   | 1    | 0     | 0     | 0    | 3     |
| ESE               | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| SE                | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| SSE               | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| S                 | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| SSW               | 0                   | 2   | 1    | 0     | 0     | 0    | 3     |
| SW                | 2                   | 2   | 1    | 0     | 0     | 0    | 5     |
| WSW               | 0                   | 6   | 1    | 0     | 0     | 0    | 7     |
| W                 | 4                   | 3   | 7    | 1     | 0     | 0    | 15    |
| WNW               | 0                   | 0   | 4    | 0     | 0     | 0    | 4     |
| NW                | 1                   | 1   | 0    | 1     | 0     | 0    | 3     |
| NNW               | 1                   | 1   | 1    | 0     | 0     | 0    | 3     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 8                   | 20  | 22   | 2     | 0     | 0    | 52    |

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

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Slightly Unstable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 3   | 2    | 0     | 0     | 0    | 5     |
| NNE               | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| NE                | 0                   | 0   | 6    | 0     | 0     | 0    | 6     |
| ENE               | 2                   | 2   | 1    | 0     | 0     | 0    | 5     |
| E                 | 1                   | 4   | 2    | 0     | 0     | 0    | 7     |
| ESE               | 0                   | 0   | 2    | 1     | 0     | 0    | 3     |
| SE                | 0                   | 3   | 0    | 0     | 0     | 0    | 3     |
| SSE               | 1                   | 1   | 1    | 0     | 0     | 0    | 3     |
| S                 | 2                   | 1   | 1    | 0     | 0     | 0    | 4     |
| SSW               | 1                   | 3   | 3    | 0     | 0     | 0    | 7     |
| SW                | 1                   | 6   | 2    | 0     | 0     | 0    | 9     |
| WSW               | 1                   | 6   | 0    | 0     | 0     | 0    | 7     |
| W                 | 0                   | 4   | 5    | 2     | 0     | 0    | 11    |
| WNW               | 0                   | 1   | 8    | 0     | 0     | 0    | 9     |
| NW                | 1                   | 5   | 2    | 0     | 0     | 0    | 8     |
| NNW               | 1                   | 4   | 4    | 0     | 0     | 0    | 9     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 11                  | 44  | 39   | 3     | 0     | 0    | 97    |

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

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Neutral - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 5                   | 21  | 13   | 1     | 0     | 0    | 40    |
| NNE               | 3                   | 18  | 7    | 0     | 0     | 0    | 28    |
| NE                | 2                   | 50  | 25   | 7     | 0     | 0    | 84    |
| ENE               | 1                   | 11  | 17   | 2     | 0     | 0    | 31    |
| E                 | 0                   | 8   | 15   | 0     | 0     | 0    | 23    |
| ESE               | 2                   | 6   | 4    | 0     | 0     | 0    | 12    |
| SE                | 3                   | 15  | 1    | 0     | 0     | 0    | 19    |
| SSE               | 4                   | 11  | 4    | 0     | 0     | 0    | 19    |
| S                 | 2                   | 18  | 3    | 0     | 0     | 0    | 23    |
| SSW               | 2                   | 14  | 3    | 0     | 0     | 0    | 19    |
| SW                | 6                   | 38  | 13   | 0     | 0     | 0    | 57    |
| WSW               | 4                   | 48  | 10   | 0     | 0     | 0    | 62    |
| W                 | 9                   | 39  | 53   | 12    | 5     | 0    | 118   |
| WNW               | 14                  | 46  | 86   | 2     | 0     | 0    | 148   |
| NW                | 6                   | 45  | 32   | 5     | 0     | 0    | 88    |
| NNW               | 3                   | 31  | 20   | 0     | 0     | 0    | 54    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 66                  | 419 | 306  | 29    | 5     | 0    | 825   |

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

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Slightly Stable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 5   | 0    | 0     | 0     | 0    | 6     |
| NNE               | 6                   | 8   | 0    | 0     | 0     | 0    | 14    |
| NE                | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| ENE               | 2                   | 5   | 4    | 0     | 0     | 0    | 11    |
| E                 | 6                   | 12  | 0    | 0     | 0     | 0    | 18    |
| ESE               | 5                   | 8   | 0    | 0     | 0     | 0    | 13    |
| SE                | 16                  | 26  | 0    | 0     | 0     | 0    | 42    |
| SSE               | 19                  | 28  | 2    | 0     | 0     | 0    | 49    |
| S                 | 12                  | 21  | 8    | 0     | 0     | 0    | 41    |
| SSW               | 11                  | 50  | 9    | 0     | 0     | 0    | 70    |
| SW                | 10                  | 77  | 12   | 0     | 0     | 0    | 99    |
| WSW               | 21                  | 51  | 11   | 0     | 0     | 0    | 83    |
| W                 | 30                  | 36  | 7    | 0     | 0     | 0    | 73    |
| WNW               | 25                  | 19  | 0    | 0     | 0     | 0    | 44    |
| NW                | 11                  | 17  | 0    | 0     | 0     | 0    | 28    |
| NNW               | 4                   | 7   | 0    | 0     | 0     | 0    | 11    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 179                 | 370 | 54   | 0     | 0     | 0    | 603   |

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

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Moderately Stable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 4                   | 0   | 0    | 0     | 0     | 0    | 4     |
| NNE               | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| NE                | 3                   | 0   | 0    | 0     | 0     | 0    | 3     |
| ENE               | 6                   | 1   | 0    | 0     | 0     | 0    | 7     |
| E                 | 6                   | 4   | 0    | 0     | 0     | 0    | 10    |
| ESE               | 19                  | 13  | 0    | 0     | 0     | 0    | 32    |
| SE                | 14                  | 7   | 0    | 0     | 0     | 0    | 21    |
| SSE               | 14                  | 3   | 0    | 0     | 0     | 0    | 17    |
| S                 | 9                   | 4   | 0    | 0     | 0     | 0    | 13    |
| SSW               | 12                  | 8   | 0    | 0     | 0     | 0    | 20    |
| SW                | 6                   | 1   | 0    | 0     | 0     | 0    | 7     |
| WSW               | 3                   | 0   | 0    | 0     | 0     | 0    | 3     |
| W                 | 17                  | 0   | 0    | 0     | 0     | 0    | 17    |
| WNW               | 12                  | 0   | 0    | 0     | 0     | 0    | 12    |
| NW                | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| NNW               | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 130                 | 41  | 0    | 0     | 0     | 0    | 171   |

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

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Extremely Stable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>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               | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| NE                | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| ENE               | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| E                 | 4                   | 1   | 0    | 0     | 0     | 0    | 5     |
| ESE               | 4                   | 3   | 0    | 0     | 0     | 0    | 7     |
| SE                | 3                   | 1   | 0    | 0     | 0     | 0    | 4     |
| SSE               | 13                  | 0   | 0    | 0     | 0     | 0    | 13    |
| S                 | 6                   | 0   | 0    | 0     | 0     | 0    | 6     |
| SSW               | 6                   | 0   | 0    | 0     | 0     | 0    | 6     |
| SW                | 4                   | 0   | 0    | 0     | 0     | 0    | 4     |
| WSW               | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| W                 | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| WNW               | 3                   | 0   | 0    | 0     | 0     | 0    | 3     |
| NW                | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| NNW               | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 53                  | 5   | 0    | 0     | 0     | 0    | 58    |

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

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Extremely Unstable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>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   | 3    | 0     | 0     | 0    | 3     |
| NE                | 0                   | 0   | 1    | 0     | 1     | 0    | 2     |
| ENE               | 0                   | 0   | 3    | 0     | 4     | 0    | 7     |
| E                 | 0                   | 0   | 2    | 1     | 1     | 0    | 4     |
| ESE               | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| SE                | 0                   | 0   | 0    | 3     | 0     | 0    | 3     |
| SSE               | 0                   | 0   | 0    | 1     | 1     | 1    | 3     |
| S                 | 0                   | 1   | 0    | 5     | 12    | 0    | 18    |
| SSW               | 0                   | 1   | 12   | 10    | 5     | 0    | 28    |
| SW                | 0                   | 1   | 6    | 1     | 0     | 0    | 8     |
| WSW               | 0                   | 0   | 11   | 6     | 1     | 0    | 18    |
| W                 | 0                   | 0   | 9    | 11    | 11    | 1    | 32    |
| WNW               | 0                   | 1   | 2    | 10    | 5     | 0    | 18    |
| NW                | 0                   | 0   | 2    | 2     | 2     | 4    | 10    |
| NNW               | 0                   | 1   | 0    | 1     | 0     | 1    | 3     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 0                   | 5   | 54   | 51    | 43    | 7    | 160   |

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: 10



Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Moderately Unstable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 1   | 3    | 1     | 0     | 0    | 5     |
| NNE               | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| NE                | 0                   | 0   | 2    | 1     | 0     | 0    | 3     |
| ENE               | 0                   | 0   | 2    | 3     | 0     | 0    | 5     |
| E                 | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| ESE               | 0                   | 0   | 0    | 1     | 0     | 0    | 1     |
| SE                | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| SSE               | 0                   | 0   | 0    | 0     | 2     | 1    | 3     |
| S                 | 0                   | 1   | 1    | 2     | 3     | 0    | 7     |
| SSW               | 0                   | 2   | 1    | 3     | 4     | 0    | 10    |
| SW                | 0                   | 6   | 3    | 2     | 1     | 0    | 12    |
| WSW               | 0                   | 2   | 6    | 8     | 0     | 0    | 16    |
| W                 | 0                   | 5   | 6    | 9     | 4     | 1    | 25    |
| WNW               | 0                   | 3   | 1    | 7     | 13    | 1    | 25    |
| NW                | 0                   | 3   | 0    | 1     | 3     | 2    | 9     |
| NNW               | 0                   | 2   | 2    | 1     | 0     | 0    | 5     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 0                   | 25  | 29   | 39    | 30    | 5    | 128   |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 2  
 Hours of missing stability measurements in all stability classes: 10

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Slightly Unstable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 1   | 2    | 3     | 1     | 0    | 7     |
| NNE               | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| NE                | 2                   | 1   | 2    | 1     | 0     | 0    | 6     |
| ENE               | 0                   | 0   | 1    | 4     | 1     | 0    | 6     |
| E                 | 0                   | 3   | 6    | 3     | 0     | 0    | 12    |
| ESE               | 0                   | 1   | 0    | 1     | 1     | 0    | 3     |
| SE                | 0                   | 1   | 1    | 0     | 1     | 0    | 3     |
| SSE               | 0                   | 0   | 2    | 0     | 0     | 0    | 2     |
| S                 | 0                   | 1   | 0    | 2     | 1     | 1    | 5     |
| SSW               | 0                   | 3   | 0    | 3     | 2     | 0    | 8     |
| SW                | 0                   | 3   | 2    | 6     | 1     | 1    | 13    |
| WSW               | 1                   | 3   | 5    | 5     | 1     | 0    | 15    |
| W                 | 2                   | 3   | 2    | 7     | 4     | 0    | 18    |
| WNW               | 0                   | 1   | 1    | 4     | 5     | 2    | 13    |
| NW                | 0                   | 3   | 0    | 0     | 4     | 2    | 9     |
| NNW               | 0                   | 4   | 5    | 0     | 3     | 0    | 12    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 5                   | 28  | 30   | 39    | 25    | 6    | 133   |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 1  
 Hours of missing stability measurements in all stability classes: 10

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Neutral - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 5   | 14   | 19    | 10    | 0    | 49    |
| NNE               | 1                   | 7   | 13   | 8     | 0     | 0    | 29    |
| NE                | 1                   | 1   | 18   | 45    | 16    | 6    | 87    |
| ENE               | 0                   | 3   | 7    | 12    | 7     | 3    | 32    |
| E                 | 0                   | 1   | 6    | 24    | 5     | 0    | 36    |
| ESE               | 0                   | 1   | 1    | 9     | 2     | 1    | 14    |
| SE                | 0                   | 2   | 8    | 9     | 1     | 0    | 20    |
| SSE               | 0                   | 1   | 3    | 10    | 11    | 1    | 26    |
| S                 | 1                   | 3   | 2    | 20    | 10    | 3    | 39    |
| SSW               | 1                   | 0   | 7    | 12    | 8     | 1    | 29    |
| SW                | 0                   | 2   | 8    | 31    | 17    | 3    | 61    |
| WSW               | 0                   | 4   | 16   | 14    | 7     | 2    | 43    |
| W                 | 1                   | 7   | 8    | 41    | 40    | 22   | 119   |
| WNW               | 3                   | 4   | 14   | 50    | 57    | 13   | 141   |
| NW                | 1                   | 13  | 13   | 39    | 26    | 6    | 98    |
| NNW               | 2                   | 4   | 13   | 44    | 5     | 1    | 69    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 12                  | 58  | 151  | 387   | 222   | 62   | 892   |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 16  
 Hours of missing stability measurements in all stability classes: 10

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Slightly Stable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 0   | 12   | 3     | 0     | 0    | 15    |
| NNE               | 0                   | 0   | 3    | 5     | 0     | 0    | 8     |
| NE                | 0                   | 0   | 5    | 2     | 2     | 0    | 9     |
| ENE               | 0                   | 0   | 1    | 1     | 2     | 0    | 4     |
| E                 | 0                   | 1   | 1    | 6     | 0     | 0    | 8     |
| ESE               | 1                   | 2   | 5    | 8     | 2     | 0    | 18    |
| SE                | 1                   | 3   | 6    | 7     | 0     | 0    | 17    |
| SSE               | 1                   | 1   | 7    | 31    | 10    | 4    | 54    |
| S                 | 1                   | 2   | 12   | 23    | 16    | 7    | 61    |
| SSW               | 0                   | 0   | 9    | 47    | 52    | 5    | 113   |
| SW                | 1                   | 0   | 11   | 45    | 21    | 1    | 79    |
| WSW               | 2                   | 2   | 9    | 43    | 12    | 0    | 68    |
| W                 | 0                   | 1   | 14   | 26    | 9     | 1    | 51    |
| WNW               | 0                   | 2   | 11   | 28    | 2     | 0    | 43    |
| NW                | 0                   | 4   | 23   | 18    | 2     | 0    | 47    |
| NNW               | 0                   | 2   | 12   | 9     | 1     | 0    | 24    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 7                   | 20  | 141  | 302   | 131   | 18   | 619   |

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: 10

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Moderately Stable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 2   | 4    | 0     | 0     | 0    | 6     |
| NNE               | 0                   | 1   | 1    | 0     | 0     | 0    | 2     |
| NE                | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| ENE               | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| E                 | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| ESE               | 0                   | 1   | 8    | 5     | 1     | 0    | 15    |
| SE                | 0                   | 2   | 4    | 13    | 6     | 0    | 25    |
| SSE               | 1                   | 1   | 4    | 5     | 0     | 0    | 11    |
| S                 | 0                   | 3   | 7    | 15    | 2     | 1    | 28    |
| SSW               | 0                   | 1   | 2    | 9     | 6     | 1    | 19    |
| SW                | 0                   | 1   | 3    | 5     | 0     | 0    | 9     |
| WSW               | 1                   | 3   | 4    | 4     | 0     | 0    | 12    |
| W                 | 1                   | 2   | 4    | 5     | 1     | 0    | 13    |
| WNW               | 0                   | 1   | 2    | 3     | 0     | 0    | 6     |
| NW                | 1                   | 2   | 4    | 0     | 0     | 0    | 7     |
| NNW               | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 4                   | 22  | 48   | 64    | 16    | 2    | 156   |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 13  
 Hours of missing stability measurements in all stability classes: 10

Quad Cities Nuclear Station

Period of Record: January - March 2002  
 Stability Class - Extremely Stable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>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               | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| 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                   | 2   | 1    | 0     | 0     | 0    | 3     |
| S                 | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| SSW               | 0                   | 1   | 2    | 3     | 1     | 0    | 7     |
| SW                | 0                   | 1   | 2    | 1     | 0     | 0    | 4     |
| WSW               | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| W                 | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| WNW               | 0                   | 0   | 0    | 1     | 0     | 0    | 1     |
| NW                | 0                   | 1   | 1    | 0     | 0     | 0    | 2     |
| NNW               | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 2                   | 6   | 8    | 5     | 1     | 0    | 22    |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 2  
 Hours of missing stability measurements in all stability classes: 10

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Extremely Unstable - 196Ft-33Ft Delta-T (F)  
Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 1   | 1    | 0     | 0     | 0    | 2     |
| NNE               | 0                   | 2   | 8    | 0     | 0     | 0    | 10    |
| NE                | 0                   | 7   | 7    | 0     | 0     | 0    | 14    |
| ENE               | 0                   | 11  | 5    | 0     | 0     | 0    | 16    |
| E                 | 0                   | 10  | 3    | 0     | 0     | 0    | 13    |
| ESE               | 0                   | 14  | 1    | 0     | 0     | 0    | 15    |
| SE                | 0                   | 15  | 15   | 0     | 0     | 0    | 30    |
| SSE               | 1                   | 20  | 22   | 0     | 0     | 0    | 43    |
| S                 | 0                   | 22  | 7    | 0     | 0     | 0    | 29    |
| SSW               | 1                   | 38  | 31   | 0     | 0     | 0    | 70    |
| SW                | 3                   | 55  | 6    | 0     | 0     | 0    | 64    |
| WSW               | 0                   | 13  | 2    | 0     | 0     | 0    | 15    |
| W                 | 1                   | 20  | 11   | 6     | 0     | 0    | 38    |
| WNW               | 4                   | 17  | 10   | 2     | 0     | 0    | 33    |
| NW                | 0                   | 35  | 16   | 0     | 0     | 0    | 51    |
| NNW               | 1                   | 21  | 4    | 0     | 0     | 0    | 26    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 11                  | 301 | 149  | 8     | 0     | 0    | 469   |

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

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Moderately Unstable - 196Ft-33Ft Delta-T (F)

Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 2   | 1    | 0     | 0     | 0    | 3     |
| NNE               | 0                   | 1   | 1    | 0     | 0     | 0    | 2     |
| NE                | 0                   | 3   | 1    | 0     | 0     | 0    | 4     |
| ENE               | 0                   | 4   | 2    | 0     | 0     | 0    | 6     |
| E                 | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| ESE               | 0                   | 2   | 1    | 0     | 0     | 0    | 3     |
| SE                | 1                   | 3   | 0    | 0     | 0     | 0    | 4     |
| SSE               | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| S                 | 0                   | 1   | 1    | 0     | 0     | 0    | 2     |
| SSW               | 0                   | 4   | 3    | 0     | 0     | 0    | 7     |
| SW                | 0                   | 6   | 2    | 0     | 0     | 0    | 8     |
| WSW               | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| W                 | 2                   | 3   | 1    | 0     | 0     | 0    | 6     |
| WNW               | 0                   | 3   | 3    | 0     | 0     | 0    | 6     |
| NW                | 1                   | 3   | 1    | 0     | 0     | 0    | 5     |
| NNW               | 0                   | 5   | 1    | 0     | 0     | 0    | 6     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 4                   | 46  | 18   | 0     | 0     | 0    | 68    |

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



Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Slightly Unstable - 196Ft-33Ft Delta-T (F)  
Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 2   | 1    | 0     | 0     | 0    | 4     |
| NNE               | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| NE                | 0                   | 3   | 3    | 0     | 0     | 0    | 6     |
| ENE               | 0                   | 7   | 0    | 0     | 0     | 0    | 7     |
| E                 | 0                   | 5   | 1    | 0     | 0     | 0    | 6     |
| ESE               | 0                   | 3   | 0    | 0     | 0     | 0    | 3     |
| SE                | 1                   | 1   | 0    | 0     | 0     | 0    | 2     |
| SSE               | 0                   | 5   | 1    | 0     | 0     | 0    | 6     |
| S                 | 2                   | 3   | 1    | 0     | 0     | 0    | 6     |
| SSW               | 2                   | 1   | 1    | 0     | 0     | 0    | 4     |
| SW                | 1                   | 15  | 2    | 0     | 0     | 0    | 18    |
| WSW               | 1                   | 3   | 1    | 0     | 0     | 0    | 5     |
| W                 | 1                   | 3   | 1    | 1     | 0     | 0    | 6     |
| WNW               | 0                   | 3   | 4    | 0     | 0     | 0    | 7     |
| NW                | 2                   | 15  | 3    | 0     | 0     | 0    | 20    |
| NNW               | 0                   | 10  | 1    | 0     | 0     | 0    | 11    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 11                  | 80  | 20   | 1     | 0     | 0    | 112   |

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

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Neutral - 196Ft-33Ft Delta-T (F)

Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 18  | 17   | 0     | 0     | 0    | 36    |
| NNE               | 6                   | 4   | 4    | 0     | 0     | 0    | 14    |
| NE                | 3                   | 18  | 12   | 2     | 0     | 0    | 35    |
| ENE               | 2                   | 23  | 15   | 3     | 0     | 0    | 43    |
| E                 | 3                   | 20  | 32   | 0     | 0     | 0    | 55    |
| ESE               | 6                   | 18  | 25   | 1     | 0     | 0    | 50    |
| SE                | 2                   | 7   | 6    | 0     | 0     | 0    | 15    |
| SSE               | 4                   | 17  | 1    | 0     | 0     | 0    | 22    |
| S                 | 5                   | 14  | 0    | 0     | 0     | 0    | 19    |
| SSW               | 3                   | 13  | 5    | 0     | 0     | 0    | 21    |
| SW                | 8                   | 29  | 6    | 3     | 0     | 0    | 46    |
| WSW               | 3                   | 9   | 3    | 3     | 0     | 0    | 18    |
| W                 | 6                   | 28  | 8    | 0     | 0     | 0    | 42    |
| WNW               | 5                   | 25  | 41   | 0     | 0     | 0    | 71    |
| NW                | 4                   | 28  | 12   | 2     | 0     | 0    | 46    |
| NNW               | 0                   | 36  | 5    | 0     | 0     | 0    | 41    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 61                  | 307 | 192  | 14    | 0     | 0    | 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: 0

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Slightly Stable - 196Ft-33Ft Delta-T (F)  
Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 3                   | 2   | 0    | 0     | 0     | 0    | 5     |
| NNE               | 1                   | 2   | 2    | 0     | 0     | 0    | 5     |
| NE                | 4                   | 3   | 3    | 0     | 0     | 0    | 10    |
| ENE               | 13                  | 17  | 0    | 0     | 0     | 0    | 30    |
| E                 | 13                  | 15  | 5    | 0     | 0     | 0    | 33    |
| ESE               | 12                  | 21  | 3    | 0     | 0     | 0    | 36    |
| SE                | 10                  | 21  | 4    | 0     | 0     | 0    | 35    |
| SSE               | 12                  | 36  | 3    | 0     | 0     | 0    | 51    |
| S                 | 12                  | 26  | 0    | 0     | 0     | 0    | 38    |
| SSW               | 19                  | 27  | 12   | 0     | 0     | 0    | 58    |
| SW                | 17                  | 60  | 13   | 0     | 0     | 0    | 90    |
| WSW               | 17                  | 24  | 2    | 0     | 0     | 0    | 43    |
| W                 | 14                  | 30  | 0    | 0     | 0     | 0    | 44    |
| WNW               | 14                  | 14  | 2    | 0     | 0     | 0    | 30    |
| NW                | 7                   | 24  | 1    | 0     | 0     | 0    | 32    |
| NNW               | 8                   | 9   | 1    | 0     | 0     | 0    | 18    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 176                 | 331 | 51   | 0     | 0     | 0    | 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: 0

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Moderately Stable - 196Ft-33Ft Delta-T (F)  
Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 5                   | 1   | 0    | 0     | 0     | 0    | 6     |
| NNE               | 5                   | 1   | 0    | 0     | 0     | 0    | 6     |
| NE                | 9                   | 1   | 0    | 0     | 0     | 0    | 10    |
| ENE               | 9                   | 0   | 0    | 0     | 0     | 0    | 9     |
| E                 | 15                  | 1   | 0    | 0     | 0     | 0    | 16    |
| ESE               | 26                  | 4   | 0    | 0     | 0     | 0    | 30    |
| SE                | 33                  | 6   | 0    | 0     | 0     | 0    | 39    |
| SSE               | 19                  | 4   | 0    | 0     | 0     | 0    | 23    |
| S                 | 18                  | 4   | 0    | 0     | 0     | 0    | 22    |
| SSW               | 15                  | 2   | 0    | 0     | 0     | 0    | 17    |
| SW                | 11                  | 3   | 0    | 0     | 0     | 0    | 14    |
| WSW               | 4                   | 1   | 0    | 0     | 0     | 0    | 5     |
| W                 | 12                  | 0   | 0    | 0     | 0     | 0    | 12    |
| WNW               | 11                  | 0   | 0    | 0     | 0     | 0    | 11    |
| NW                | 9                   | 5   | 0    | 0     | 0     | 0    | 14    |
| NNW               | 10                  | 1   | 0    | 0     | 0     | 0    | 11    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 211                 | 34  | 0    | 0     | 0     | 0    | 245   |

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

Quad Cities Nuclear Station

Period of Record: April - June 2002  
 Stability Class - Extremely Stable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>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               | 5                   | 0   | 0    | 0     | 0     | 0    | 5     |
| NE                | 3                   | 0   | 0    | 0     | 0     | 0    | 3     |
| ENE               | 9                   | 0   | 0    | 0     | 0     | 0    | 9     |
| E                 | 14                  | 0   | 0    | 0     | 0     | 0    | 14    |
| ESE               | 27                  | 3   | 0    | 0     | 0     | 0    | 30    |
| SE                | 18                  | 0   | 0    | 0     | 0     | 0    | 18    |
| SSE               | 12                  | 0   | 0    | 0     | 0     | 0    | 12    |
| S                 | 18                  | 0   | 0    | 0     | 0     | 0    | 18    |
| SSW               | 4                   | 0   | 0    | 0     | 0     | 0    | 4     |
| SW                | 7                   | 0   | 0    | 0     | 0     | 0    | 7     |
| WSW               | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| W                 | 3                   | 0   | 0    | 0     | 0     | 0    | 3     |
| WNW               | 7                   | 0   | 0    | 0     | 0     | 0    | 7     |
| NW                | 5                   | 0   | 0    | 0     | 0     | 0    | 5     |
| NNW               | 0                   | 0   | 0    | 0     | 0     | 1    | 1     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 133                 | 3   | 0    | 0     | 0     | 1    | 137   |

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

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Extremely Unstable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 1   | 1    | 0     | 0     | 0    | 2     |
| NNE               | 0                   | 0   | 0    | 5     | 0     | 0    | 5     |
| NE                | 0                   | 0   | 3    | 2     | 1     | 0    | 6     |
| ENE               | 0                   | 0   | 3    | 0     | 0     | 0    | 3     |
| E                 | 0                   | 1   | 4    | 1     | 0     | 0    | 6     |
| ESE               | 0                   | 2   | 5    | 1     | 0     | 0    | 8     |
| SE                | 0                   | 4   | 10   | 6     | 5     | 0    | 25    |
| SSE               | 0                   | 2   | 7    | 7     | 8     | 4    | 28    |
| S                 | 0                   | 2   | 10   | 14    | 15    | 2    | 43    |
| SSW               | 0                   | 5   | 26   | 22    | 16    | 8    | 77    |
| SW                | 0                   | 9   | 16   | 5     | 0     | 0    | 30    |
| WSW               | 0                   | 0   | 5    | 1     | 1     | 0    | 7     |
| W                 | 1                   | 10  | 2    | 2     | 1     | 3    | 19    |
| WNW               | 0                   | 4   | 15   | 9     | 4     | 7    | 39    |
| NW                | 0                   | 3   | 15   | 11    | 5     | 0    | 34    |
| NNW               | 0                   | 1   | 7    | 1     | 1     | 0    | 10    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 1                   | 44  | 129  | 87    | 57    | 24   | 342   |

Hours of calm in this stability class: 0

Hours of missing wind measurements in this stability class: 1

Hours of missing stability measurements in all stability classes: 7

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Moderately Unstable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 0   | 2    | 1     | 0     | 0    | 4     |
| NNE               | 0                   | 0   | 3    | 1     | 0     | 0    | 4     |
| NE                | 0                   | 0   | 3    | 7     | 0     | 0    | 10    |
| ENE               | 0                   | 4   | 4    | 2     | 1     | 0    | 11    |
| E                 | 0                   | 3   | 2    | 1     | 0     | 0    | 6     |
| ESE               | 0                   | 0   | 3    | 0     | 0     | 0    | 3     |
| SE                | 0                   | 2   | 2    | 2     | 1     | 0    | 7     |
| SSE               | 0                   | 2   | 1    | 0     | 0     | 1    | 4     |
| S                 | 0                   | 0   | 4    | 4     | 1     | 2    | 11    |
| SSW               | 0                   | 4   | 5    | 4     | 4     | 1    | 18    |
| SW                | 1                   | 8   | 9    | 7     | 0     | 0    | 25    |
| WSW               | 1                   | 3   | 5    | 0     | 0     | 0    | 9     |
| W                 | 0                   | 2   | 0    | 2     | 0     | 1    | 5     |
| WNW               | 0                   | 1   | 2    | 3     | 4     | 3    | 13    |
| NW                | 0                   | 7   | 9    | 7     | 0     | 0    | 23    |
| NNW               | 0                   | 3   | 5    | 6     | 2     | 0    | 16    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 3                   | 39  | 59   | 47    | 13    | 8    | 169   |

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: 7

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Slightly Unstable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 4   | 1    | 0     | 0     | 0    | 5     |
| NNE               | 0                   | 1   | 0    | 2     | 0     | 0    | 3     |
| NE                | 0                   | 0   | 2    | 6     | 0     | 0    | 8     |
| ENE               | 0                   | 5   | 6    | 2     | 0     | 0    | 13    |
| E                 | 0                   | 4   | 2    | 1     | 0     | 0    | 7     |
| ESE               | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| SE                | 0                   | 0   | 1    | 2     | 0     | 0    | 3     |
| SSE               | 1                   | 2   | 2    | 2     | 0     | 0    | 7     |
| S                 | 0                   | 2   | 2    | 1     | 3     | 0    | 8     |
| SSW               | 0                   | 2   | 3    | 2     | 2     | 2    | 11    |
| SW                | 0                   | 4   | 5    | 3     | 0     | 0    | 12    |
| WSW               | 0                   | 1   | 0    | 0     | 1     | 0    | 2     |
| W                 | 1                   | 2   | 0    | 1     | 1     | 0    | 5     |
| WNW               | 0                   | 1   | 3    | 2     | 2     | 1    | 9     |
| NW                | 0                   | 5   | 11   | 2     | 1     | 0    | 19    |
| NNW               | 0                   | 5   | 7    | 3     | 1     | 1    | 17    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 2                   | 38  | 46   | 29    | 11    | 4    | 130   |

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: 7



Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Neutral - 296Ft-33Ft Delta-T (F)

Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 2   | 12   | 18    | 4     | 0    | 36    |
| NNE               | 1                   | 4   | 1    | 5     | 1     | 0    | 12    |
| NE                | 0                   | 3   | 5    | 13    | 8     | 2    | 31    |
| ENE               | 1                   | 8   | 14   | 16    | 6     | 3    | 48    |
| E                 | 1                   | 10  | 18   | 25    | 14    | 2    | 70    |
| ESE               | 1                   | 3   | 12   | 12    | 25    | 5    | 58    |
| SE                | 2                   | 4   | 6    | 6     | 10    | 1    | 29    |
| SSE               | 0                   | 2   | 3    | 12    | 10    | 4    | 31    |
| S                 | 1                   | 5   | 7    | 20    | 14    | 1    | 48    |
| SSW               | 0                   | 3   | 10   | 17    | 12    | 12   | 54    |
| SW                | 1                   | 4   | 18   | 21    | 8     | 5    | 57    |
| WSW               | 1                   | 1   | 9    | 5     | 2     | 2    | 20    |
| W                 | 0                   | 3   | 10   | 9     | 4     | 2    | 28    |
| WNW               | 0                   | 6   | 19   | 26    | 25    | 3    | 79    |
| NW                | 1                   | 3   | 14   | 26    | 7     | 8    | 59    |
| NNW               | 0                   | 4   | 19   | 27    | 4     | 0    | 54    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 10                  | 65  | 177  | 258   | 154   | 50   | 714   |

Hours of calm in this stability class: 0

Hours of missing wind measurements in this stability class: 1

Hours of missing stability measurements in all stability classes: 7

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Slightly Stable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 4   | 11   | 1     | 0     | 0    | 16    |
| NNE               | 0                   | 2   | 4    | 1     | 0     | 0    | 7     |
| NE                | 0                   | 3   | 8    | 2     | 2     | 0    | 15    |
| ENE               | 0                   | 4   | 5    | 4     | 0     | 0    | 13    |
| E                 | 0                   | 6   | 14   | 3     | 1     | 0    | 24    |
| ESE               | 1                   | 3   | 10   | 17    | 1     | 0    | 32    |
| SE                | 0                   | 4   | 9    | 10    | 3     | 0    | 26    |
| SSE               | 1                   | 6   | 13   | 26    | 18    | 0    | 64    |
| S                 | 0                   | 2   | 5    | 32    | 22    | 0    | 61    |
| SSW               | 0                   | 4   | 30   | 16    | 21    | 4    | 75    |
| SW                | 0                   | 5   | 15   | 27    | 8     | 2    | 57    |
| WSW               | 1                   | 3   | 6    | 6     | 3     | 0    | 19    |
| W                 | 0                   | 2   | 10   | 21    | 2     | 0    | 35    |
| WNW               | 0                   | 3   | 9    | 18    | 0     | 1    | 31    |
| NW                | 1                   | 4   | 8    | 16    | 0     | 0    | 29    |
| NNW               | 1                   | 3   | 7    | 15    | 0     | 0    | 26    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 5                   | 58  | 164  | 215   | 81    | 7    | 530   |

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: 7

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Moderately Stable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 4   | 3    | 1     | 0     | 0    | 9     |
| NNE               | 0                   | 6   | 5    | 0     | 0     | 0    | 11    |
| NE                | 0                   | 1   | 5    | 2     | 0     | 0    | 8     |
| ENE               | 1                   | 2   | 3    | 2     | 0     | 0    | 8     |
| E                 | 0                   | 2   | 6    | 2     | 0     | 0    | 10    |
| ESE               | 0                   | 0   | 2    | 2     | 2     | 0    | 6     |
| SE                | 0                   | 1   | 4    | 12    | 1     | 0    | 18    |
| SSE               | 0                   | 0   | 10   | 17    | 1     | 0    | 28    |
| S                 | 2                   | 3   | 21   | 24    | 0     | 0    | 50    |
| SSW               | 3                   | 2   | 7    | 19    | 0     | 0    | 31    |
| SW                | 0                   | 1   | 4    | 14    | 1     | 0    | 20    |
| WSW               | 0                   | 0   | 3    | 1     | 0     | 0    | 4     |
| W                 | 0                   | 2   | 1    | 3     | 0     | 0    | 6     |
| WNW               | 0                   | 1   | 1    | 1     | 0     | 0    | 3     |
| NW                | 0                   | 0   | 5    | 1     | 0     | 0    | 6     |
| NNW               | 1                   | 2   | 2    | 3     | 0     | 0    | 8     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 8                   | 27  | 82   | 104   | 5     | 0    | 226   |

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: 7

Quad Cities Nuclear Station

Period of Record: April - June 2002

Stability Class - Extremely Stable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 0   | 1    | 0     | 0     | 0    | 2     |
| NNE               | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| NE                | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| ENE               | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| E                 | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| ESE               | 0                   | 0   | 0    | 1     | 0     | 0    | 1     |
| SE                | 0                   | 0   | 0    | 1     | 0     | 0    | 1     |
| SSE               | 2                   | 1   | 3    | 1     | 0     | 0    | 7     |
| S                 | 1                   | 3   | 3    | 8     | 0     | 0    | 15    |
| SSW               | 0                   | 3   | 11   | 7     | 0     | 0    | 21    |
| SW                | 0                   | 2   | 7    | 2     | 0     | 0    | 11    |
| WSW               | 0                   | 0   | 1    | 0     | 0     | 0    | 1     |
| W                 | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| 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             | 4                   | 14  | 26   | 20    | 0     | 0    | 64    |

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: 7

Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Extremely Unstable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 13  | 5    | 0     | 0     | 0    | 18    |
| NNE               | 1                   | 12  | 3    | 0     | 0     | 0    | 16    |
| NE                | 1                   | 18  | 1    | 0     | 0     | 0    | 20    |
| ENE               | 2                   | 32  | 10   | 0     | 0     | 0    | 44    |
| E                 | 0                   | 21  | 11   | 0     | 0     | 0    | 32    |
| ESE               | 1                   | 29  | 9    | 0     | 0     | 0    | 39    |
| SE                | 4                   | 29  | 0    | 0     | 0     | 0    | 33    |
| SSE               | 0                   | 24  | 2    | 0     | 0     | 0    | 26    |
| S                 | 0                   | 32  | 0    | 0     | 0     | 0    | 32    |
| SSW               | 1                   | 47  | 11   | 0     | 0     | 0    | 59    |
| SW                | 1                   | 76  | 7    | 0     | 0     | 0    | 84    |
| WSW               | 3                   | 48  | 1    | 0     | 0     | 0    | 52    |
| W                 | 7                   | 28  | 4    | 0     | 0     | 0    | 39    |
| WNW               | 1                   | 13  | 7    | 0     | 0     | 0    | 21    |
| NW                | 3                   | 19  | 0    | 0     | 0     | 0    | 22    |
| NNW               | 1                   | 15  | 2    | 0     | 0     | 0    | 18    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 26                  | 456 | 73   | 0     | 0     | 0    | 555   |

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

Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Moderately Unstable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| NNE               | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| NE                | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| ENE               | 1                   | 3   | 1    | 0     | 0     | 0    | 5     |
| E                 | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| ESE               | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| SE                | 0                   | 2   | 1    | 0     | 0     | 0    | 3     |
| SSE               | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| S                 | 1                   | 2   | 0    | 0     | 0     | 0    | 3     |
| SSW               | 0                   | 3   | 0    | 0     | 0     | 0    | 3     |
| SW                | 2                   | 4   | 0    | 0     | 0     | 0    | 6     |
| WSW               | 3                   | 3   | 0    | 0     | 0     | 0    | 6     |
| W                 | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| WNW               | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| 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             | 9                   | 32  | 2    | 0     | 0     | 0    | 43    |

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

Quad Cities Nuclear Station

Period of Record: July - September 2002

Stability Class - Slightly Unstable - 196Ft-33Ft Delta-T (F)

Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| NNE               | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| NE                | 0                   | 4   | 0    | 0     | 0     | 0    | 4     |
| ENE               | 1                   | 9   | 0    | 0     | 0     | 0    | 10    |
| E                 | 1                   | 2   | 1    | 0     | 0     | 0    | 4     |
| ESE               | 0                   | 3   | 0    | 0     | 0     | 0    | 3     |
| SE                | 0                   | 7   | 0    | 0     | 0     | 0    | 7     |
| SSE               | 1                   | 5   | 0    | 0     | 0     | 0    | 6     |
| S                 | 2                   | 5   | 2    | 0     | 0     | 0    | 9     |
| SSW               | 3                   | 4   | 1    | 0     | 0     | 0    | 8     |
| SW                | 1                   | 11  | 2    | 0     | 0     | 0    | 14    |
| WSW               | 2                   | 6   | 0    | 0     | 0     | 0    | 8     |
| W                 | 1                   | 1   | 0    | 0     | 0     | 0    | 2     |
| WNW               | 2                   | 3   | 0    | 0     | 0     | 0    | 5     |
| NW                | 1                   | 2   | 1    | 0     | 0     | 0    | 4     |
| NNW               | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 15                  | 67  | 7    | 0     | 0     | 0    | 89    |

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

Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Neutral - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 2                   | 13  | 5    | 0     | 0     | 0    | 20    |
| NNE               | 3                   | 15  | 0    | 0     | 0     | 0    | 18    |
| NE                | 4                   | 21  | 3    | 0     | 0     | 0    | 28    |
| ENE               | 4                   | 23  | 4    | 0     | 0     | 0    | 31    |
| E                 | 4                   | 11  | 3    | 0     | 0     | 0    | 18    |
| ESE               | 7                   | 11  | 0    | 0     | 0     | 0    | 18    |
| SE                | 6                   | 18  | 1    | 0     | 0     | 0    | 25    |
| SSE               | 4                   | 7   | 0    | 0     | 0     | 0    | 11    |
| S                 | 5                   | 9   | 2    | 0     | 0     | 0    | 16    |
| SSW               | 3                   | 16  | 2    | 0     | 0     | 0    | 21    |
| SW                | 5                   | 23  | 2    | 0     | 0     | 0    | 30    |
| WSW               | 7                   | 16  | 1    | 0     | 0     | 0    | 24    |
| W                 | 6                   | 12  | 0    | 0     | 0     | 0    | 18    |
| WNW               | 7                   | 7   | 2    | 0     | 0     | 0    | 16    |
| NW                | 4                   | 10  | 3    | 0     | 0     | 0    | 17    |
| NNW               | 1                   | 8   | 1    | 0     | 0     | 0    | 10    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 72                  | 220 | 29   | 0     | 0     | 0    | 321   |

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



Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Slightly Stable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 6                   | 8   | 2    | 0     | 0     | 0    | 16    |
| NNE               | 9                   | 4   | 0    | 0     | 0     | 0    | 13    |
| NE                | 16                  | 10  | 0    | 0     | 0     | 0    | 26    |
| ENE               | 15                  | 42  | 2    | 0     | 0     | 0    | 59    |
| E                 | 22                  | 20  | 3    | 0     | 0     | 0    | 45    |
| ESE               | 21                  | 22  | 0    | 0     | 0     | 0    | 43    |
| SE                | 13                  | 12  | 1    | 0     | 0     | 0    | 26    |
| SSE               | 10                  | 15  | 0    | 0     | 0     | 0    | 25    |
| S                 | 14                  | 28  | 0    | 0     | 0     | 0    | 42    |
| SSW               | 14                  | 36  | 4    | 0     | 0     | 0    | 54    |
| SW                | 11                  | 47  | 4    | 0     | 0     | 0    | 62    |
| WSW               | 22                  | 10  | 0    | 0     | 0     | 0    | 32    |
| W                 | 18                  | 5   | 0    | 0     | 0     | 0    | 23    |
| WNW               | 22                  | 8   | 1    | 0     | 0     | 0    | 31    |
| NW                | 19                  | 22  | 3    | 0     | 0     | 0    | 44    |
| NNW               | 4                   | 17  | 1    | 0     | 0     | 0    | 22    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 236                 | 306 | 21   | 0     | 0     | 0    | 563   |

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

Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Moderately Stable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 12                  | 0   | 0    | 0     | 0     | 0    | 12    |
| NNE               | 16                  | 0   | 0    | 0     | 0     | 0    | 16    |
| NE                | 23                  | 0   | 0    | 0     | 0     | 0    | 23    |
| ENE               | 15                  | 2   | 0    | 0     | 0     | 0    | 17    |
| E                 | 26                  | 0   | 0    | 0     | 0     | 0    | 26    |
| ESE               | 19                  | 3   | 0    | 0     | 0     | 0    | 22    |
| SE                | 20                  | 1   | 0    | 0     | 0     | 0    | 21    |
| SSE               | 20                  | 0   | 0    | 0     | 0     | 0    | 20    |
| S                 | 20                  | 1   | 0    | 0     | 0     | 0    | 21    |
| SSW               | 16                  | 3   | 0    | 0     | 0     | 0    | 19    |
| SW                | 17                  | 0   | 0    | 0     | 0     | 0    | 17    |
| WSW               | 11                  | 0   | 0    | 0     | 0     | 0    | 11    |
| W                 | 11                  | 1   | 0    | 0     | 0     | 0    | 12    |
| WNW               | 9                   | 0   | 0    | 0     | 0     | 0    | 9     |
| NW                | 6                   | 2   | 0    | 0     | 0     | 0    | 8     |
| NNW               | 10                  | 0   | 0    | 0     | 0     | 0    | 10    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 251                 | 13  | 0    | 0     | 0     | 0    | 264   |

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

Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Extremely Stable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 13                  | 0   | 0    | 0     | 0     | 0    | 13    |
| NNE               | 18                  | 0   | 0    | 0     | 0     | 0    | 18    |
| NE                | 15                  | 0   | 0    | 0     | 0     | 0    | 15    |
| ENE               | 13                  | 0   | 0    | 0     | 0     | 0    | 13    |
| E                 | 42                  | 0   | 0    | 0     | 0     | 0    | 42    |
| ESE               | 66                  | 0   | 0    | 0     | 0     | 0    | 66    |
| SE                | 18                  | 0   | 0    | 0     | 0     | 0    | 18    |
| SSE               | 5                   | 0   | 0    | 0     | 0     | 0    | 5     |
| S                 | 4                   | 0   | 0    | 0     | 0     | 0    | 4     |
| SSW               | 6                   | 0   | 0    | 0     | 0     | 0    | 6     |
| SW                | 4                   | 0   | 0    | 0     | 0     | 0    | 4     |
| WSW               | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| W                 | 11                  | 0   | 0    | 0     | 0     | 0    | 11    |
| WNW               | 11                  | 0   | 0    | 0     | 0     | 0    | 11    |
| NW                | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| NNW               | 5                   | 0   | 0    | 0     | 0     | 0    | 5     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 233                 | 0   | 0    | 0     | 0     | 0    | 233   |

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

Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Extremely Unstable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 1   | 9    | 5     | 0     | 0    | 15    |
| NNE               | 0                   | 7   | 7    | 2     | 0     | 0    | 16    |
| NE                | 0                   | 4   | 7    | 0     | 0     | 0    | 11    |
| ENE               | 0                   | 19  | 7    | 1     | 0     | 0    | 27    |
| E                 | 0                   | 11  | 13   | 8     | 0     | 0    | 32    |
| ESE               | 1                   | 18  | 10   | 4     | 4     | 0    | 37    |
| SE                | 0                   | 9   | 16   | 1     | 0     | 0    | 26    |
| SSE               | 0                   | 4   | 14   | 6     | 0     | 0    | 24    |
| S                 | 0                   | 6   | 17   | 16    | 0     | 0    | 39    |
| SSW               | 0                   | 14  | 24   | 20    | 13    | 0    | 71    |
| SW                | 0                   | 23  | 17   | 5     | 1     | 0    | 46    |
| WSW               | 0                   | 16  | 19   | 9     | 0     | 0    | 44    |
| W                 | 0                   | 28  | 8    | 4     | 0     | 0    | 40    |
| WNW               | 1                   | 8   | 3    | 4     | 3     | 0    | 19    |
| NW                | 1                   | 11  | 6    | 0     | 0     | 0    | 18    |
| NNW               | 0                   | 6   | 9    | 3     | 0     | 0    | 18    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 3                   | 185 | 186  | 88    | 21    | 0    | 483   |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 1  
 Hours of missing stability measurements in all stability classes: 2

Quad Cities Nuclear Station

Period of Record: July - September 2002

Stability Class - Moderately Unstable - 296Ft-33Ft Delta-T (F)

Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 3   | 4    | 0     | 0     | 0    | 7     |
| NNE               | 0                   | 2   | 2    | 0     | 0     | 0    | 4     |
| NE                | 0                   | 3   | 1    | 0     | 0     | 0    | 4     |
| ENE               | 3                   | 7   | 3    | 1     | 0     | 0    | 14    |
| E                 | 1                   | 9   | 1    | 0     | 0     | 0    | 11    |
| ESE               | 1                   | 6   | 3    | 1     | 0     | 0    | 11    |
| SE                | 1                   | 3   | 4    | 0     | 0     | 0    | 8     |
| SSE               | 1                   | 2   | 4    | 2     | 0     | 0    | 9     |
| S                 | 0                   | 3   | 6    | 1     | 0     | 0    | 10    |
| SSW               | 0                   | 6   | 5    | 5     | 4     | 0    | 20    |
| SW                | 0                   | 4   | 7    | 1     | 0     | 0    | 12    |
| WSW               | 0                   | 3   | 2    | 2     | 0     | 0    | 7     |
| W                 | 1                   | 2   | 2    | 2     | 0     | 0    | 7     |
| WNW               | 0                   | 1   | 0    | 2     | 0     | 0    | 3     |
| NW                | 0                   | 2   | 2    | 1     | 0     | 0    | 5     |
| NNW               | 0                   | 3   | 1    | 0     | 0     | 0    | 4     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 8                   | 59  | 47   | 18    | 4     | 0    | 136   |

Hours of calm in this stability class: 0

Hours of missing wind measurements in this stability class: 2

Hours of missing stability measurements in all stability classes: 2

Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Slightly Unstable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 3   | 1    | 0     | 0     | 0    | 4     |
| NNE               | 0                   | 2   | 2    | 0     | 0     | 0    | 4     |
| NE                | 0                   | 2   | 3    | 1     | 0     | 0    | 6     |
| ENE               | 0                   | 8   | 6    | 1     | 0     | 0    | 15    |
| E                 | 1                   | 1   | 4    | 1     | 0     | 0    | 7     |
| ESE               | 0                   | 4   | 1    | 1     | 0     | 0    | 6     |
| SE                | 0                   | 1   | 6    | 1     | 0     | 0    | 8     |
| SSE               | 0                   | 3   | 1    | 0     | 1     | 0    | 5     |
| S                 | 0                   | 4   | 1    | 2     | 1     | 0    | 8     |
| SSW               | 0                   | 1   | 3    | 2     | 3     | 0    | 9     |
| SW                | 0                   | 2   | 5    | 0     | 0     | 0    | 7     |
| WSW               | 1                   | 1   | 1    | 3     | 0     | 0    | 6     |
| W                 | 0                   | 0   | 2    | 1     | 0     | 0    | 3     |
| WNW               | 1                   | 0   | 1    | 0     | 0     | 0    | 2     |
| NW                | 0                   | 5   | 2    | 0     | 0     | 0    | 7     |
| NNW               | 0                   | 4   | 0    | 0     | 0     | 0    | 4     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 3                   | 41  | 39   | 13    | 5     | 0    | 101   |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 2  
 Hours of missing stability measurements in all stability classes: 2

Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Neutral - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 6   | 14   | 3     | 1     | 0    | 25    |
| NNE               | 0                   | 4   | 9    | 6     | 1     | 0    | 20    |
| NE                | 1                   | 7   | 13   | 2     | 1     | 0    | 24    |
| ENE               | 0                   | 8   | 9    | 9     | 1     | 0    | 27    |
| E                 | 3                   | 6   | 16   | 12    | 0     | 0    | 37    |
| ESE               | 0                   | 6   | 11   | 5     | 0     | 0    | 22    |
| SE                | 1                   | 8   | 14   | 7     | 0     | 1    | 31    |
| SSE               | 1                   | 3   | 9    | 7     | 2     | 0    | 22    |
| S                 | 3                   | 3   | 8    | 10    | 6     | 0    | 30    |
| SSW               | 1                   | 5   | 10   | 17    | 7     | 0    | 40    |
| SW                | 1                   | 6   | 11   | 14    | 2     | 0    | 34    |
| WSW               | 3                   | 4   | 10   | 7     | 0     | 0    | 24    |
| W                 | 3                   | 5   | 12   | 3     | 0     | 0    | 23    |
| WNW               | 0                   | 3   | 11   | 4     | 1     | 0    | 19    |
| NW                | 0                   | 5   | 15   | 5     | 6     | 0    | 31    |
| NNW               | 0                   | 1   | 8    | 8     | 3     | 0    | 20    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 18                  | 80  | 180  | 119   | 31    | 1    | 429   |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 1  
 Hours of missing stability measurements in all stability classes: 2

Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Slightly Stable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 5   | 2    | 10    | 0     | 0    | 17    |
| NNE               | 1                   | 2   | 6    | 3     | 0     | 0    | 12    |
| NE                | 0                   | 5   | 8    | 3     | 0     | 0    | 16    |
| ENE               | 2                   | 2   | 27   | 13    | 0     | 0    | 44    |
| E                 | 3                   | 7   | 30   | 10    | 0     | 0    | 50    |
| ESE               | 0                   | 6   | 16   | 15    | 0     | 0    | 37    |
| SE                | 0                   | 4   | 14   | 13    | 0     | 0    | 31    |
| SSE               | 1                   | 6   | 11   | 14    | 3     | 0    | 35    |
| S                 | 0                   | 3   | 7    | 19    | 14    | 0    | 43    |
| SSW               | 0                   | 5   | 10   | 41    | 16    | 2    | 74    |
| SW                | 0                   | 4   | 6    | 22    | 4     | 0    | 36    |
| WSW               | 0                   | 9   | 14   | 14    | 0     | 0    | 37    |
| W                 | 0                   | 6   | 12   | 1     | 1     | 0    | 20    |
| WNW               | 0                   | 1   | 8    | 2     | 0     | 0    | 11    |
| NW                | 0                   | 4   | 17   | 8     | 0     | 0    | 29    |
| NNW               | 1                   | 6   | 11   | 6     | 0     | 0    | 24    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 8                   | 75  | 199  | 194   | 38    | 2    | 516   |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 9  
 Hours of missing stability measurements in all stability classes: 2



Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Moderately Stable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 2   | 3    | 0     | 0     | 0    | 6     |
| NNE               | 0                   | 1   | 4    | 3     | 0     | 0    | 8     |
| NE                | 0                   | 3   | 5    | 2     | 0     | 0    | 10    |
| ENE               | 2                   | 4   | 5    | 2     | 0     | 0    | 13    |
| E                 | 2                   | 9   | 26   | 4     | 0     | 0    | 41    |
| ESE               | 0                   | 3   | 22   | 13    | 1     | 0    | 39    |
| SE                | 0                   | 1   | 16   | 10    | 1     | 0    | 28    |
| SSE               | 0                   | 4   | 13   | 14    | 0     | 0    | 31    |
| S                 | 0                   | 3   | 17   | 16    | 0     | 0    | 36    |
| SSW               | 0                   | 5   | 8    | 14    | 0     | 0    | 27    |
| SW                | 0                   | 6   | 11   | 2     | 1     | 0    | 20    |
| WSW               | 2                   | 5   | 7    | 2     | 0     | 0    | 16    |
| W                 | 0                   | 4   | 2    | 2     | 0     | 0    | 8     |
| WNW               | 0                   | 2   | 1    | 2     | 0     | 0    | 5     |
| NW                | 0                   | 7   | 6    | 1     | 0     | 0    | 14    |
| NNW               | 1                   | 5   | 3    | 1     | 0     | 0    | 10    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 8                   | 64  | 149  | 88    | 3     | 0    | 312   |

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: 2

Quad Cities Nuclear Station

Period of Record: July - September 2002  
 Stability Class - Extremely Stable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 4   | 1    | 0     | 0     | 0    | 5     |
| NNE               | 1                   | 0   | 2    | 0     | 0     | 0    | 3     |
| NE                | 0                   | 2   | 1    | 1     | 0     | 0    | 4     |
| ENE               | 0                   | 1   | 5    | 0     | 0     | 0    | 6     |
| E                 | 1                   | 4   | 3    | 1     | 0     | 0    | 9     |
| ESE               | 0                   | 0   | 4    | 0     | 0     | 0    | 4     |
| SE                | 0                   | 3   | 8    | 16    | 1     | 0    | 28    |
| SSE               | 2                   | 7   | 20   | 17    | 0     | 0    | 46    |
| S                 | 0                   | 4   | 21   | 2     | 0     | 0    | 27    |
| SSW               | 2                   | 7   | 13   | 4     | 0     | 0    | 26    |
| SW                | 1                   | 3   | 9    | 5     | 0     | 0    | 18    |
| WSW               | 0                   | 2   | 2    | 0     | 0     | 0    | 4     |
| W                 | 1                   | 1   | 0    | 0     | 0     | 0    | 2     |
| WNW               | 3                   | 4   | 4    | 2     | 0     | 0    | 13    |
| NW                | 0                   | 8   | 6    | 0     | 0     | 0    | 14    |
| NNW               | 0                   | 1   | 2    | 0     | 0     | 0    | 3     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 11                  | 51  | 101  | 48    | 1     | 0    | 212   |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 2  
 Hours of missing stability measurements in all stability classes: 2

Quad Cities Nuclear Station

Period of Record: October - December 2002

Stability Class - Extremely Unstable - 196Ft-33Ft Delta-T (F)  
Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 10  | 3    | 0     | 0     | 0    | 14    |
| NNE               | 0                   | 5   | 0    | 0     | 0     | 0    | 5     |
| NE                | 0                   | 5   | 1    | 0     | 0     | 0    | 6     |
| ENE               | 0                   | 6   | 2    | 0     | 0     | 0    | 8     |
| E                 | 0                   | 5   | 1    | 1     | 0     | 0    | 7     |
| ESE               | 0                   | 1   | 1    | 1     | 0     | 0    | 3     |
| SE                | 0                   | 2   | 5    | 0     | 0     | 0    | 7     |
| SSE               | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| S                 | 0                   | 3   | 7    | 0     | 0     | 0    | 10    |
| SSW               | 0                   | 23  | 7    | 0     | 0     | 0    | 30    |
| SW                | 0                   | 30  | 13   | 0     | 0     | 0    | 43    |
| WSW               | 0                   | 2   | 7    | 0     | 0     | 0    | 9     |
| W                 | 1                   | 11  | 29   | 0     | 0     | 0    | 41    |
| WNW               | 0                   | 7   | 10   | 0     | 0     | 0    | 17    |
| NW                | 0                   | 10  | 7    | 0     | 0     | 0    | 17    |
| NNW               | 0                   | 11  | 8    | 0     | 0     | 0    | 19    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 2                   | 131 | 101  | 2     | 0     | 0    | 236   |

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

Quad Cities Nuclear Station

Period of Record: October - December 2002

Stability Class - Moderately Unstable - 196Ft-33Ft Delta-T (F)  
Winds Measured at 33 Feet

| Wind<br>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                   | 3   | 2    | 0     | 0     | 0    | 5     |
| NE                | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| ENE               | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| E                 | 1                   | 0   | 1    | 0     | 0     | 0    | 2     |
| ESE               | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| SE                | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| SSE               | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| S                 | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| SSW               | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| SW                | 0                   | 5   | 1    | 0     | 0     | 0    | 6     |
| WSW               | 0                   | 6   | 0    | 0     | 0     | 0    | 6     |
| W                 | 0                   | 4   | 2    | 0     | 0     | 0    | 6     |
| WNW               | 2                   | 1   | 0    | 0     | 0     | 0    | 3     |
| NW                | 0                   | 4   | 1    | 0     | 0     | 0    | 5     |
| NNW               | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 4                   | 28  | 7    | 0     | 0     | 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

Quad Cities Nuclear Station

Period of Record: October - December 2002  
 Stability Class - Slightly Unstable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 3   | 1    | 0     | 0     | 0    | 4     |
| NNE               | 0                   | 5   | 7    | 0     | 0     | 0    | 12    |
| NE                | 0                   | 8   | 1    | 0     | 0     | 0    | 9     |
| ENE               | 0                   | 4   | 0    | 0     | 0     | 0    | 4     |
| E                 | 0                   | 3   | 1    | 0     | 0     | 0    | 4     |
| ESE               | 1                   | 1   | 4    | 0     | 0     | 0    | 6     |
| SE                | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| SSE               | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| S                 | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| SSW               | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| SW                | 0                   | 3   | 2    | 0     | 0     | 0    | 5     |
| WSW               | 2                   | 5   | 4    | 0     | 0     | 0    | 11    |
| W                 | 0                   | 4   | 7    | 1     | 0     | 0    | 12    |
| WNW               | 0                   | 6   | 8    | 3     | 0     | 0    | 17    |
| NW                | 0                   | 6   | 4    | 0     | 0     | 0    | 10    |
| NNW               | 0                   | 4   | 0    | 0     | 0     | 0    | 4     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 3                   | 54  | 39   | 4     | 0     | 0    | 100   |

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

Quad Cities Nuclear Station

Period of Record: October - December 2002  
 Stability Class - Neutral - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 8                   | 55  | 18   | 3     | 0     | 0    | 84    |
| NNE               | 4                   | 26  | 12   | 0     | 0     | 0    | 42    |
| NE                | 9                   | 39  | 9    | 0     | 0     | 0    | 57    |
| ENE               | 3                   | 40  | 2    | 0     | 0     | 0    | 45    |
| E                 | 8                   | 28  | 28   | 4     | 0     | 0    | 68    |
| ESE               | 4                   | 26  | 9    | 5     | 0     | 0    | 44    |
| SE                | 2                   | 4   | 0    | 0     | 0     | 0    | 6     |
| SSE               | 2                   | 5   | 1    | 0     | 0     | 0    | 8     |
| S                 | 2                   | 6   | 0    | 0     | 0     | 0    | 8     |
| SSW               | 2                   | 18  | 3    | 0     | 0     | 0    | 23    |
| SW                | 2                   | 19  | 9    | 0     | 0     | 0    | 30    |
| WSW               | 8                   | 45  | 12   | 0     | 0     | 0    | 65    |
| W                 | 8                   | 61  | 77   | 11    | 0     | 0    | 157   |
| WNW               | 7                   | 66  | 35   | 6     | 0     | 0    | 114   |
| NW                | 8                   | 62  | 18   | 4     | 0     | 0    | 92    |
| NNW               | 4                   | 31  | 10   | 0     | 0     | 0    | 45    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 81                  | 531 | 243  | 33    | 0     | 0    | 888   |

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

Quad Cities Nuclear Station

Period of Record: October - December 2002

Stability Class - Slightly Stable - 196Ft-33Ft Delta-T (F)  
Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 5                   | 14  | 1    | 0     | 0     | 0    | 20    |
| NNE               | 8                   | 7   | 0    | 0     | 0     | 0    | 15    |
| NE                | 4                   | 6   | 0    | 0     | 0     | 0    | 10    |
| ENE               | 1                   | 17  | 2    | 0     | 0     | 0    | 20    |
| E                 | 7                   | 7   | 0    | 0     | 0     | 0    | 14    |
| ESE               | 11                  | 7   | 4    | 0     | 0     | 0    | 22    |
| SE                | 12                  | 4   | 0    | 0     | 0     | 0    | 16    |
| SSE               | 15                  | 18  | 6    | 0     | 0     | 0    | 39    |
| S                 | 19                  | 28  | 2    | 0     | 0     | 0    | 49    |
| SSW               | 8                   | 21  | 6    | 0     | 0     | 0    | 35    |
| SW                | 17                  | 51  | 24   | 0     | 0     | 0    | 92    |
| WSW               | 20                  | 56  | 6    | 0     | 0     | 0    | 82    |
| W                 | 23                  | 52  | 12   | 0     | 0     | 0    | 87    |
| WNW               | 16                  | 34  | 1    | 0     | 0     | 0    | 51    |
| NW                | 11                  | 27  | 5    | 0     | 0     | 0    | 43    |
| NNW               | 6                   | 17  | 0    | 0     | 0     | 0    | 23    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 183                 | 366 | 69   | 0     | 0     | 0    | 618   |

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

Quad Cities Nuclear Station

Period of Record: October - December 2002

Stability Class - Moderately Stable - 196Ft-33Ft Delta-T (F)

Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 3                   | 0   | 0    | 0     | 0     | 0    | 3     |
| NNE               | 4                   | 2   | 0    | 0     | 0     | 0    | 6     |
| NE                | 8                   | 0   | 0    | 0     | 0     | 0    | 8     |
| ENE               | 8                   | 0   | 0    | 0     | 0     | 0    | 8     |
| E                 | 9                   | 1   | 0    | 0     | 0     | 0    | 10    |
| ESE               | 5                   | 6   | 0    | 0     | 0     | 0    | 11    |
| SE                | 11                  | 1   | 0    | 0     | 0     | 0    | 12    |
| SSE               | 14                  | 3   | 0    | 0     | 0     | 0    | 17    |
| S                 | 14                  | 1   | 0    | 0     | 0     | 0    | 15    |
| SSW               | 10                  | 0   | 0    | 0     | 0     | 0    | 10    |
| SW                | 5                   | 0   | 0    | 0     | 0     | 0    | 5     |
| WSW               | 4                   | 0   | 0    | 0     | 0     | 0    | 4     |
| W                 | 5                   | 2   | 0    | 0     | 0     | 0    | 7     |
| WNW               | 6                   | 3   | 0    | 0     | 0     | 0    | 9     |
| NW                | 3                   | 1   | 0    | 0     | 0     | 0    | 4     |
| NNW               | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 111                 | 20  | 0    | 0     | 0     | 0    | 131   |

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



Quad Cities Nuclear Station

Period of Record: October - December 2002  
 Stability Class - Extremely Stable - 196Ft-33Ft Delta-T (F)  
 Winds Measured at 33 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| NNE               | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| NE                | 4                   | 0   | 0    | 0     | 0     | 0    | 4     |
| ENE               | 4                   | 1   | 0    | 0     | 0     | 0    | 5     |
| E                 | 13                  | 1   | 0    | 0     | 0     | 0    | 14    |
| ESE               | 33                  | 6   | 0    | 0     | 0     | 0    | 39    |
| SE                | 9                   | 0   | 0    | 0     | 0     | 0    | 9     |
| SSE               | 10                  | 0   | 0    | 0     | 0     | 0    | 10    |
| S                 | 7                   | 0   | 0    | 0     | 0     | 0    | 7     |
| SSW               | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| SW                | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| 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               | 2                   | 0   | 0    | 0     | 0     | 0    | 2     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 90                  | 8   | 0    | 0     | 0     | 0    | 98    |

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

Quad Cities Nuclear Station

Period of Record: October - December 2002

Stability Class - Extremely Unstable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 3   | 1    | 0     | 0     | 0    | 4     |
| NNE               | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| NE                | 0                   | 0   | 2    | 0     | 0     | 0    | 2     |
| ENE               | 0                   | 0   | 0    | 1     | 0     | 0    | 1     |
| E                 | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| ESE               | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| SE                | 0                   | 0   | 2    | 3     | 0     | 0    | 5     |
| SSE               | 0                   | 0   | 0    | 0     | 1     | 0    | 1     |
| S                 | 0                   | 1   | 3    | 3     | 4     | 0    | 11    |
| SSW               | 0                   | 6   | 7    | 13    | 3     | 0    | 29    |
| SW                | 0                   | 1   | 8    | 2     | 0     | 0    | 11    |
| WSW               | 0                   | 0   | 2    | 2     | 3     | 0    | 7     |
| W                 | 0                   | 2   | 3    | 13    | 3     | 0    | 21    |
| WNW               | 0                   | 4   | 0    | 2     | 1     | 0    | 7     |
| NW                | 0                   | 0   | 3    | 7     | 0     | 0    | 10    |
| NNW               | 0                   | 2   | 3    | 5     | 0     | 0    | 10    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 0                   | 20  | 34   | 51    | 15    | 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: 1

Quad Cities Nuclear Station

Period of Record: October - December 2002

Stability Class - Moderately Unstable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 1   | 4    | 1     | 0     | 0    | 6     |
| NNE               | 0                   | 3   | 1    | 0     | 0     | 0    | 4     |
| NE                | 0                   | 2   | 2    | 1     | 0     | 0    | 5     |
| ENE               | 0                   | 1   | 1    | 0     | 0     | 0    | 2     |
| E                 | 0                   | 2   | 0    | 0     | 0     | 0    | 2     |
| ESE               | 0                   | 0   | 0    | 2     | 0     | 0    | 2     |
| SE                | 0                   | 1   | 1    | 0     | 1     | 0    | 3     |
| SSE               | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| S                 | 0                   | 3   | 3    | 2     | 1     | 0    | 9     |
| SSW               | 0                   | 4   | 5    | 5     | 4     | 0    | 18    |
| SW                | 0                   | 2   | 4    | 5     | 4     | 0    | 15    |
| WSW               | 0                   | 2   | 2    | 5     | 1     | 0    | 10    |
| W                 | 0                   | 2   | 2    | 11    | 1     | 0    | 16    |
| WNW               | 0                   | 3   | 1    | 4     | 1     | 0    | 9     |
| NW                | 0                   | 2   | 3    | 2     | 0     | 0    | 7     |
| NNW               | 0                   | 3   | 4    | 1     | 0     | 0    | 8     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 0                   | 31  | 33   | 39    | 13    | 0    | 116   |

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

Quad Cities Nuclear Station

Period of Record: October - December 2002  
 Stability Class - Slightly Unstable - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 0                   | 3   | 5    | 0     | 0     | 0    | 8     |
| NNE               | 0                   | 5   | 0    | 3     | 0     | 0    | 8     |
| NE                | 0                   | 2   | 2    | 0     | 0     | 0    | 4     |
| ENE               | 0                   | 3   | 2    | 0     | 0     | 0    | 5     |
| E                 | 0                   | 2   | 3    | 1     | 1     | 0    | 7     |
| ESE               | 0                   | 0   | 0    | 0     | 3     | 0    | 3     |
| SE                | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| SSE               | 0                   | 0   | 1    | 1     | 0     | 0    | 2     |
| S                 | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| SSW               | 0                   | 3   | 4    | 2     | 1     | 0    | 10    |
| SW                | 0                   | 1   | 5    | 3     | 0     | 0    | 9     |
| WSW               | 0                   | 3   | 2    | 3     | 1     | 0    | 9     |
| W                 | 0                   | 2   | 4    | 7     | 1     | 1    | 15    |
| WNW               | 0                   | 1   | 3    | 6     | 0     | 1    | 11    |
| NW                | 0                   | 4   | 5    | 1     | 0     | 0    | 10    |
| NNW               | 0                   | 1   | 2    | 0     | 0     | 0    | 3     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 1                   | 30  | 38   | 27    | 7     | 2    | 105   |

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

Quad Cities Nuclear Station

Period of Record: October - December 2002  
 Stability Class - Neutral - 296Ft-33Ft Delta-T (F)  
 Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 2                   | 8   | 43   | 16    | 2     | 0    | 71    |
| NNE               | 0                   | 13  | 27   | 16    | 2     | 0    | 58    |
| NE                | 1                   | 10  | 24   | 23    | 3     | 0    | 61    |
| ENE               | 1                   | 3   | 30   | 25    | 0     | 0    | 59    |
| E                 | 1                   | 11  | 22   | 15    | 14    | 0    | 63    |
| ESE               | 1                   | 4   | 15   | 15    | 9     | 5    | 49    |
| SE                | 0                   | 4   | 3    | 2     | 0     | 0    | 9     |
| SSE               | 1                   | 1   | 2    | 5     | 4     | 6    | 19    |
| S                 | 0                   | 0   | 3    | 12    | 4     | 0    | 19    |
| SSW               | 0                   | 2   | 14   | 13    | 7     | 0    | 36    |
| SW                | 3                   | 2   | 13   | 16    | 11    | 0    | 45    |
| WSW               | 2                   | 3   | 20   | 23    | 7     | 0    | 55    |
| W                 | 1                   | 4   | 22   | 62    | 56    | 17   | 162   |
| WNW               | 1                   | 7   | 41   | 39    | 24    | 10   | 122   |
| NW                | 0                   | 8   | 36   | 46    | 13    | 4    | 107   |
| NNW               | 0                   | 6   | 24   | 23    | 4     | 0    | 57    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 14                  | 86  | 339  | 351   | 160   | 42   | 992   |

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 12  
 Hours of missing stability measurements in all stability classes: 1

Quad Cities Nuclear Station

Period of Record: October - December 2002

Stability Class - Slightly Stable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>Direction | Wind Speed (in mph) |     |      |       |       |      | Total |
|-------------------|---------------------|-----|------|-------|-------|------|-------|
|                   | 1-3                 | 4-7 | 8-12 | 13-18 | 19-24 | > 24 |       |
| N                 | 1                   | 0   | 7    | 11    | 0     | 0    | 19    |
| NNE               | 0                   | 6   | 16   | 5     | 0     | 0    | 27    |
| NE                | 0                   | 1   | 6    | 4     | 0     | 0    | 11    |
| ENE               | 1                   | 1   | 3    | 6     | 2     | 0    | 13    |
| E                 | 0                   | 2   | 5    | 2     | 0     | 0    | 9     |
| ESE               | 0                   | 1   | 2    | 3     | 5     | 1    | 12    |
| SE                | 1                   | 0   | 6    | 8     | 0     | 0    | 15    |
| SSE               | 0                   | 1   | 8    | 10    | 1     | 0    | 20    |
| S                 | 1                   | 3   | 23   | 27    | 19    | 0    | 73    |
| SSW               | 1                   | 4   | 28   | 34    | 21    | 8    | 96    |
| SW                | 0                   | 3   | 15   | 37    | 15    | 2    | 72    |
| WSW               | 0                   | 0   | 21   | 35    | 5     | 0    | 61    |
| W                 | 1                   | 1   | 27   | 29    | 7     | 0    | 65    |
| WNW               | 0                   | 3   | 23   | 26    | 0     | 0    | 52    |
| NW                | 0                   | 2   | 16   | 29    | 1     | 0    | 48    |
| NNW               | 0                   | 1   | 15   | 13    | 0     | 0    | 29    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 6                   | 29  | 221  | 279   | 76    | 11   | 622   |

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

Quad Cities Nuclear Station

Period of Record: October - December 2002

Stability Class - Moderately Stable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>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               | 1                   | 2   | 2    | 0     | 0     | 0    | 5     |
| NE                | 0                   | 1   | 3    | 1     | 0     | 0    | 5     |
| ENE               | 1                   | 2   | 1    | 0     | 0     | 0    | 4     |
| E                 | 0                   | 6   | 12   | 2     | 0     | 0    | 20    |
| ESE               | 0                   | 1   | 2    | 1     | 1     | 0    | 5     |
| SE                | 0                   | 3   | 14   | 10    | 0     | 0    | 27    |
| SSE               | 0                   | 2   | 6    | 5     | 0     | 0    | 13    |
| S                 | 0                   | 1   | 3    | 16    | 0     | 0    | 20    |
| SSW               | 0                   | 0   | 8    | 12    | 1     | 0    | 21    |
| SW                | 1                   | 3   | 7    | 0     | 0     | 0    | 11    |
| WSW               | 0                   | 4   | 2    | 2     | 0     | 0    | 8     |
| W                 | 1                   | 0   | 2    | 1     | 0     | 0    | 4     |
| WNW               | 0                   | 3   | 3    | 1     | 0     | 0    | 7     |
| NW                | 0                   | 1   | 4    | 6     | 0     | 0    | 11    |
| NNW               | 0                   | 0   | 8    | 2     | 0     | 0    | 10    |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 4                   | 29  | 80   | 60    | 2     | 0    | 175   |

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

Quad Cities Nuclear Station

Period of Record: October - December 2002

Stability Class - Extremely Stable - 296Ft-33Ft Delta-T (F)  
Winds Measured at 296 Feet

| Wind<br>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               | 1                   | 0   | 0    | 0     | 0     | 0    | 1     |
| NE                | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| ENE               | 0                   | 1   | 0    | 0     | 0     | 0    | 1     |
| E                 | 0                   | 2   | 3    | 1     | 0     | 0    | 6     |
| ESE               | 0                   | 0   | 3    | 0     | 0     | 0    | 3     |
| SE                | 0                   | 2   | 5    | 10    | 0     | 0    | 17    |
| SSE               | 0                   | 0   | 3    | 3     | 0     | 0    | 6     |
| S                 | 0                   | 0   | 5    | 7     | 1     | 0    | 13    |
| SSW               | 0                   | 1   | 8    | 6     | 0     | 0    | 15    |
| SW                | 0                   | 0   | 1    | 0     | 0     | 0    | 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                   | 1   | 0    | 0     | 0     | 0    | 1     |
| NNW               | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Variable          | 0                   | 0   | 0    | 0     | 0     | 0    | 0     |
| Total             | 1                   | 8   | 28   | 27    | 1     | 0    | 65    |

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



QUAD CITIES

APPENDIX III

2002 REMP SAMPLE RESULTS

# QUAD CITIES

## TABLE OF CONTENTS

|     |                                   |        |
|-----|-----------------------------------|--------|
|     | List of Tables .....              | III-3  |
| 1.0 | INTRODUCTION .....                | III-4  |
| 2.0 | LISTING OF MISSED SAMPLES .....   | III-5  |
| 3.0 | LISTING OF SAMPLE ANOMALIES ..... | III-6  |
| 4.0 | TLD DATA.....                     | III-34 |
| 5.0 | GRAPHS OF DATA TRENDS .....       | III-38 |

# QUAD CITIES

## LIST OF TABLES

| <u>No.</u> | <u>Title</u>   | <u>Page</u> |
|------------|--|-------------|
| 1          | Airborne Particulates and Iodine-131 .....                           | III-7       |
| 2          | Airborne Particulates, Quarterly Composites .....                    | III-12      |
| 3          | Milk .....   | III-15      |
| 4          | Fish, Edible Portions .....  | III-18      |
| 5          | Bottom Sediments .....   | III-20      |
| 6          | Vegetables .....   | III-21      |
| 7          | Surface Water .....  | III-24      |
| 8          | Well Water .....   | III-29      |
| 12         | Milch Animals, Nearest Residence, and Nearest Livestock Census ..... | III-30      |

## QUAD CITIES

### 1.0 INTRODUCTION

The following constitutes the current 2002 Monthly Progress Report for the Radiological Environmental Monitoring Program conducted at the Quad Cities Nuclear Power Station, Cordova, Illinois. Results of completed analyses are presented in the attached tables. Missing entries indicate analyses that are not completed and the results will appear in subsequent reports.

Missing tables indicate sample media scheduled for collection at a future date. Tables will appear in subsequent reports.

Data obtained in the program are well within the ranges previously encountered in the program and to be expected in the environmental media sampled.

For all gamma isotopic analyses, spectrum is computer scanned from 80 to 2048 keV. Specifically included are Mn-54, Fe-59, Co-58, Co-60, Zn-65, Zr/Nb-95, I-131, Ba/La-140, Cs-134 and Cs-137. Naturally occurring gamma-emitters, such as K-40 and Ra daughters, are frequently detected but not listed here. The data is reported in the format of  $x \pm 2s; 2TPU$ , where "x" is the significant result, "s" is the one standard deviation counting uncertainty, and TPU is the total propagated uncertainty at the one sigma confidence level.

Locations denoted by a "(C)" after site code refer to control locations.

All concentrations, except gross beta, are decay corrected to the time of collection.

TLD data is provided by Exelon Generation Company.

#### Deviations from Scheduled Sampling and Corrective Actions Taken

All samples were collected within the scheduled period unless noted otherwise in the Listing of Missed Samples.

#### Unusual Environmental Measurements

---

| Sample Type | Location Code | Collection Date | Comments |
|-------------|---------------|-----------------|----------|
|-------------|---------------|-----------------|----------|

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None for 2002.

# QUAD CITIES

## 2.0 LISTING OF MISSED SAMPLES

| Sample Type | Location Code | Expected Collection Date | Reason  |
|-------------|---------------|--------------------------|---|
| SW          | Q-33          | 01-04-02                 | No sample; water frozen.  |
| SW          | Q-34          | 01-04-02                 | No sample; water frozen.  |
| SW          | Q-33          | 01-18-02                 | No sample; water frozen.  |
| SW          | Q-34          | 01-18-02                 | No sample; water frozen.  |
| TLD         | Other         | 02-02-02                 | TLD Q-112-2 found missing during monthly check; collector placed Spare #02018928. |
| SW          | Q-33          | 02-02-02                 | No sample; water frozen.  |
| SW          | Q-34          | 02-02-02                 | No sample; water frozen.  |
| TLD         | Other         | 03-01-02                 | TLD Q-112-2 found missing during monthly check; collector placed spare #02018925. |
| TLD         | Other         | 07-27-02                 | TLD Q-112-2 found missing during monthly check; collector placed spare #2025705.  |
| A           | Q-02          | 08-09-02                 | No sample; power out. Station Point of Contact notified.                          |
| A/I         | Q-02          | 08-17-02                 | No sample; power out.   |
| SW          | Q-33          | 12-06-02                 | No sample - river frozen.   |
| SW          | Q-34          | 12-06-02                 | No sample - river frozen.   |

## QUAD CITIES

### 3.0 LISTING OF SAMPLE ANOMALIES

| Sample Type | Location Code | Collection Date | Reason  |
|-------------|---------------|-----------------|---|
| A/I         | Q-02          | 08-02-02        | Low reading of 65.5 hours due to power outage.  |
| A/I         | Q-07          | 08-16-02        | Low reading of 121.5 hours due to power outage.                                       |
| A           | Q-02          | 08-23-02        | Slightly low reading of 160.7 hours due to power outage and recent power restoration. |
| A/I         | Q-07          | 08-23-02        | Slightly low reading of 164.7 hours due to power outage and recent power restoration. |

# QUAD CITIES

Table 1. Airborne Particulates and Iodine Cartridges

Collection: Airborne Particulates - Continuous; weekly exchange  
Iodine Cartridges - Continuous; biweekly exchange  
Required LLD: 0.01 pCi/m<sup>3</sup> for Gross Beta and 0.07 pCi/m<sup>3</sup> for I-131  
Units: 10<sup>-2</sup> pCi/m<sup>3</sup>

| Q-01 Onsite No. 1  |                          |                 |                    |                    |                          |                 |                    |
|--------------------|--------------------------|-----------------|--------------------|--------------------|--------------------------|-----------------|--------------------|
| Date Collected     | Volume (m <sup>3</sup> ) | Gross Beta      | I-131 <sup>a</sup> | Date Collected     | Volume (m <sup>3</sup> ) | Gross Beta      | I-131 <sup>a</sup> |
| 01-04-02           | 282                      | 3.2 ± 0.4 ; 0.7 | 0.3 ± 0.5 ; 0.5    | 07-05-02           | 287                      | 3.0 ± 0.3 ; 0.6 | 0.2 ± 0.4 ; 0.4    |
| 01-11-02           | 286                      | 3.9 ± 0.4 ; 0.8 | -                  | 07-12-02           | 274                      | 2.6 ± 0.3 ; 0.6 | -                  |
| 01-18-02           | 289                      | 2.6 ± 0.3 ; 0.6 | 0.3 ± 0.5 ; 0.5    | 07-19-02           | 294                      | 2.8 ± 0.4 ; 0.6 | -0.4 ± 0.5 ; 0.5   |
| 01-25-02           | 281                      | 3.2 ± 0.4 ; 0.7 | -                  | 07-26-02           | 278                      | 2.3 ± 0.4 ; 0.5 | -                  |
| 02-01-02           | 283                      | 2.6 ± 0.3 ; 0.6 | 0.6 ± 0.5 ; 0.5    | 08-02-02           | 288                      | 3.0 ± 0.3 ; 0.6 | 0.3 ± 0.3 ; 0.3    |
| 02-08-02           | 285                      | 5.3 ± 0.4 ; 1.0 | -                  | 08-09-02           | 282                      | 2.0 ± 0.4 ; 0.5 | -                  |
| 02-15-02           | 286                      | 2.5 ± 0.3 ; 0.6 | 0.4 ± 0.4 ; 0.4    | 08-16-02           | 283                      | 3.0 ± 0.3 ; 0.6 | 0.2 ± 0.4 ; 0.4    |
| 02-22-02           | 281                      | 1.5 ± 0.3 ; 0.4 | -                  | 08-23-02           | 286                      | 2.0 ± 0.3 ; 0.5 | -                  |
| 03-01-02           | 289                      | 2.0 ± 0.3 ; 0.5 | -0.1 ± 0.4 ; 0.4   | 08-30-02           | 285                      | 2.5 ± 0.4 ; 0.6 | -0.3 ± 0.3 ; 0.3   |
| 03-08-02           | 281                      | 3.2 ± 0.4 ; 0.7 | -                  | 09-06-02           | 284                      | 2.9 ± 0.3 ; 0.6 | -                  |
| 03-15-02           | 285                      | 3.2 ± 0.4 ; 0.7 | 0.3 ± 0.5 ; 0.5    | 09-13-02           | 286                      | 3.6 ± 0.4 ; 0.8 | -0.3 ± 0.3 ; 0.3   |
| 03-22-02           | 286                      | 2.8 ± 0.3 ; 0.6 | -                  | 09-21-02           | 285                      | 3.2 ± 0.4 ; 0.7 | -                  |
| 03-29-02           | 281                      | 2.7 ± 0.4 ; 0.6 | 0.2 ± 0.5 ; 0.5    | 09-27-02           | 285                      | 2.6 ± 0.3 ; 0.6 | -0.5 ± 0.4 ; 0.4   |
| 1st Qtr. Mean±s.d. |                          | 3.0 ± 0.9       | 0.3± 0.2           | 3rd Qtr. Mean±s.d. |                          | 2.7 ± 0.5       | -0.1± 0.3          |
| 04-05-02           | 283                      | 1.9 ± 0.4 ; 0.5 | -                  | 10-04-02           | 285                      | 3.5 ± 0.4 ; 0.7 | -                  |
| 04-12-02           | 283                      | 2.5 ± 0.3 ; 0.6 | -0.0 ± 0.5 ; 0.5   | 10-12-02           | 327                      | 2.9 ± 0.4 ; 0.6 | 0.1 ± 0.3 ; 0.3    |
| 04-19-02           | 286                      | 2.3 ± 0.4 ; 0.6 | -                  | 10-18-02           | 242                      | 2.0 ± 0.4 ; 0.5 | -                  |
| 04-26-02           | 287                      | 2.2 ± 0.3 ; 0.5 | -0.0 ± 0.5 ; 0.5   | 10-25-02           | 287                      | 2.0 ± 0.3 ; 0.5 | 0.4 ± 0.4 ; 0.4    |
| 05-03-02           | 279                      | 1.7 ± 0.3 ; 0.4 | -                  | 11-02-02           | 322                      | 2.7 ± 0.3 ; 0.6 | -                  |
| 05-10-02           | 288                      | 2.0 ± 0.3 ; 0.5 | 0.2 ± 0.5 ; 0.5    | 11-09-02           | 288                      | 5.9 ± 0.5 ; 1.2 | -0.2 ± 0.3 ; 0.3   |
| 05-17-02           | 286                      | 1.4 ± 0.3 ; 0.4 | -                  | 11-15-02           | 251                      | 3.5 ± 0.5 ; 0.8 | -                  |
| 05-24-02           | 285                      | 1.8 ± 0.3 ; 0.4 | 0.5 ± 0.4 ; 0.4    | 11-22-02           | 282                      | 2.2 ± 0.4 ; 0.5 | 0.0 ± 0.4 ; 0.4    |
| 05-31-02           | 286                      | 2.1 ± 0.3 ; 0.5 | -                  | 11-30-02           | 325                      | 2.1 ± 0.3 ; 0.5 | -                  |
| 06-07-02           | 286                      | 1.7 ± 0.3 ; 0.4 | -0.1 ± 0.4 ; 0.4   | 12-06-02           | 244                      | 2.7 ± 0.4 ; 0.6 | 0.1 ± 0.4 ; 0.4    |
| 06-14-02           | 277                      | 2.1 ± 0.3 ; 0.5 | -                  | 12-13-02           | 287                      | 4.6 ± 0.4 ; 0.9 | -                  |
| 06-20-02           | 250                      | 2.6 ± 0.4 ; 0.6 | 0.1 ± 0.5 ; 0.5    | 12-20-02           | 286                      | 3.9 ± 0.4 ; 0.8 | 0.8 ± 0.3 ; 0.3    |
| 06-28-02           | 327                      | 3.4 ± 0.4 ; 0.7 | -                  | 12-27-02           | 282                      | 2.5 ± 0.4 ; 0.6 | -                  |
| 2nd Qtr. Mean±s.d. |                          | 2.1 ± 0.5       | 0.1± 0.2           | 4th Qtr. Mean±s.d. |                          | 3.1 ± 1.1       | 0.2± 0.3           |

<sup>a</sup> Volume based on a two week collection period.

NOTE: Several ODCM-required LLDs were changed in September 2002.

# QUAD CITIES

Table 1. Airborne Particulates and Iodine Cartridges  
Collection: Airborne Particulates - Continuous; weekly exchange  
Iodine Cartridges - Continuous; biweekly exchange  
Required LLD: 0.01 pCi/m<sup>3</sup> for Gross Beta and 0.07 pCi/m<sup>3</sup> for I-131  
Units: 10<sup>-2</sup> pCi/m<sup>3</sup>

| Q-02 Onsite No. 2  |                          |                 |                    |                    |                          |                 |                    |
|--------------------|--------------------------|-----------------|--------------------|--------------------|--------------------------|-----------------|--------------------|
| Date Collected     | Volume (m <sup>3</sup> ) | Gross Beta      | I-131 <sup>a</sup> | Date Collected     | Volume (m <sup>3</sup> ) | Gross Beta      | I-131 <sup>a</sup> |
| 01-04-02           | 282                      | 3.5 ± 0.4 ; 0.8 | -0.0 ± 0.5 ; 0.5   | 07-05-02           | 287                      | 2.7 ± 0.3 ; 0.6 | 0.1 ± 0.4 ; 0.4    |
| 01-11-02           | 287                      | 3.8 ± 0.4 ; 0.8 | -                  | 07-12-02           | 275                      | 2.2 ± 0.3 ; 0.5 | -                  |
| 01-18-02           | 286                      | 2.7 ± 0.3 ; 0.6 | 0.6 ± 0.4 ; 0.4    | 07-19-02           | 294                      | 3.2 ± 0.4 ; 0.7 | -0.2 ± 0.4 ; 0.4   |
| 01-25-02           | 284                      | 3.5 ± 0.4 ; 0.7 | -                  | 07-26-02           | 278                      | 2.3 ± 0.4 ; 0.6 | -                  |
| 02-01-02           | 282                      | 2.2 ± 0.3 ; 0.5 | 0.1 ± 0.5 ; 0.5    | 08-02-02           | 111 <sup>b</sup>         | 2.4 ± 0.6 ; 0.7 | -0.3 ± 0.6 ; 0.6   |
| 02-08-02           | 285                      | 5.2 ± 0.4 ; 1.0 | -                  | 08-09-02           | NS <sup>c</sup>          | -               | -                  |
| 02-15-02           | 286                      | 2.3 ± 0.3 ; 0.5 | 0.3 ± 0.4 ; 0.4    | 08-16-02           | NS <sup>c</sup>          | -               | -                  |
| 02-22-02           | 286                      | 1.2 ± 0.3 ; 0.4 | -                  | 08-23-02           | 273 <sup>d</sup>         | 1.4 ± 0.3 ; 0.4 | -                  |
| 03-01-02           | 289                      | 2.0 ± 0.3 ; 0.5 | -0.0 ± 0.4 ; 0.4   | 08-30-02           | 284                      | 2.4 ± 0.4 ; 0.6 | 0.9 ± 0.3 ; 0.4    |
| 03-08-02           | 281                      | 3.4 ± 0.4 ; 0.7 | -                  | 09-06-02           | 285                      | 3.0 ± 0.4 ; 0.6 | -                  |
| 03-15-02           | 285                      | 3.5 ± 0.4 ; 0.8 | 0.2 ± 0.2 ; 0.2    | 09-13-02           | 286                      | 3.6 ± 0.4 ; 0.8 | 0.2 ± 0.4 ; 0.4    |
| 03-22-02           | 286                      | 2.2 ± 0.3 ; 0.5 | -                  | 09-21-02           | 285                      | 2.9 ± 0.3 ; 0.6 | -                  |
| 03-29-02           | 285                      | 2.9 ± 0.4 ; 0.7 | -0.1 ± 0.5 ; 0.5   | 09-27-02           | 285                      | 2.6 ± 0.3 ; 0.6 | -0.3 ± 0.4 ; 0.4   |
| 1st Qtr. Mean±s.d. |                          | 3.0 ± 1.0       | 0.1 ± 0.2          | 3rd Qtr. Mean±s.d. |                          | 2.6 ± 0.6       | 0.1 ± 0.5          |
| 04-05-02           | 283                      | 1.6 ± 0.4 ; 0.5 | -                  | 10-04-02           | 285                      | 3.6 ± 0.4 ; 0.7 | -                  |
| 04-12-02           | 283                      | 2.6 ± 0.3 ; 0.6 | -0.1 ± 0.5 ; 0.5   | 10-12-02           | 327                      | 3.0 ± 0.4 ; 0.7 | -0.2 ± 0.3 ; 0.3   |
| 04-19-02           | 286                      | 2.2 ± 0.4 ; 0.5 | -                  | 10-18-02           | 242                      | 2.6 ± 0.4 ; 0.6 | -                  |
| 04-26-02           | 287                      | 1.9 ± 0.3 ; 0.5 | 0.8 ± 0.5 ; 0.6    | 10-25-02           | 286                      | 1.9 ± 0.3 ; 0.5 | -0.1 ± 0.4 ; 0.4   |
| 05-03-02           | 284                      | 1.4 ± 0.3 ; 0.4 | -                  | 11-02-02           | 322                      | 2.7 ± 0.3 ; 0.6 | -                  |
| 05-10-02           | 288                      | 1.7 ± 0.3 ; 0.4 | 0.2 ± 0.4 ; 0.4    | 11-09-02           | 288                      | 6.0 ± 0.5 ; 1.2 | -0.3 ± 0.4 ; 0.4   |
| 05-17-02           | 286                      | 1.7 ± 0.3 ; 0.5 | -                  | 11-15-02           | 251                      | 2.8 ± 0.4 ; 0.7 | -                  |
| 05-24-02           | 285                      | 1.9 ± 0.3 ; 0.5 | -0.1 ± 0.4 ; 0.4   | 11-22-02           | 281                      | 2.1 ± 0.4 ; 0.5 | 0.6 ± 0.3 ; 0.3    |
| 05-31-02           | 286                      | 1.9 ± 0.3 ; 0.4 | -                  | 11-30-02           | 325                      | 2.0 ± 0.3 ; 0.5 | -                  |
| 06-07-02           | 286                      | 1.7 ± 0.3 ; 0.4 | 0.1 ± 0.4 ; 0.4    | 12-06-02           | 244                      | 2.5 ± 0.4 ; 0.6 | -0.1 ± 0.4 ; 0.4   |
| 06-14-02           | 273                      | 1.8 ± 0.3 ; 0.4 | -                  | 12-13-02           | 287                      | 4.3 ± 0.4 ; 0.9 | -                  |
| 06-20-02           | 249                      | 2.1 ± 0.4 ; 0.5 | 0.3 ± 0.5 ; 0.5    | 12-20-02           | 286                      | 3.2 ± 0.4 ; 0.7 | -0.4 ± 0.4 ; 0.4   |
| 06-28-02           | 327                      | 3.1 ± 0.4 ; 0.7 | -                  | 12-27-02           | 282                      | 2.7 ± 0.4 ; 0.6 | -                  |
| 2nd Qtr. Mean±s.d. |                          | 2.0 ± 0.5       | 0.2 ± 0.4          | 4th Qtr. Mean±s.d. |                          | 3.0 ± 1.1       | -0.1 ± 0.4         |

<sup>a</sup> Volume based on a two week collection period.

<sup>b</sup> Volume low due to power outage.

<sup>c</sup> "NS" = No sample; power out.

<sup>d</sup> Volume low due to recent power restoration.

NOTE: Several ODCM-required LLDs were changed in September 2002.



# QUAD CITIES

Table 1. Airborne Particulates and Iodine Cartridges  
Collection: Airborne Particulates - Continuous; weekly exchange  
Iodine Cartridges - Continuous; biweekly exchange  
Required LLD: 0.01 pCi/m<sup>3</sup> for Gross Beta and 0.07 pCi/m<sup>3</sup> for I-131  
Units: 10<sup>-2</sup> pCi/m<sup>3</sup>

| Q-03 Onsite No. 3  |                          |                 |                    |                    |                          |                 |                    |
|--------------------|--------------------------|-----------------|--------------------|--------------------|--------------------------|-----------------|--------------------|
| Date Collected     | Volume (m <sup>3</sup> ) | Gross Beta      | I-131 <sup>a</sup> | Date Collected     | Volume (m <sup>3</sup> ) | Gross Beta      | I-131 <sup>a</sup> |
| 01-04-02           | 282                      | 3.3 ± 0.4 ; 0.7 | -1.1 ± 0.5 ; 0.5   | 07-05-02           | 287                      | 2.5 ± 0.3 ; 0.6 | -0.4 ± 0.4 ; 0.4   |
| 01-11-02           | 286                      | 4.0 ± 0.4 ; 0.8 | -                  | 07-12-02           | 274                      | 2.1 ± 0.3 ; 0.5 | -                  |
| 01-18-02           | 289                      | 2.4 ± 0.3 ; 0.5 | 0.4 ± 0.5 ; 0.5    | 07-19-02           | 294                      | 2.9 ± 0.4 ; 0.7 | 0.4 ± 0.5 ; 0.5    |
| 01-25-02           | 281                      | 3.3 ± 0.4 ; 0.7 | -                  | 07-26-02           | 278                      | 2.2 ± 0.4 ; 0.5 | -                  |
| 02-01-02           | 283                      | 2.6 ± 0.3 ; 0.6 | 0.1 ± 0.4 ; 0.4    | 08-02-02           | 288                      | 2.7 ± 0.3 ; 0.6 | -0.9 ± 0.5 ; 0.5   |
| 02-08-02           | 285                      | 4.7 ± 0.4 ; 0.9 | -                  | 08-09-02           | 282                      | 1.9 ± 0.4 ; 0.5 | -                  |
| 02-15-02           | 286                      | 2.2 ± 0.3 ; 0.5 | 0.6 ± 0.4 ; 0.4    | 08-16-02           | 283                      | 3.2 ± 0.4 ; 0.7 | 0.8 ± 0.3 ; 0.3    |
| 02-22-02           | 286                      | 1.1 ± 0.3 ; 0.4 | -                  | 08-23-02           | 286                      | 2.0 ± 0.3 ; 0.5 | -                  |
| 03-01-02           | 289                      | 1.9 ± 0.3 ; 0.5 | 0.2 ± 0.5 ; 0.5    | 08-30-02           | 284                      | 2.3 ± 0.4 ; 0.6 | -0.2 ± 0.4 ; 0.4   |
| 03-08-02           | 281                      | 3.8 ± 0.4 ; 0.8 | -                  | 09-06-02           | 285                      | 2.9 ± 0.3 ; 0.6 | -                  |
| 03-15-02           | 285                      | 2.9 ± 0.4 ; 0.7 | 0.3 ± 0.4 ; 0.4    | 09-13-02           | 286                      | 3.3 ± 0.4 ; 0.8 | -0.4 ± 0.4 ; 0.4   |
| 03-22-02           | 286                      | 2.2 ± 0.3 ; 0.5 | -                  | 09-21-02           | 285                      | 2.8 ± 0.3 ; 0.6 | -                  |
| 03-29-02           | 281                      | 2.7 ± 0.4 ; 0.6 | 0.1 ± 0.4 ; 0.4    | 09-27-02           | 285                      | 2.6 ± 0.3 ; 0.6 | -0.1 ± 0.4 ; 0.4   |
| 1st Qtr. Mean±s.d. |                          | 2.9 ± 1.0       | 0.1 ± 0.5          | 3rd Qtr. Mean±s.d. |                          | 2.6 ± 0.4       | -0.1 ± 0.6         |
| 04-05-02           | 283                      | 1.5 ± 0.4 ; 0.4 | -                  | 10-04-02           | 280                      | 3.2 ± 0.4 ; 0.7 | -                  |
| 04-12-02           | 283                      | 2.1 ± 0.3 ; 0.5 | 0.5 ± 0.4 ; 0.4    | 10-12-02           | 327                      | 2.5 ± 0.4 ; 0.6 | -0.3 ± 0.3 ; 0.3   |
| 04-19-02           | 286                      | 1.9 ± 0.4 ; 0.5 | -                  | 10-18-02           | 242                      | 2.6 ± 0.4 ; 0.6 | -                  |
| 04-26-02           | 287                      | 1.6 ± 0.3 ; 0.4 | 0.0 ± 0.4 ; 0.4    | 10-25-02           | 286                      | 1.9 ± 0.3 ; 0.5 | 0.4 ± 0.4 ; 0.4    |
| 05-03-02           | 284                      | 1.3 ± 0.3 ; 0.4 | -                  | 11-02-02           | 322                      | 2.6 ± 0.3 ; 0.6 | -                  |
| 05-10-02           | 288                      | 2.1 ± 0.3 ; 0.5 | 0.1 ± 0.5 ; 0.5    | 11-09-02           | 288                      | 5.0 ± 0.5 ; 1.0 | 0.2 ± 0.3 ; 0.3    |
| 05-17-02           | 286                      | 1.5 ± 0.3 ; 0.4 | -                  | 11-15-02           | 251                      | 3.2 ± 0.5 ; 0.7 | -                  |
| 05-24-02           | 285                      | 1.6 ± 0.3 ; 0.4 | 0.2 ± 0.4 ; 0.4    | 11-22-02           | 281                      | 2.0 ± 0.4 ; 0.5 | -0.1 ± 0.4 ; 0.4   |
| 05-31-02           | 286                      | 2.0 ± 0.3 ; 0.5 | -                  | 11-30-02           | 325                      | 2.1 ± 0.3 ; 0.5 | -                  |
| 06-07-02           | 287                      | 1.5 ± 0.3 ; 0.4 | -0.3 ± 0.4 ; 0.4   | 12-06-02           | 244                      | 2.4 ± 0.4 ; 0.6 | 0.3 ± 0.4 ; 0.4    |
| 06-14-02           | 276                      | 1.9 ± 0.3 ; 0.5 | -                  | 12-13-02           | 287                      | 4.0 ± 0.4 ; 0.8 | -                  |
| 06-20-02           | 250                      | 2.0 ± 0.4 ; 0.5 | 0.2 ± 0.4 ; 0.4    | 12-20-02           | 286                      | 4.1 ± 0.5 ; 0.9 | 0.1 ± 0.4 ; 0.4    |
| 06-28-02           | 327                      | 3.0 ± 0.4 ; 0.7 | -                  | 12-27-02           | 282                      | 2.8 ± 0.4 ; 0.6 | -                  |
| 2nd Qtr. Mean±s.d. |                          | 1.8 ± 0.4       | 0.1 ± 0.3          | 4th Qtr. Mean±s.d. |                          | 3.0 ± 0.9       | 0.1 ± 0.3          |

<sup>a</sup> Volume based on a two week collection period.

NOTE: Several ODCM-required LLDs were changed in September 2002.

# QUAD CITIES

Table 1. Airborne Particulates and Iodine Cartridges  
 Collection: Airborne Particulates - Continuous; weekly exchange  
 Iodine Cartridges - Continuous; biweekly exchange  
 Required LLD: 0.01 pCi/m<sup>3</sup> for Gross Beta and 0.07 pCi/m<sup>3</sup> for I-131  
 Units: 10<sup>-2</sup> pCi/m<sup>3</sup>

| Q-04 Nitrin        |                          |                 |                    |                    |                          |                 |                    |
|--------------------|--------------------------|-----------------|--------------------|--------------------|--------------------------|-----------------|--------------------|
| Date Collected     | Volume (m <sup>3</sup> ) | Gross Beta      | I-131 <sup>a</sup> | Date Collected     | Volume (m <sup>3</sup> ) | Gross Beta      | I-131 <sup>a</sup> |
| 01-04-02           | 282                      | 3.3 ± 0.4 ; 0.7 | 0.4 ± 0.4 ; 0.4    | 07-05-02           | 287                      | 2.4 ± 0.3 ; 0.5 | 0.3 ± 0.4 ; 0.4    |
| 01-11-02           | 286                      | 4.0 ± 0.4 ; 0.8 | -                  | 07-12-02           | 274                      | 2.0 ± 0.3 ; 0.5 | -                  |
| 01-18-02           | 289                      | 2.5 ± 0.3 ; 0.6 | -0.3 ± 0.5 ; 0.5   | 07-19-02           | 294                      | 3.0 ± 0.4 ; 0.7 | 0.2 ± 0.3 ; 0.4    |
| 01-25-02           | 280                      | 3.5 ± 0.4 ; 0.7 | -                  | 07-26-02           | 278                      | 2.5 ± 0.4 ; 0.6 | -                  |
| 02-01-02           | 283                      | 2.2 ± 0.3 ; 0.5 | 0.1 ± 0.5 ; 0.5    | 08-02-02           | 288                      | 2.9 ± 0.3 ; 0.6 | 0.2 ± 0.3 ; 0.3    |
| 02-08-02           | 285                      | 5.5 ± 0.4 ; 1.1 | -                  | 08-09-02           | 282                      | 1.9 ± 0.4 ; 0.5 | -                  |
| 02-15-02           | 286                      | 2.8 ± 0.3 ; 0.6 | 0.9 ± 0.5 ; 0.5    | 08-16-02           | 283                      | 3.4 ± 0.4 ; 0.7 | 0.8 ± 0.4 ; 0.4    |
| 02-22-02           | 286                      | 1.3 ± 0.3 ; 0.4 | -                  | 08-23-02           | 286                      | 1.6 ± 0.3 ; 0.4 | -                  |
| 03-01-02           | 289                      | 2.2 ± 0.4 ; 0.5 | -0.2 ± 0.5 ; 0.5   | 08-30-02           | 285                      | 2.1 ± 0.4 ; 0.5 | -0.4 ± 0.4 ; 0.4   |
| 03-08-02           | 281                      | 3.3 ± 0.4 ; 0.7 | -                  | 09-06-02           | 284                      | 2.9 ± 0.3 ; 0.6 | -                  |
| 03-15-02           | 285                      | 3.1 ± 0.4 ; 0.7 | 1.4 ± 0.5 ; 0.5    | 09-13-02           | 286                      | 3.7 ± 0.4 ; 0.8 | -0.5 ± 0.3 ; 0.3   |
| 03-22-02           | 286                      | 2.3 ± 0.3 ; 0.5 | -                  | 09-21-02           | 285                      | 2.8 ± 0.3 ; 0.6 | -                  |
| 03-29-02           | 285                      | 2.9 ± 0.4 ; 0.7 | 0.3 ± 0.5 ; 0.5    | 09-27-02           | 285                      | 2.5 ± 0.3 ; 0.6 | 0.2 ± 0.4 ; 0.4    |
| 1st Qtr. Mean±s.d. |                          | 3.0 ± 1.0       | 0.4 ± 0.6          | 3rd Qtr. Mean±s.d. |                          | 2.6 ± 0.6       | 0.1 ± 0.4          |
| 04-05-02           | 283                      | 1.2 ± 0.3 ; 0.4 | -                  | 10-04-02           | 284                      | 3.3 ± 0.4 ; 0.7 | -                  |
| 04-12-02           | 283                      | 2.2 ± 0.3 ; 0.5 | -0.3 ± 0.4 ; 0.4   | 10-12-02           | 327                      | 2.5 ± 0.4 ; 0.6 | 0.1 ± 0.2 ; 0.2    |
| 04-19-02           | 286                      | 2.3 ± 0.4 ; 0.6 | -                  | 10-18-02           | 242                      | 2.4 ± 0.4 ; 0.6 | -                  |
| 04-26-02           | 287                      | 2.0 ± 0.3 ; 0.5 | -0.7 ± 0.4 ; 0.4   | 10-25-02           | 287                      | 2.0 ± 0.3 ; 0.5 | -0.0 ± 0.4 ; 0.4   |
| 05-03-02           | 284                      | 1.3 ± 0.3 ; 0.4 | -                  | 11-02-02           | 322                      | 2.6 ± 0.3 ; 0.6 | -                  |
| 05-10-02           | 288                      | 1.9 ± 0.3 ; 0.5 | 0.1 ± 0.4 ; 0.4    | 11-09-02           | 288                      | 5.5 ± 0.5 ; 1.1 | -0.1 ± 0.3 ; 0.3   |
| 05-17-02           | 286                      | 1.8 ± 0.3 ; 0.5 | -                  | 11-15-02           | 251                      | 3.2 ± 0.5 ; 0.7 | -                  |
| 05-24-02           | 286                      | 1.9 ± 0.3 ; 0.5 | -0.1 ± 0.5 ; 0.5   | 11-22-02           | 282                      | 2.2 ± 0.4 ; 0.5 | 0.0 ± 0.4 ; 0.4    |
| 05-31-02           | 286                      | 1.9 ± 0.3 ; 0.4 | -                  | 11-30-02           | 325                      | 2.0 ± 0.3 ; 0.5 | -                  |
| 06-07-02           | 286                      | 1.5 ± 0.3 ; 0.4 | -0.7 ± 0.4 ; 0.4   | 12-06-02           | 244                      | 2.6 ± 0.4 ; 0.6 | 0.7 ± 0.4 ; 0.4    |
| 06-14-02           | 277                      | 1.7 ± 0.3 ; 0.4 | -                  | 12-13-02           | 287                      | 4.6 ± 0.4 ; 0.9 | -                  |
| 06-20-02           | 250                      | 2.3 ± 0.4 ; 0.6 | -0.0 ± 0.5 ; 0.5   | 12-20-02           | 291                      | 3.7 ± 0.4 ; 0.8 | -0.3 ± 0.4 ; 0.4   |
| 06-28-02           | 327                      | 3.0 ± 0.4 ; 0.6 | -                  | 12-27-02           | 282                      | 2.7 ± 0.4 ; 0.6 | -                  |
| 2nd Qtr. Mean±s.d. |                          | 1.9 ± 0.5       | -0.3 ± 0.3         | 4th Qtr. Mean±s.d. |                          | 3.0 ± 1.0       | 0.1 ± 0.4          |

<sup>a</sup> Volume based on a two week collection period.

NOTE: Several ODCM-required LLDs were changed in September 2002.

# QUAD CITIES

Table 1. Airborne Particulates and Iodine Cartridges  
Collection: Airborne Particulates - Continuous; weekly exchange  
Iodine Cartridges - Continuous; biweekly exchange  
Required LLD: 0.01 pCi/m<sup>3</sup> for Gross Beta and 0.07 pCi/m<sup>3</sup> for I-131  
Units: 10<sup>-2</sup> pCi/m<sup>3</sup>

| Q-07 (C) Clinton   |                          |                 |                    |                    |                          |                 |                    |
|--------------------|--------------------------|-----------------|--------------------|--------------------|--------------------------|-----------------|--------------------|
| Date Collected     | Volume (m <sup>3</sup> ) | Gross Beta      | I-131 <sup>a</sup> | Date Collected     | Volume (m <sup>3</sup> ) | Gross Beta      | I-131 <sup>a</sup> |
| 01-04-02           | 291                      | 3.4 ± 0.4 ; 0.7 | -0.9 ± 0.6 ; 0.6   | 07-05-02           | 300                      | 3.0 ± 0.3 ; 0.6 | -0.1 ± 0.5 ; 0.5   |
| 01-11-02           | 284                      | 3.8 ± 0.4 ; 0.8 | -                  | 07-12-02           | 273                      | 2.4 ± 0.3 ; 0.5 | -                  |
| 01-18-02           | 283                      | 3.2 ± 0.4 ; 0.7 | 0.1 ± 0.5 ; 0.5    | 07-19-02           | 287                      | 3.6 ± 0.4 ; 0.8 | -0.3 ± 0.4 ; 0.4   |
| 01-25-02           | 287                      | 3.6 ± 0.4 ; 0.7 | -                  | 07-27-02           | 324                      | 2.5 ± 0.3 ; 0.6 | -                  |
| 02-02-02           | 318                      | 2.6 ± 0.3 ; 0.6 | 0.2 ± 0.5 ; 0.5    | 08-02-02           | 240                      | 3.1 ± 0.4 ; 0.7 | -0.3 ± 0.4 ; 0.4   |
| 02-09-02           | 289                      | 6.0 ± 0.5 ; 1.2 | -                  | 08-09-02           | 284                      | 2.1 ± 0.4 ; 0.5 | -                  |
| 02-16-02           | 279                      | 2.1 ± 0.3 ; 0.5 | -0.8 ± 0.5 ; 0.5   | 08-16-02           | 206 <sup>b</sup>         | 3.7 ± 0.5 ; 0.8 | -0.4 ± 0.5 ; 0.5   |
| 02-23-02           | 292                      | 1.7 ± 0.3 ; 0.5 | -                  | 08-23-02           | 279                      | 1.9 ± 0.3 ; 0.5 | -                  |
| 03-01-02           | 237                      | 2.1 ± 0.4 ; 0.6 | 0.1 ± 0.5 ; 0.5    | 08-31-02           | 327                      | 2.7 ± 0.4 ; 0.6 | 0.5 ± 0.3 ; 0.3    |
| 03-08-02           | 283                      | 3.2 ± 0.4 ; 0.7 | -                  | 09-07-02           | 288                      | 3.1 ± 0.4 ; 0.7 | -                  |
| 03-15-02           | 298                      | 3.4 ± 0.4 ; 0.7 | 0.2 ± 0.3 ; 0.3    | 09-14-02           | 272                      | 3.5 ± 0.4 ; 0.8 | -0.5 ± 0.4 ; 0.4   |
| 03-22-02           | 284                      | 2.7 ± 0.3 ; 0.6 | -                  | 09-21-02           | 294                      | 3.0 ± 0.3 ; 0.6 | -                  |
| 03-29-02           | 279                      | 2.9 ± 0.4 ; 0.7 | -0.4 ± 0.5 ; 0.5   | 09-27-02           | 281                      | 2.4 ± 0.3 ; 0.5 | 0.2 ± 0.3 ; 0.3    |
| 1st Qtr. Mean±s.d. |                          | 3.1 ± 1.1       | -0.2 ± 0.5         | 3rd Qtr. Mean±s.d. |                          | 2.8 ± 0.6       | -0.1 ± 0.4         |
| 04-05-02           | 292                      | 1.9 ± 0.4 ; 0.5 | -                  | 10-05-02           | 294                      | 3.1 ± 0.3 ; 0.7 | -                  |
| 04-12-02           | 285                      | 2.8 ± 0.3 ; 0.6 | 0.1 ± 0.5 ; 0.5    | 10-12-02           | 282                      | 3.3 ± 0.4 ; 0.7 | 0.3 ± 0.4 ; 0.4    |
| 04-19-02           | 282                      | 2.6 ± 0.4 ; 0.6 | -                  | 10-18-02           | 280                      | 2.5 ± 0.4 ; 0.6 | -                  |
| 04-26-02           | 285                      | 2.0 ± 0.3 ; 0.5 | 0.3 ± 0.5 ; 0.5    | 10-25-02           | 245                      | 1.9 ± 0.4 ; 0.5 | 0.0 ± 0.4 ; 0.4    |
| 05-03-02           | 284                      | 1.7 ± 0.3 ; 0.4 | -                  | 11-01-02           | 289                      | 3.6 ± 0.4 ; 0.7 | -                  |
| 05-10-02           | 316                      | 1.8 ± 0.3 ; 0.4 | -0.0 ± 0.4 ; 0.4   | 11-08-02           | 280                      | 6.3 ± 0.5 ; 1.2 | 0.2 ± 0.4 ; 0.4    |
| 05-17-02           | 254                      | 1.5 ± 0.4 ; 0.5 | -                  | 11-15-02           | 284                      | 3.7 ± 0.4 ; 0.8 | -                  |
| 05-24-02           | 285                      | 1.7 ± 0.3 ; 0.4 | -0.2 ± 0.4 ; 0.4   | 11-22-02           | 286                      | 2.3 ± 0.4 ; 0.6 | 0.2 ± 0.4 ; 0.4    |
| 05-31-02           | 280                      | 2.1 ± 0.3 ; 0.5 | -                  | 11-30-02           | 319                      | 2.3 ± 0.4 ; 0.5 | -                  |
| 06-07-02           | 283                      | 1.7 ± 0.3 ; 0.5 | 0.3 ± 0.4 ; 0.4    | 12-06-02           | 251                      | 3.0 ± 0.4 ; 0.7 | -0.3 ± 0.4 ; 0.4   |
| 06-14-02           | 280                      | 2.0 ± 0.3 ; 0.5 | -                  | 12-15-02           | 361                      | 4.9 ± 0.4 ; 1.0 | -                  |
| 06-21-02           | 282                      | 2.2 ± 0.4 ; 0.5 | 0.0 ± 0.5 ; 0.5    | 12-21-02           | 254                      | 3.2 ± 0.4 ; 0.7 | 0.0 ± 0.4 ; 0.4    |
| 06-28-02           | 285                      | 2.7 ± 0.4 ; 0.6 | -                  | 12-27-02           | 237                      | 2.6 ± 0.4 ; 0.6 | -                  |
| 2nd Qtr. Mean±s.d. |                          | 2.1 ± 0.4       | 0.1 ± 0.2          | 4th Qtr. Mean±s.d. |                          | 3.3 ± 1.2       | 0.1 ± 0.2          |

<sup>a</sup> Volume based on a two week collection period.

<sup>b</sup> Volume low due to power outage.

<sup>c</sup> Volume slightly low due recent power restoration.

NOTE: Several ODCM-required LLDs were changed in September 2002.

# QUAD CITIES

Table 2. Airborne Particulates

Collection: Quarterly composites of weekly collections

ODCM-Required LLDs: Cs-134 = 0.01, Cs-137 = 0.01 pCi/m<sup>3</sup>

Units: 10<sup>-4</sup> pCi/m<sup>3</sup>

| Sample Description and Concentration |                     |                     |                     |                     |
|--------------------------------------|---------------------|---------------------|---------------------|---------------------|
| <u>Q-01 Onsite No. 1</u>             |                     |                     |                     |                     |
| 2002<br>Collection<br>Period         | 1st Qtr.            | 2nd Qtr.            | 3rd Qtr.            | 4th Qtr.            |
| Lab Code                             | QAP-2788            | QAP-4999            | QAP-7204            | QAP-8900            |
| Volume                               | 3,700               | 3,712               | 3,703               | 3,714               |
| Mn-54                                | -1.9 ± 8.0 ; 8.0    | -1.3 ± 4.1 ; 4.2    | 1.5 ± 5.8 ; 5.9     | -2.4 ± 6.7 ; 6.7    |
| Fe-59                                | -12.3 ± 12.9 ; 13.0 | 2.4 ± 8.8 ; 8.8     | -15.7 ± 11.0 ; 11.4 | -9.7 ± 10.2 ; 10.4  |
| Co-58                                | -5.7 ± 3.7 ; 3.8    | -0.8 ± 3.9 ; 3.9    | -1.5 ± 4.6 ; 4.6    | 5.4 ± 4.2 ; 4.3     |
| Co-60                                | -6.1 ± 7.3 ; 7.4    | 0.9 ± 6.2 ; 6.2     | -0.4 ± 7.0 ; 7.0    | 5.3 ± 4.2 ; 4.3     |
| Zn-65                                | 3.1 ± 14.7 ; 14.7   | -17.8 ± 10.1 ; 10.6 | 0.8 ± 11.0 ; 11.0   | -21.8 ± 13.2 ; 13.8 |
| Zr/Nb-95                             | 10.3 ± 10.2 ; 10.4  | -8.6 ± 10.5 ; 10.6  | -1.2 ± 5.2 ; 5.2    | 0.2 ± 4.8 ; 4.8     |
| Cs-134                               | 0.4 ± 5.8 ; 5.8     | 1.9 ± 5.1 ; 5.1     | 2.0 ± 6.7 ; 6.7     | 1.3 ± 6.6 ; 6.6     |
| Cs-137                               | 0.3 ± 4.9 ; 4.9     | 4.2 ± 4.9 ; 4.9     | -5.1 ± 6.2 ; 6.2    | 4.2 ± 6.1 ; 6.1     |
| Ba/La-140                            | 38.6 ± 4.6 ; 8.3    | -15.1 ± 7.9 ; 8.4   | -63.5 ± 7.6 ; 13.6  | -32.9 ± 6.5 ; 8.8   |
| <u>Q-02 Onsite No. 2</u>             |                     |                     |                     |                     |
| 2002<br>Collection<br>Period         | 1st Qtr.            | 2nd Qtr.            | 3rd Qtr.            | 4th Qtr.            |
| Lab Code                             | QAP-2789            | QAP-5000            | QAP-7205            | QAP-8901            |
| Volume                               | 3,709               | 3,711               | 2,947               | 3,713               |
| Mn-54                                | -0.4 ± 6.9 ; 6.9    | -0.6 ± 4.6 ; 4.6    | -6.2 ± 7.9 ; 7.9    | -0.3 ± 5.5 ; 5.5    |
| Fe-59                                | -10.7 ± 10.8 ; 10.9 | 9.8 ± 8.2 ; 8.4     | 10.6 ± 9.4 ; 9.6    | 1.2 ± 10.1 ; 10.1   |
| Co-58                                | 1.5 ± 5.2 ; 5.2     | -0.8 ± 4.5 ; 4.5    | 3.6 ± 5.6 ; 5.6     | -4.8 ± 4.3 ; 4.4    |
| Co-60                                | 12.3 ± 8.7 ; 9.0    | 4.5 ± 5.9 ; 5.9     | -0.7 ± 7.1 ; 7.1    | 6.3 ± 6.1 ; 6.2     |
| Zn-65                                | -17.3 ± 14.4 ; 14.7 | -4.1 ± 10.3 ; 10.3  | -1.0 ± 13.8 ; 13.8  | 1.6 ± 12.9 ; 12.9   |
| Zr/Nb-95                             | 3.2 ± 6.3 ; 6.3     | -5.2 ± 4.2 ; 4.3    | -10.6 ± 6.8 ; 7.0   | -4.7 ± 4.8 ; 4.9    |
| Cs-134                               | 2.0 ± 6.1 ; 6.1     | 0.6 ± 4.5 ; 4.5     | 2.9 ± 6.4 ; 6.4     | 2.7 ± 6.3 ; 6.3     |
| Cs-137                               | -0.6 ± 6.0 ; 6.0    | 7.4 ± 6.5 ; 6.6     | -3.0 ± 7.8 ; 7.8    | -1.0 ± 4.7 ; 4.7    |
| Ba/La-140                            | 23.6 ± 7.7 ; 8.8    | -142.7 ± 8.6 ; 26.8 | 20.5 ± 10.3 ; 10.9  | -21.9 ± 4.4 ; 5.9   |

NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

Table 2. Airborne Particulates

Collection: Quarterly composites of weekly collections

ODCM-Required LLDs: Cs-134 = 0.01, Cs-137 = 0.01 pCi/m<sup>3</sup>

Units: 10<sup>-4</sup> pCi/m<sup>3</sup>

| Sample Description and Concentration |                    |                     |                     |                    |
|--------------------------------------|--------------------|---------------------|---------------------|--------------------|
| <u>Q-03 Onsite No. 3</u>             |                    |                     |                     |                    |
| 2002<br>Collection<br>Period         | 1st Qtr.           | 2nd Qtr.            | 3rd Qtr.            | 4th Qtr.           |
| Lab Code                             | QAP-2790           | QAP-5001            | QAP-7206            | QAP-8902           |
| Volume                               | 3,705              | 3,716               | 3,703               | 3,709              |
| Mn-54                                | 0.8 ± 6.4 ; 6.4    | -0.3 ± 5.5 ; 5.5    | 2.4 ± 4.2 ; 4.2     | 1.2 ± 3.9 ; 3.9    |
| Fe-59                                | 7.7 ± 8.7 ; 8.8    | 0.9 ± 7.8 ; 7.8     | 19.3 ± 7.2 ; 8.0    | -17.1 ± 9.2 ; 9.6  |
| Co-58                                | -6.3 ± 6.7 ; 6.8   | -8.4 ± 5.0 ; 5.2    | 1.2 ± 4.2 ; 4.2     | -5.0 ± 5.3 ; 5.4   |
| Co-60                                | 4.6 ± 6.8 ; 6.8    | 2.1 ± 4.6 ; 4.7     | -4.8 ± 5.8 ; 5.9    | 2.1 ± 6.4 ; 6.4    |
| Zn-65                                | 20.3 ± 11.2 ; 11.8 | -6.3 ± 17.3 ; 17.3  | -13.0 ± 13.4 ; 13.6 | -6.5 ± 14.7 ; 14.7 |
| Zr/Nb-95                             | 6.9 ± 4.7 ; 4.9    | -6.6 ± 13.1 ; 13.2  | -6.2 ± 5.6 ; 5.7    | 6.0 ± 5.3 ; 5.4    |
| Cs-134                               | -2.4 ± 7.5 ; 7.5   | -1.4 ± 6.3 ; 6.4    | 1.4 ± 6.1 ; 6.1     | 3.9 ± 7.1 ; 7.1    |
| Cs-137                               | 5.1 ± 5.3 ; 5.4    | 1.7 ± 5.2 ; 5.2     | -0.7 ± 6.1 ; 6.1    | -0.7 ± 6.1 ; 6.1   |
| Ba/La-140                            | 51.7 ± 5.4 ; 10.7  | 2.5 ± 5.9 ; 5.9     | 27.8 ± 6.5 ; 8.2    | -44.0 ± 6.2 ; 10.0 |
| <u>Q-04 Nitrin</u>                   |                    |                     |                     |                    |
| 2002<br>Collection<br>Period         | 1st Qtr.           | 2nd Qtr.            | 3rd Qtr.            | 4th Qtr.           |
| Lab Code                             | QAP-2791           | QAP-5002            | QAP-7207            | QAP-8903           |
| Volume                               | 3,709              | 3,716               | 3,703               | 3,719              |
| Mn-54                                | 6.1 ± 5.9 ; 6.0    | 0.4 ± 6.1 ; 6.1     | -8.6 ± 6.6 ; 6.8    | -1.5 ± 5.3 ; 5.3   |
| Fe-59                                | -1.5 ± 12.2 ; 12.2 | 7.1 ± 10.5 ; 10.6   | -6.0 ± 9.1 ; 9.1    | 13.4 ± 11.5 ; 11.8 |
| Co-58                                | -4.3 ± 6.9 ; 7.0   | 8.0 ± 6.6 ; 6.8     | 4.5 ± 4.7 ; 4.8     | -5.7 ± 4.7 ; 4.8   |
| Co-60                                | 4.6 ± 6.8 ; 6.8    | 2.0 ± 9.1 ; 9.1     | 3.7 ± 5.4 ; 5.5     | 8.0 ± 6.7 ; 6.8    |
| Zn-65                                | -7.1 ± 12.1 ; 12.2 | -13.8 ± 18.6 ; 18.8 | 0.8 ± 11.4 ; 11.4   | 17.8 ± 13.0 ; 13.4 |
| Zr/Nb-95                             | 4.4 ± 6.9 ; 7.0    | -1.6 ± 7.7 ; 7.7    | -11.0 ± 12.0 ; 12.1 | 4.9 ± 5.2 ; 5.3    |
| Cs-134                               | 6.2 ± 6.2 ; 6.3    | -3.6 ± 8.8 ; 8.9    | -0.5 ± 5.7 ; 5.7    | 3.5 ± 5.9 ; 6.0    |
| Cs-137                               | -1.2 ± 5.9 ; 5.9   | 0.7 ± 6.3 ; 6.3     | 0.1 ± 5.0 ; 5.0     | 4.4 ± 5.3 ; 5.3    |
| Ba/La-140                            | 38.8 ± 4.6 ; 8.3   | -82.5 ± 10.1 ; 17.8 | 18.1 ± 6.2 ; 6.9    | 28.8 ± 6.5 ; 8.3   |

NOTE: Several ODCM-required LLDs were changed in September 2002.

# QUAD CITIES

Table 2. Airborne Particulates

Collection: Quarterly composites of weekly collections

ODCM-Required LLDs: Cs-134 = 0.01, Cs-137 = 0.01 pCi/m<sup>3</sup>

Units: 10<sup>-4</sup> pCi/m<sup>3</sup>

| Sample Description and Concentration |                   |                   |                    |                     |
|--------------------------------------|-------------------|-------------------|--------------------|---------------------|
| <u>Q-07 (C) Clinton</u>              |                   |                   |                    |                     |
| 2002<br>Collection<br>Period         | 1st Qtr.          | 2nd Qtr.          | 3rd Qtr.           | 4th Qtr.            |
| Lab Code                             | QAP-2792          | QAP-5003          | QAP-7208           | QAP-8904            |
| Volume                               | 3,712             | 3,699             | 3,662              | 3,669               |
| Mn-54                                | -4.2 ± 6.1 ; 6.2  | 2.6 ± 4.1 ; 4.1   | -8.6 ± 7.6 ; 7.8   | 1.9 ± 5.4 ; 5.4     |
| Fe-59                                | 30.6 ± 9.9 ; 11.3 | 7.3 ± 7.7 ; 7.8   | 7.2 ± 9.3 ; 9.4    | -41.9 ± 12.3 ; 14.4 |
| Co-58                                | 3.6 ± 5.5 ; 5.6   | 2.6 ± 4.2 ; 4.2   | -2.5 ± 5.3 ; 5.3   | 0.3 ± 4.6 ; 4.6     |
| Co-60                                | -6.0 ± 7.3 ; 7.3  | -2.2 ± 4.4 ; 4.4  | 1.9 ± 4.9 ; 4.9    | 6.2 ± 4.5 ; 4.7     |
| Zn-65                                | 4.1 ± 12.5 ; 12.5 | 7.3 ± 12.7 ; 12.8 | 11.5 ± 11.9 ; 12.0 | -17.2 ± 14.4 ; 14.7 |
| Zr/Nb-95                             | -1.0 ± 5.3 ; 5.3  | 1.9 ± 4.6 ; 4.6   | -5.9 ± 5.2 ; 5.4   | 3.5 ± 5.6 ; 5.6     |
| Cs-134                               | 2.0 ± 6.1 ; 6.1   | 4.3 ± 4.1 ; 4.2   | 4.9 ± 5.7 ; 5.8    | -2.0 ± 6.0 ; 6.0    |
| Cs-137                               | 3.4 ± 6.8 ; 6.9   | -2.2 ± 3.6 ; 3.6  | 2.9 ± 5.1 ; 5.1    | -0.7 ± 6.2 ; 6.2    |
| Ba/La-140                            | -4.3 ± 9.5 ; 9.5  | -25.4 ± 5.5 ; 7.1 | 7.9 ± 5.9 ; 6.0    | 49.9 ± 7.3 ; 11.5   |

NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

Table 3. Milk

|                         |  |
|-------------------------|--|
| Collection:             | Biweekly (May - October)<br>Monthly (November - April)   |
| ODCM-<br>Required LLDs: | I-131 = 0.5 pCi/L (May - October), I-131 = 5 pCi/L (November - April),<br>Cs-134 = 15, Cs-137 = 18, Ba/La-140 = 15 pCi/L |
| Other LLDs:             | Mn-54 = 10; Fe-59 = 15; Co-58, Co-60 = 10; Zn-65 = 15; Zr/Nb-95 = 10 pCi/L   |
| Units:                  | pCi/L  |

Sample Description and Concentration

Q-26 Bill Stanley Dairy

| Date<br>Collected | 01-04-02            | 02-01-02            | 03-01-02            | 04-05-02            |
|-------------------|---------------------|---------------------|---------------------|---------------------|
| Lab Code          | QMI-76              | QMI-587             | QMI-1343            | QMI-2118,9          |
| I-131             | -0.15 ± 0.16 ; 0.16 | 0.02 ± 0.26 ; 0.26  | -0.06 ± 0.21 ; 0.21 | -0.15 ± 0.23 ; 0.23 |
| Mn-54             | -0.3 ± 4.7 ; 4.7    | 1.3 ± 2.6 ; 2.6     | -2.2 ± 3.7 ; 3.7    | -0.5 ± 2.1 ; 2.1    |
| Fe-59             | 9.9 ± 10.3 ; 10.4   | 0.7 ± 5.3 ; 5.3     | 1.6 ± 7.2 ; 7.2     | -2.3 ± 3.7 ; 3.7    |
| Co-58             | 0.6 ± 4.5 ; 4.5     | 0.6 ± 2.2 ; 2.2     | -3.2 ± 3.6 ; 3.6    | -0.6 ± 1.9 ; 1.9    |
| Co-60             | -1.9 ± 6.6 ; 6.6    | -0.7 ± 3.5 ; 3.5    | 0.8 ± 4.7 ; 4.7     | 2.0 ± 2.5 ; 2.5     |
| Zn-65             | 7.5 ± 11.3 ; 11.4   | 7.6 ± 6.0 ; 6.1     | 7.1 ± 9.7 ; 9.7     | -0.7 ± 5.0 ; 5.0    |
| Zr/Nb-95          | -3.4 ± 4.6 ; 4.7    | 0.5 ± 2.7 ; 2.7     | -3.8 ± 3.6 ; 3.7    | -1.7 ± 2.0 ; 2.0    |
| Cs-134            | 4.7 ± 5.4 ; 5.5     | 1.5 ± 2.3 ; 2.3     | -3.1 ± 4.2 ; 4.2    | 1.7 ± 2.5 ; 2.5     |
| Cs-137            | 5.3 ± 5.1 ; 5.1     | 4.3 ± 3.0 ; 3.0     | 3.5 ± 3.9 ; 4.0     | 0.8 ± 2.4 ; 2.4     |
| Ba/La-140         | -0.5 ± 5.3 ; 5.3    | 3.7 ± 2.3 ; 2.4     | 8.7 ± 3.4 ; 3.6     | -2.9 ± 2.1 ; 2.1    |
| Date<br>Collected | 05-03-02            | 05-17-02            | 05-31-02            | 06-14-02            |
| Lab Code          | QMI-2978            | QMI-3276            | QMI-3526            | QMI-3950            |
| I-131             | 0.16 ± 0.17 ; 0.17  | -0.21 ± 0.21 ; 0.21 | 0.11 ± 0.22 ; 0.22  | 0.07 ± 0.26 ; 0.26  |
| Mn-54             | 1.1 ± 2.2 ; 2.2     | -0.4 ± 2.6 ; 2.6    | -2.3 ± 2.1 ; 2.1    | 0.2 ± 1.0 ; 1.0     |
| Fe-59             | 1.8 ± 4.8 ; 4.8     | 0.9 ± 5.8 ; 5.8     | -1.8 ± 4.7 ; 4.7    | 0.1 ± 2.3 ; 2.3     |
| Co-58             | 1.7 ± 2.1 ; 2.1     | -0.7 ± 3.3 ; 3.3    | -1.1 ± 2.1 ; 2.1    | 1.0 ± 1.0 ; 1.0     |
| Co-60             | -0.4 ± 2.3 ; 2.3    | 0.5 ± 3.8 ; 3.8     | -1.4 ± 2.3 ; 2.4    | -0.0 ± 1.1 ; 1.1    |
| Zn-65             | -3.6 ± 5.2 ; 5.3    | 3.8 ± 6.2 ; 6.2     | -3.6 ± 5.0 ; 5.1    | -1.2 ± 2.4 ; 2.4    |
| Zr/Nb-95          | 1.5 ± 2.0 ; 2.0     | -0.8 ± 3.1 ; 3.1    | 0.6 ± 1.9 ; 1.9     | -2.3 ± 1.1 ; 1.1    |
| Cs-134            | 0.9 ± 2.5 ; 2.5     | 2.6 ± 3.4 ; 3.4     | -2.2 ± 2.3 ; 2.4    | 0.0 ± 1.1 ; 1.1     |
| Cs-137            | 1.5 ± 2.7 ; 2.7     | -0.1 ± 3.5 ; 3.5    | 1.8 ± 2.3 ; 2.4     | 1.8 ± 1.1 ; 1.2     |
| Ba/La-140         | -1.9 ± 2.3 ; 2.3    | 4.5 ± 3.9 ; 4.0     | -1.1 ± 1.7 ; 1.7    | -11.7 ± 1.0 ; 1.9   |

NOTE: Several ODCM-required LLDs were changed in September 2002.

## QUAD CITIES

Table 3. Milk

|                         |  |
|-------------------------|--|
| Collection:             | Biweekly (May - October)<br>Monthly (November - April)   |
| ODCM-<br>Required LLDs: | I-131 = 0.5 pCi/L (May - October), I-131 = 5 pCi/L (November - April),<br>Cs-134 = 15, Cs-137 = 18, Ba/La-140 = 15 pCi/L |
| Other LLDs:             | Mn-54 = 10; Fe-59 = 15; Co-58, Co-60 = 10; Zn-65 = 15; Zr/Nb-95 = 10 pCi/L   |
| Units:                  | pCi/L  |

## Sample Description and Concentration

Q-26 Bill Stanley Dairy

| Date<br>Collected | 06-28-02            | 07-12-02            | 07-26-02            | 08-09-02            |
|-------------------|---------------------|---------------------|---------------------|---------------------|
| Lab Code          | QMI-4303            | QMI-4636            | QMI-5015            | QMI-5298            |
| I-131             | 0.01 ± 0.19 ; 0.19  | -0.01 ± 0.17 ; 0.17 | -0.21 ± 0.31 ; 0.31 | 0.06 ± 0.19 ; 0.19  |
| Mn-54             | 0.4 ± 4.1 ; 4.1     | 1.1 ± 2.2 ; 2.2     | 0.5 ± 4.8 ; 4.8     | -3.3 ± 4.4 ; 4.4    |
| Fe-59             | -5.9 ± 8.6 ; 8.6    | 2.9 ± 4.8 ; 4.8     | 0.7 ± 9.7 ; 9.7     | 6.3 ± 8.3 ; 8.4     |
| Co-58             | -6.4 ± 3.9 ; 4.0    | -1.7 ± 2.2 ; 2.2    | 1.8 ± 4.0 ; 4.0     | -0.8 ± 4.0 ; 4.0    |
| Co-60             | 0.2 ± 5.1 ; 5.1     | -0.0 ± 2.6 ; 2.6    | 4.1 ± 4.5 ; 4.5     | 0.2 ± 5.6 ; 5.6     |
| Zn-65             | -12.8 ± 9.2 ; 9.3   | -1.4 ± 5.1 ; 5.1    | -8.6 ± 9.4 ; 9.5    | -9.8 ± 8.4 ; 8.5    |
| Zr/Nb-95          | -6.4 ± 3.6 ; 3.7    | -0.6 ± 2.2 ; 2.2    | 2.4 ± 4.3 ; 4.3     | 2.2 ± 3.9 ; 3.9     |
| Cs-134            | -1.1 ± 3.4 ; 3.4    | 1.1 ± 2.3 ; 2.3     | -0.3 ± 4.9 ; 4.9    | -1.3 ± 4.9 ; 4.9    |
| Cs-137            | 1.1 ± 3.6 ; 3.6     | 1.1 ± 2.7 ; 2.7     | 7.0 ± 5.1 ; 5.2     | -0.8 ± 4.2 ; 4.2    |
| Ba/La-140         | -10.9 ± 4.3 ; 4.6   | 5.8 ± 2.5 ; 2.6     | -0.1 ± 5.0 ; 5.0    | -12.6 ± 6.1 ; 6.3   |
| Date<br>Collected | 08-23-02            | 09-06-02            | 09-20-02            | 10-04-02            |
| Lab Code          | QMI-5573            | QMI-5810            | QMI-6230            | QMI-6576,7          |
| I-131             | -0.14 ± 0.15 ; 0.15 | 0.20 ± 0.25 ; 0.25  | 0.17 ± 0.26 ; 0.27  | -0.06 ± 0.15 ; 0.15 |
| Mn-54             | -4.3 ± 4.2 ; 4.2    | 0.3 ± 2.8 ; 2.8     | -0.5 ± 2.4 ; 2.4    | 1.3 ± 2.7 ; 2.8     |
| Fe-59             | -3.7 ± 10.9 ; 10.9  | 1.4 ± 5.6 ; 5.6     | -1.3 ± 6.7 ; 6.7    | 1.9 ± 5.5 ; 5.5     |
| Co-58             | -4.3 ± 4.7 ; 4.7    | -0.1 ± 2.7 ; 2.7    | 0.5 ± 2.8 ; 2.8     | 0.7 ± 2.6 ; 2.6     |
| Co-60             | 6.1 ± 6.6 ; 6.7     | 0.3 ± 3.0 ; 3.0     | 2.0 ± 3.6 ; 3.6     | -2.5 ± 3.2 ; 3.2    |
| Zn-65             | 0.1 ± 14.2 ; 14.2   | -4.6 ± 6.8 ; 6.9    | 1.1 ± 7.8 ; 7.8     | -2.6 ± 6.0 ; 6.0    |
| Zr/Nb-95          | 3.4 ± 4.6 ; 4.6     | 0.6 ± 2.3 ; 2.3     | -0.4 ± 2.9 ; 2.9    | 0.2 ± 2.3 ; 2.3     |
| Cs-134            | -3.0 ± 5.9 ; 5.9    | -2.2 ± 2.9 ; 2.9    | 1.2 ± 3.4 ; 3.4     | -0.1 ± 2.7 ; 2.7    |
| Cs-137            | -1.7 ± 5.4 ; 5.4    | 1.9 ± 2.8 ; 2.8     | -0.2 ± 3.1 ; 3.1    | 1.6 ± 2.8 ; 2.8     |
| Ba/La-140         | 2.2 ± 5.1 ; 5.1     | -2.7 ± 2.3 ; 2.3    | -4.2 ± 2.9 ; 3.0    | -3.7 ± 3.2 ; 3.2    |

NOTE: Several ODCM-required LLDs were changed in September 2002.



QUAD CITIES

Table 3. Milk

|                         |  |
|-------------------------|--|
| Collection:             | Biweekly (May - October)<br>Monthly (November - April)   |
| ODCM-<br>Required LLDs: | I-131 = 0.5 pCi/L (May - October), I-131 = 5 pCi/L (November - April),<br>Cs-134 = 15, Cs-137 = 18, Ba/La-140 = 15 pCi/L |
| Other LLDs:             | Mn-54 = 10; Fe-59 = 15; Co-58, Co-60 = 10; Zn-65 = 15; Zr/Nb-95 = 10 pCi/L   |
| Units:                  | pCi/L  |

Sample Description and Concentration

Q-26 Bill Stanley Dairy

|                   |                     |                    |                     |
|-------------------|---------------------|--------------------|---------------------|
| Date<br>Collected | 10-18-02            | 11-02-02           | 12-06-02            |
| Lab Code          | QMI-7049            | QMI-7499           | QMI-8186            |
| I-131             | -0.12 ± 0.25 ; 0.25 | 0.02 ± 0.21 ; 0.21 | -0.08 ± 0.16 ; 0.16 |
| Mn-54             | 0.6 ± 3.7 ; 3.7     | 2.6 ± 3.2 ; 3.3    | -0.5 ± 1.6 ; 1.6    |
| Fe-59             | 1.6 ± 7.9 ; 7.9     | 2.0 ± 7.3 ; 7.3    | 4.8 ± 5.0 ; 5.0     |
| Co-58             | -2.6 ± 3.2 ; 3.2    | 1.2 ± 3.2 ; 3.2    | -0.1 ± 1.9 ; 1.9    |
| Co-60             | 1.6 ± 3.8 ; 3.8     | -3.4 ± 4.1 ; 4.1   | 0.7 ± 2.4 ; 2.4     |
| Zn-65             | 2.4 ± 9.5 ; 9.5     | -3.3 ± 7.8 ; 7.9   | -3.2 ± 6.5 ; 6.5    |
| Zr/Nb-95          | -1.5 ± 3.3 ; 3.3    | -0.9 ± 2.9 ; 2.9   | -3.4 ± 2.4 ; 2.4    |
| Cs-134            | 1.0 ± 4.1 ; 4.1     | -1.2 ± 4.0 ; 4.0   | -0.8 ± 2.3 ; 2.3    |
| Cs-137            | 1.2 ± 3.5 ; 3.5     | 1.2 ± 3.9 ; 3.9    | 1.3 ± 2.4 ; 2.4     |
| Ba/La-140         | 2.7 ± 2.7 ; 2.7     | 3.3 ± 3.4 ; 3.4    | -1.5 ± 2.5 ; 2.6    |

NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

Table 4. Fish, Edible Portions

Collection: Semiannually

ODCM-

Required LLDs: Mn-54 = 0.13, Fe-59 = 0.26, Co-58 = 0.13, Co-60 = 0.13, Zn-65 = 0.26, Cs-134 = 0.1, Cs-137 = 0.1 pCi/g wet weight

Other LLDs: Zr/Nb-95 = 0.20, Ba/La-140 = 0.30 pCi/g wet weight

Units:  $10^{-2}$  pCi/g wet weight

Sample Description and Concentration

Q-24 Pool #14 of Mississippi River

| Date Collected | 05-02-02         | 05-02-02         | 10-02-02         | 10-02-02         |
|----------------|------------------|------------------|------------------|------------------|
| Lab Code       | QF-2884          | QF-2885          | QF-6438          | QF-6439          |
| Type           | Freshwater Drum  | Walleye          | Channel Catfish  | Common Carp      |
| Mn-54          | 0.1 ± 0.7 ; 0.7  | -0.2 ± 0.7 ; 0.7 | -0.8 ± 0.8 ; 0.8 | 0.4 ± 0.7 ; 0.7  |
| Fe-59          | -1.2 ± 1.6 ; 1.7 | 0.3 ± 1.4 ; 1.4  | 0.4 ± 2.2 ; 2.2  | 0.2 ± 1.5 ; 1.5  |
| Co-58          | 0.8 ± 0.7 ; 0.7  | -0.6 ± 0.8 ; 0.8 | 0.2 ± 0.7 ; 0.7  | -0.2 ± 0.8 ; 0.8 |
| Co-60          | 1.1 ± 0.9 ; 0.9  | 0.2 ± 0.8 ; 0.8  | -0.4 ± 1.2 ; 1.2 | 0.5 ± 1.0 ; 1.0  |
| Zn-65          | -0.1 ± 1.8 ; 1.8 | 0.1 ± 1.9 ; 1.9  | -0.9 ± 1.9 ; 1.9 | 1.0 ± 1.8 ; 1.8  |
| Zr/Nb-95       | 0.1 ± 0.6 ; 0.6  | -1.1 ± 1.6 ; 1.6 | 0.0 ± 1.0 ; 1.0  | 0.1 ± 0.6 ; 0.6  |
| Cs-134         | 0.1 ± 0.8 ; 0.8  | 0.1 ± 0.8 ; 0.8  | -0.5 ± 0.9 ; 0.9 | 0.1 ± 1.0 ; 1.0  |
| Cs-137         | -0.7 ± 0.7 ; 0.7 | -0.6 ± 0.8 ; 0.8 | 0.3 ± 0.7 ; 0.7  | -0.0 ± 0.8 ; 0.8 |
| Ba/La-140      | 4.8 ± 0.7 ; 1.0  | 2.0 ± 0.6 ; 0.7  | -1.1 ± 0.7 ; 0.8 | 1.2 ± 0.6 ; 0.6  |

NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

Table 4. Fish, Edible Portions

Collection: Semiannually

ODCM-

Required LLDs: Mn-54 = 0.13, Fe-59 = 0.26, Co-58 = 0.13, Co-60 = 0.13, Zn-65 = 0.26, Cs-134 = 0.1, Cs-137 = 0.1 pCi/g wet weight

Other LLDs: Zr/Nb-95 = 0.20, Ba/La-140 = 0.30 pCi/g wet weight

Units:  $10^{-2}$  pCi/g wet weight

Sample Description and Concentration

Q-29 (C) Mississippi River, Upstream

| Date Collected | 05-02-02         | 05-02-02         | 10-02-02         | 10-02-02         |
|----------------|------------------|------------------|------------------|------------------|
| Lab Code       | QF-2886          | QF-2887          | QF-6436          | QF-6437          |
| Type           | Largemouth Bass  | Quillback        | River Carpsucker | Channel Catfish  |
| Mn-54          | -0.3 ± 0.6 ; 0.6 | -0.6 ± 0.7 ; 0.7 | -0.2 ± 0.9 ; 0.9 | -0.0 ± 0.9 ; 0.9 |
| Fe-59          | 0.4 ± 1.7 ; 1.7  | -0.4 ± 1.7 ; 1.7 | -0.7 ± 1.6 ; 1.6 | -0.7 ± 1.8 ; 1.8 |
| Co-58          | -0.1 ± 0.7 ; 0.7 | -0.4 ± 0.7 ; 0.7 | -0.3 ± 0.9 ; 0.9 | -0.0 ± 0.6 ; 0.6 |
| Co-60          | -0.2 ± 0.7 ; 0.7 | 0.6 ± 1.0 ; 1.0  | 0.0 ± 1.0 ; 1.0  | -0.8 ± 1.1 ; 1.1 |
| Zn-65          | 0.2 ± 2.0 ; 2.0  | 0.4 ± 1.9 ; 1.9  | -1.2 ± 1.8 ; 1.8 | 0.6 ± 1.9 ; 1.9  |
| Zr/Nb-95       | 1.3 ± 0.7 ; 0.7  | -0.1 ± 0.7 ; 0.7 | -1.1 ± 0.9 ; 0.9 | 0.3 ± 0.8 ; 0.8  |
| Cs-134         | -0.0 ± 0.8 ; 0.8 | -0.1 ± 0.9 ; 0.9 | -0.6 ± 1.0 ; 1.0 | -0.2 ± 1.0 ; 1.0 |
| Cs-137         | 0.4 ± 0.7 ; 0.7  | -0.6 ± 0.8 ; 0.8 | 0.1 ± 0.9 ; 0.9  | 0.7 ± 0.9 ; 0.9  |
| Ba/La-140      | -4.1 ± 0.8 ; 1.0 | 1.2 ± 0.7 ; 0.7  | 0.1 ± 0.9 ; 0.9  | 0.7 ± 0.9 ; 0.9  |

NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

Table 5. Bottom Sediments

Collection: Semiannually

ODCM-

Required LLDs: Cs-134 = 0.15, Cs-137 = 0.18 pCi/g dry weight

Other LLDs: Mn-54 = 0.15; Fe-59 = 0.60; Co-58,60 = 0.10; Zn-65 = 0.60; Zr/Nb-95 = 0.20;  
Ba/La = 0.60

Units:  $10^{-2}$  pCi/g dry weight

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Sample Description and Concentration

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Q-39 Downstream on Mississippi River

|                |                      |                      |
|----------------|----------------------|----------------------|
| Date Collected | 05-24-02             | 10-12-02             |
| Lab Code       | QBS-3351             | QBS-6901             |
| Mn-54          | $1.1 \pm 0.9$ ; 0.9  | $-0.6 \pm 0.5$ ; 0.6 |
| Fe-59          | $-3.4 \pm 1.9$ ; 1.9 | $-0.1 \pm 1.3$ ; 1.3 |
| Co-58          | $0.5 \pm 0.7$ ; 0.7  | $-0.8 \pm 0.5$ ; 0.5 |
| Co-60          | $0.2 \pm 1.0$ ; 1.0  | $-0.3 \pm 0.7$ ; 0.7 |
| Zn-65          | $2.3 \pm 2.3$ ; 2.4  | $-0.1 \pm 1.4$ ; 1.4 |
| Zr/Nb-95       | $-1.6 \pm 1.0$ ; 1.0 | $-0.3 \pm 0.5$ ; 0.5 |
| Cs-134         | $1.1 \pm 1.1$ ; 1.1  | $1.3 \pm 0.6$ ; 0.6  |
| Cs-137         | $6.1 \pm 1.9$ ; 2.1  | $2.8 \pm 1.2$ ; 1.3  |
| Ba/La-140      | $-3.8 \pm 1.1$ ; 1.2 | $-0.6 \pm 0.4$ ; 0.4 |

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NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

Table 6. Vegetation

|                |   |
|----------------|---|
| Collection:    | Annually  |
| ODCM-          |   |
| Required LLDs: | I-131 = 0.06, Cs-134 = 0.06, Cs-137 = 0.08  |
| Other LLDs:    | Mn-54 = 0.05; Fe-59 = 0.10; Co-58, Co-60, Zn-65 = 0.05; Zr/Nb-95 = 0.01;<br>Ba/La-140 = 0.02 pCi/g wet weight |
| Units:         | 10 <sup>-2</sup> pCi/g wet weight   |

Sample Description and Concentration

Q-Control (C) Charles Leavens

|                |                  |                  |
|----------------|------------------|------------------|
| Date Collected | 08-01-02         | 08-01-02         |
| Lab Code       | QVE-5185         | QVE-5186         |
| Type           | Onions           | Rhubarb leaves   |
| Mn-54          | 0.2 ± 0.5 ; 0.5  | -0.5 ± 0.7 ; 0.7 |
| Fe-59          | 0.1 ± 1.0 ; 1.0  | 0.4 ± 1.4 ; 1.4  |
| Co-58          | 0.0 ± 0.5 ; 0.5  | 0.3 ± 0.8 ; 0.8  |
| Co-60          | -0.1 ± 0.6 ; 0.6 | -0.3 ± 0.8 ; 0.8 |
| Zn-65          | -0.6 ± 1.2 ; 1.2 | 1.1 ± 1.7 ; 1.7  |
| Zr/Nb-95       | 0.2 ± 0.5 ; 0.5  | 0.1 ± 0.7 ; 0.7  |
| I-131          | -1.0 ± 0.6 ; 0.6 | -0.5 ± 0.5 ; 0.5 |
| Cs-134         | 0.0 ± 0.6 ; 0.6  | -0.4 ± 0.7 ; 0.7 |
| Cs-137         | 0.1 ± 0.6 ; 0.6  | 0.2 ± 0.8 ; 0.8  |
| Ba/La-140      | -0.7 ± 0.5 ; 0.5 | -0.2 ± 0.8 ; 0.8 |

Q-Quad 1 Robert Ziegler

|                |                  |                  |
|----------------|------------------|------------------|
| Date Collected | 08-01-02         | 08-01-02         |
| Lab Code       | QVE-5177         | QVE-5178         |
| Type           | Onions           | Rhubarb leaves   |
| Mn-54          | -0.2 ± 0.8 ; 0.8 | -0.1 ± 0.4 ; 0.4 |
| Fe-59          | 0.0 ± 1.8 ; 1.8  | 0.9 ± 1.0 ; 1.1  |
| Co-58          | 0.1 ± 0.6 ; 0.6  | 0.0 ± 0.5 ; 0.5  |
| Co-60          | -0.9 ± 0.8 ; 0.8 | 0.3 ± 0.5 ; 0.5  |
| Zn-65          | -0.7 ± 1.5 ; 1.5 | -1.1 ± 1.3 ; 1.3 |
| Zr/Nb-95       | 0.4 ± 0.7 ; 0.7  | -1.0 ± 0.5 ; 0.6 |
| I-131          | 0.4 ± 0.6 ; 0.6  | 0.5 ± 0.4 ; 0.4  |
| Cs-134         | -0.3 ± 0.8 ; 0.8 | -0.4 ± 0.5 ; 0.5 |
| Cs-137         | 1.2 ± 0.8 ; 0.8  | 0.6 ± 0.5 ; 0.5  |
| Ba/La-140      | 1.0 ± 1.1 ; 1.1  | -0.2 ± 0.4 ; 0.4 |

NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

Table 6. Vegetation

|                |   |
|----------------|---|
| Collection:    | Annually  |
| ODCM-          |   |
| Required LLDs: | I-131 = 0.06, Cs-134 = 0.06, Cs-137 = 0.08  |
| Other LLDs:    | Mn-54 = 0.05; Fe-59 = 0.10; Co-58, Co-60, Zn-65 = 0.05; Zr/Nb-95 = 0.01;<br>Ba/La-140 = 0.02 pCi/g wet weight |
| Units:         | 10 <sup>-2</sup> pCi/g wet weight   |

Sample Description and Concentration

Q-Quad 2 Dale Nimmic

|                |                  |                  |
|----------------|------------------|------------------|
| Date Collected | 08-01-02         | 08-01-02         |
| Lab Code       | QVE-5179         | QVE-5180         |
| Type           | Rhubarb leaves   | Potatoes         |
| Mn-54          | 0.3 ± 0.7 ; 0.7  | -0.7 ± 0.7 ; 0.7 |
| Fe-59          | 0.4 ± 1.6 ; 1.6  | -0.9 ± 1.4 ; 1.4 |
| Co-58          | 0.1 ± 0.8 ; 0.8  | 0.8 ± 0.6 ; 0.6  |
| Co-60          | 0.2 ± 1.0 ; 1.0  | 0.4 ± 0.8 ; 0.8  |
| Zn-65          | -0.1 ± 1.9 ; 1.9 | -0.8 ± 1.8 ; 1.8 |
| Zr/Nb-95       | 0.2 ± 0.7 ; 0.7  | -0.9 ± 1.4 ; 1.4 |
| I-131          | -0.1 ± 0.7 ; 0.7 | -0.2 ± 0.6 ; 0.6 |
| Cs-134         | 0.5 ± 0.9 ; 0.9  | 0.8 ± 0.7 ; 0.7  |
| Cs-137         | -0.5 ± 0.8 ; 0.8 | -0.6 ± 0.7 ; 0.7 |
| Ba/La-140      | 0.1 ± 0.7 ; 0.7  | -0.0 ± 0.8 ; 0.8 |

Q-Quad 3 Amy Johnston

|                |                  |                  |
|----------------|------------------|------------------|
| Date Collected | 08-01-02         | 08-01-02         |
| Lab Code       | QVE-5181         | QVE-5182         |
| Type           | Leafy broccoli   | Beets            |
| Mn-54          | -0.1 ± 0.7 ; 0.7 | -0.1 ± 0.6 ; 0.6 |
| Fe-59          | -0.6 ± 1.7 ; 1.7 | 1.7 ± 1.3 ; 1.4  |
| Co-58          | -0.2 ± 0.7 ; 0.7 | 0.2 ± 0.6 ; 0.6  |
| Co-60          | 0.9 ± 0.7 ; 0.7  | -0.9 ± 0.8 ; 0.8 |
| Zn-65          | 0.5 ± 1.6 ; 1.6  | -1.9 ± 1.8 ; 1.8 |
| Zr/Nb-95       | -0.3 ± 0.7 ; 0.7 | -0.8 ± 0.7 ; 0.7 |
| I-131          | -0.4 ± 0.6 ; 0.6 | -0.4 ± 0.5 ; 0.5 |
| Cs-134         | 0.2 ± 0.7 ; 0.7  | -0.2 ± 0.7 ; 0.7 |
| Cs-137         | 0.3 ± 0.8 ; 0.8  | 0.3 ± 0.6 ; 0.6  |
| Ba/La-140      | -0.7 ± 0.5 ; 0.5 | -0.2 ± 0.5 ; 0.5 |

NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

Table 6. Vegetation

Collection: Annually

ODCM-

Required LLDs: I-131 = 0.06, Cs-134 = 0.06, Cs-137 = 0.08

Other LLDs: Mn-54 = 0.05; Fe-59 = 0.10; Co-58, Co-60, Zn-65 = 0.05; Zr/Nb-95 = 0.01;

Ba/La-140 = 0.02 pCi/g wet weight

Units:  $10^{-2}$  pCi/g wet weight

Sample Description and Concentration

Q-Quad 4 William Dohrmann

|                |                      |                      |
|----------------|----------------------|----------------------|
| Date Collected | 08-01-02             | 08-01-02             |
| Lab Code       | QVE-5184             | QVE-5183             |
| Type           | Cabbage              | Onions               |
| Mn-54          | $0.5 \pm 0.6 ; 0.6$  | $-0.3 \pm 0.5 ; 0.5$ |
| Fe-59          | $-1.2 \pm 1.3 ; 1.3$ | $0.5 \pm 1.0 ; 1.0$  |
| Co-58          | $-0.6 \pm 0.5 ; 0.5$ | $-0.0 \pm 0.5 ; 0.5$ |
| Co-60          | $-0.1 \pm 0.6 ; 0.6$ | $0.3 \pm 0.6 ; 0.6$  |
| Zn-65          | $-2.0 \pm 1.5 ; 1.5$ | $-1.3 \pm 1.5 ; 1.5$ |
| Zr/Nb-95       | $-0.4 \pm 0.5 ; 0.5$ | $-0.8 \pm 0.6 ; 0.6$ |
| I-131          | $-0.3 \pm 0.5 ; 0.5$ | $-0.1 \pm 0.4 ; 0.4$ |
| Cs-134         | $0.3 \pm 0.6 ; 0.6$  | $-0.3 \pm 0.6 ; 0.6$ |
| Cs-137         | $0.5 \pm 0.7 ; 0.7$  | $0.1 \pm 0.6 ; 0.6$  |
| Ba/La-140      | $-0.5 \pm 0.6 ; 0.6$ | $-0.0 \pm 0.6 ; 0.6$ |

NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

|                     |   |
|---------------------|---|
| Table 7.            | Surface Water   |
| Collection:         | Monthly composites of weekly collections  |
| ODCM-Required LLDs: | Gross Beta = 4, Mn-54 = 15, Fe-59 = 30, Co-58 = 15, Co-60 = 15, Zn-65 = 30, Zr/Nb-95 = 15, Cs-134 = 15, Cs-137 = 18, Ba/La-140 = 15 pCi/L |
| Units:              | pCi/L   |

| Sample Description and Concentration |                              |                       |                  |  |
|--------------------------------------|------------------------------|-----------------------|------------------|--|
| <u>Q-33 Cordova</u>                  |                              |                       |                  |  |
| 2002<br>Collection<br>Period         | January                      | February              | March            |  |
| Lab Code                             | QSW-716 <sup>a</sup>         | QSW-1364 <sup>a</sup> | QSW-1964         |  |
| Gross Beta                           | 2.7 ± 1.0 ; 1.1              | 2.8 ± 0.9 ; 1.0       | 3.0 ± 1.1 ; 1.2  |  |
| Mn-54                                | -0.6 ± 1.3 ; 1.3             | -0.2 ± 2.3 ; 2.3      | 2.9 ± 2.8 ; 2.8  |  |
| Fe-59                                | 0.4 ± 2.6 ; 2.6              | 0.2 ± 4.6 ; 4.6       | -3.8 ± 6.5 ; 6.6 |  |
| Co-58                                | -1.0 ± 1.2 ; 1.2             | 1.3 ± 2.3 ; 2.3       | 0.8 ± 2.9 ; 2.9  |  |
| Co-60                                | 0.0 ± 1.3 ; 1.3              | 0.2 ± 2.0 ; 2.0       | 2.0 ± 3.3 ; 3.3  |  |
| Zn-65                                | -1.8 ± 2.8 ; 2.9             | -0.9 ± 4.8 ; 4.8      | 3.8 ± 7.1 ; 7.1  |  |
| Zr/Nb-95                             | -0.3 ± 1.6 ; 1.6             | -3.8 ± 2.2 ; 2.3      | 6.7 ± 3.0 ; 3.2  |  |
| Cs-134                               | 0.6 ± 1.4 ; 1.4              | -0.4 ± 2.4 ; 2.4      | -1.5 ± 3.5 ; 3.5 |  |
| Cs-137                               | -1.0 ± 1.6 ; 1.6             | 1.4 ± 2.5 ; 2.5       | 2.7 ± 2.7 ; 2.7  |  |
| Ba/La-140                            | 2.1 ± 1.2 ; 1.2              | 0.6 ± 2.0 ; 2.0       | 0.8 ± 3.8 ; 3.8  |  |
| 2002<br>Collection<br>Period         | April                        | May                   | June             |  |
| Lab Code                             | QSW-2764                     | QSW-3628              | QSW-4387         |  |
| Gross Beta                           | 3.3 ± 1.0 ; 1.1 <sup>a</sup> | 3.8 ± 1.0 ; 1.2       | 4.9 ± 1.4 ; 1.6  |  |
| Mn-54                                | 0.3 ± 3.2 ; 3.2              | -0.3 ± 1.4 ; 1.4      | 2.1 ± 2.2 ; 2.2  |  |
| Fe-59                                | 0.3 ± 6.2 ; 6.2              | -2.4 ± 2.7 ; 2.8      | 0.3 ± 4.9 ; 4.9  |  |
| Co-58                                | -1.8 ± 2.8 ; 2.8             | 0.3 ± 1.7 ; 1.7       | 0.1 ± 2.0 ; 2.0  |  |
| Co-60                                | 2.0 ± 2.6 ; 2.6              | 1.4 ± 1.4 ; 1.4       | -0.2 ± 2.6 ; 2.6 |  |
| Zn-65                                | -5.7 ± 7.2 ; 7.3             | -2.4 ± 3.9 ; 3.9      | -3.0 ± 4.9 ; 4.9 |  |
| Zr/Nb-95                             | -1.5 ± 2.8 ; 2.8             | -4.4 ± 1.7 ; 1.8      | -0.5 ± 2.2 ; 2.2 |  |
| Cs-134                               | 1.8 ± 2.4 ; 2.5              | -0.1 ± 1.8 ; 1.8      | -2.8 ± 2.5 ; 2.6 |  |
| Cs-137                               | 2.4 ± 3.1 ; 3.1              | -0.5 ± 1.9 ; 1.9      | 0.2 ± 2.2 ; 2.2  |  |
| Ba/La-140                            | -6.4 ± 4.3 ; 4.4             | -0.7 ± 1.9 ; 1.9      | -7.1 ± 3.2 ; 3.3 |  |

NOTE: Several ODCM-required LLDs were changed in September 2002.



# QUAD CITIES

|                |   |
|----------------|---|
| Table 7.       | Surface Water   |
| Collection:    | Monthly composites of weekly collections                                    |
| ODCM-          | Gross Beta = 4, Mn-54 = 15, Fe-59 = 30, Co-58 = 15, Co-60 = 15, Zn-65 = 30, |
| Required LLDs: | Zr/Nb-95 = 15, Cs-134 = 15, Cs-137 = 18, Ba/La-140 = 15 pCi/L               |
| Units:         | pCi/L   |

## Sample Description and Concentration

### Q-33 Cordova

|                              |                  |                  |                       |
|------------------------------|------------------|------------------|-----------------------|
| 2002<br>Collection<br>Period | July             | August           | September             |
| Lab Code                     | QSW-5018         | QSW-5988         | QSW-6690              |
| Gross Beta                   | 4.3 ± 1.5 ; 1.7  | 3.4 ± 0.9 ; 1.1  | 4.3 ± 1.4 ; 1.6       |
| Mn-54                        | -0.1 ± 1.8 ; 1.8 | 0.8 ± 4.6 ; 4.6  | -1.1 ± 2.6 ; 2.6      |
| Fe-59                        | 3.7 ± 3.2 ; 3.3  | -2.4 ± 8.6 ; 8.6 | 2.4 ± 4.6 ; 4.6       |
| Co-58                        | 1.4 ± 1.6 ; 1.6  | -1.9 ± 3.9 ; 3.9 | -0.1 ± 2.6 ; 2.6      |
| Co-60                        | 0.8 ± 1.6 ; 1.6  | 4.1 ± 5.2 ; 5.2  | 2.8 ± 3.5 ; 3.6       |
| Zn-65                        | -7.1 ± 5.3 ; 5.4 | 2.7 ± 8.6 ; 8.7  | 1.5 ± 4.2 ; 4.2       |
| Zr/Nb-95                     | -0.5 ± 2.1 ; 2.1 | -2.3 ± 9.0 ; 9.0 | -3.4 ± 2.7 ; 2.8      |
| Cs-134                       | 0.7 ± 2.1 ; 2.1  | 0.7 ± 5.5 ; 5.5  | -1.6 ± 2.8 ; 2.8      |
| Cs-137                       | -1.6 ± 2.2 ; 2.2 | -1.5 ± 4.8 ; 4.8 | -2.2 ± 2.9 ; 2.9      |
| Ba/La-140                    | -9.3 ± 2.2 ; 2.6 | -9.6 ± 5.6 ; 5.7 | -5.9 ± 3.5 ; 3.6      |
| 2002<br>Collection<br>Period | October          | November         | December              |
| Lab Code                     | QSW-7623         | QSW-8276         | QSW-8678 <sup>a</sup> |
| Gross Beta                   | 3.2 ± 0.9 ; 1.0  | 4.4 ± 1.0 ; 1.2  | 3.2 ± 1.1 ; 1.2       |
| Mn-54                        | -0.7 ± 1.9 ; 1.9 | -3.2 ± 3.1 ; 3.2 | 0.8 ± 2.7 ; 2.7       |
| Fe-59                        | 3.4 ± 3.7 ; 3.7  | 5.6 ± 6.5 ; 6.5  | -0.9 ± 5.1 ; 5.1      |
| Co-58                        | -1.1 ± 2.2 ; 2.2 | -1.6 ± 3.1 ; 3.1 | -0.4 ± 3.0 ; 3.0      |
| Co-60                        | -1.0 ± 2.0 ; 2.0 | 4.7 ± 4.1 ; 4.1  | -0.8 ± 3.8 ; 3.8      |
| Zn-65                        | -5.2 ± 5.5 ; 5.5 | 3.8 ± 7.0 ; 7.0  | 6.5 ± 6.6 ; 6.7       |
| Zr/Nb-95                     | -0.5 ± 2.5 ; 2.5 | 1.2 ± 2.6 ; 2.6  | 1.7 ± 3.1 ; 3.1       |
| Cs-134                       | -0.7 ± 2.1 ; 2.1 | -2.3 ± 3.8 ; 3.8 | 3.0 ± 3.7 ; 3.7       |
| Cs-137                       | 1.1 ± 2.1 ; 2.1  | -1.0 ± 3.7 ; 3.7 | -0.9 ± 3.5 ; 3.5      |
| Ba/La-140                    | -0.3 ± 2.4 ; 2.4 | -9.9 ± 4.5 ; 4.7 | -9.7 ± 4.5 ; 4.8      |

<sup>a</sup> Results reflect two samples for month; water frozen on 01-04-02 and 01-18-02.

<sup>b</sup> Results reflect three samples for month; water frozen on 02-02-02.

<sup>c</sup> Gross beta repeated; former result = 6.9+/-1.1 pCi/L.

<sup>d</sup> Results reflect three samples for month; water frozen on 12-06-02.

NOTE: Several ODCM-required LLDs were changed in September 2002.

# QUAD CITIES

|                     |   |
|---------------------|---|
| Table 7.            | Surface Water   |
| Collection:         | Monthly composites of weekly collections  |
| ODCM-Required LLDs: | Gross Beta = 4, Mn-54 = 15, Fe-59 = 30, Co-58 = 15, Co-60 = 15, Zn-65 = 30, Zr/Nb-95 = 15, Cs-134 = 15, Cs-137 = 18, Ba/La-140 = 15 pCi/L |
| Units:              | pCi/L   |

## Sample Description and Concentration

### Q-34 (C) Camanche

|                              |                      |                       |                  |
|------------------------------|----------------------|-----------------------|------------------|
| 2002<br>Collection<br>Period | January              | February              | March            |
| Lab Code                     | QSW-717 <sup>a</sup> | QSW-1365 <sup>a</sup> | QSW-1965         |
| Gross Beta                   | 5.8 ± 1.3 ; 1.6      | 2.4 ± 0.9 ; 0.9       | 3.5 ± 1.1 ; 1.2  |
| Mn-54                        | 0.2 ± 1.2 ; 1.2      | 1.8 ± 2.6 ; 2.6       | 0.2 ± 1.5 ; 1.5  |
| Fe-59                        | -2.2 ± 2.8 ; 2.8     | -0.9 ± 4.2 ; 4.2      | 0.1 ± 3.1 ; 3.1  |
| Co-58                        | 0.3 ± 1.3 ; 1.3      | -0.7 ± 2.0 ; 2.0      | -0.1 ± 1.3 ; 1.3 |
| Co-60                        | -0.2 ± 1.5 ; 1.5     | 2.0 ± 2.9 ; 2.9       | 1.0 ± 1.8 ; 1.8  |
| Zn-65                        | -1.9 ± 3.2 ; 3.2     | 1.7 ± 4.4 ; 4.4       | 0.3 ± 4.2 ; 4.2  |
| Zr/Nb-95                     | -0.1 ± 1.5 ; 1.5     | 0.6 ± 2.1 ; 2.1       | -0.1 ± 1.6 ; 1.6 |
| Cs-134                       | 0.3 ± 1.5 ; 1.5      | -0.3 ± 2.0 ; 2.0      | -1.5 ± 1.7 ; 1.7 |
| Cs-137                       | -0.6 ± 1.5 ; 1.5     | 0.9 ± 2.2 ; 2.2       | -0.4 ± 2.0 ; 2.0 |
| Ba/La-140                    | -2.5 ± 1.4 ; 1.5     | -1.8 ± 2.7 ; 2.7      | -2.9 ± 1.8 ; 1.8 |
| 2002<br>Collection<br>Period | April                | May                   | June             |
| Lab Code                     | QSW-2765             | QSW-3629              | QSW-4388         |
| Gross Beta                   | 3.7 ± 1.0 ; 1.2      | 3.9 ± 1.2 ; 1.3       | 5.9 ± 1.5 ; 1.8  |
| Mn-54                        | 1.9 ± 2.7 ; 2.7      | -0.1 ± 2.6 ; 2.6      | 0.7 ± 2.0 ; 2.0  |
| Fe-59                        | 6.2 ± 7.7 ; 7.8      | 0.4 ± 3.5 ; 3.5       | -1.2 ± 3.6 ; 3.6 |
| Co-58                        | 0.3 ± 3.1 ; 3.1      | -1.1 ± 2.2 ; 2.2      | -1.7 ± 2.0 ; 2.0 |
| Co-60                        | 2.3 ± 4.1 ; 4.1      | -1.2 ± 2.6 ; 2.6      | 0.6 ± 2.1 ; 2.1  |
| Zn-65                        | -6.9 ± 9.4 ; 9.4     | -1.4 ± 4.6 ; 4.6      | 1.8 ± 4.3 ; 4.3  |
| Zr/Nb-95                     | -0.8 ± 3.0 ; 3.0     | 2.4 ± 3.0 ; 3.0       | 1.0 ± 1.9 ; 2.0  |
| Cs-134                       | 0.8 ± 4.0 ; 4.0      | -1.9 ± 2.9 ; 2.9      | 0.0 ± 2.4 ; 2.4  |
| Cs-137                       | 1.6 ± 3.5 ; 3.5      | 0.0 ± 2.8 ; 2.8       | -1.3 ± 2.5 ; 2.5 |
| Ba/La-140                    | -6.0 ± 4.1 ; 4.2     | -1.5 ± 3.5 ; 3.6      | 1.3 ± 2.6 ; 2.7  |

NOTE: Several ODCM-required LLDs were changed in September 2002.

# QUAD CITIES

|                |   |
|----------------|---|
| Table 7.       | Surface Water   |
| Collection:    | Monthly composites of weekly collections                                    |
| ODCM-          | Gross Beta = 4, Mn-54 = 15, Fe-59 = 30, Co-58 = 15, Co-60 = 15, Zn-65 = 30, |
| Required LLDs: | Zr/Nb-95 = 15, Cs-134 = 15, Cs-137 = 18, Ba/La-140 = 15 pCi/L               |
| Units:         | pCi/L   |

| Sample Description and Concentration |                   |                   |                       |
|--------------------------------------|-------------------|-------------------|-----------------------|
| Q-34 (C) Camanche                    |                   |                   |                       |
| 2002                                 |                   |                   |                       |
| Collection Period                    | July              | August            | September             |
| Lab Code                             | QSW-5019          | QSW-5989          | QSW-6691              |
| Gross Beta                           | 3.6 ± 1.4 ; 1.5   | 3.4 ± 1.0 ; 1.1   | 3.4 ± 1.4 ; 1.5       |
| Mn-54                                | -0.1 ± 0.9 ; 0.9  | 1.1 ± 2.9 ; 2.9   | -0.3 ± 2.0 ; 2.0      |
| Fe-59                                | 1.3 ± 1.5 ; 1.5   | 2.5 ± 6.5 ; 6.5   | -0.7 ± 4.3 ; 4.3      |
| Co-58                                | -0.6 ± 0.9 ; 0.9  | -2.2 ± 3.4 ; 3.4  | -1.1 ± 1.8 ; 1.8      |
| Co-60                                | 1.7 ± 1.1 ; 1.1   | -1.9 ± 4.5 ; 4.5  | 0.5 ± 1.9 ; 1.9       |
| Zn-65                                | 0.9 ± 2.0 ; 2.0   | -2.2 ± 6.5 ; 6.5  | -6.1 ± 3.7 ; 3.8      |
| Zr/Nb-95                             | 0.5 ± 0.9 ; 0.9   | -1.1 ± 2.6 ; 2.6  | -2.4 ± 2.1 ; 2.1      |
| Cs-134                               | 1.1 ± 1.1 ; 1.1   | -0.8 ± 3.4 ; 3.4  | 2.2 ± 2.1 ; 2.1       |
| Cs-137                               | 0.4 ± 1.1 ; 1.1   | -3.8 ± 3.6 ; 3.7  | -3.9 ± 2.3 ; 2.3      |
| Ba/La-140                            | 3.4 ± 1.2 ; 1.3   | -10.4 ± 4.4 ; 4.7 | -1.0 ± 2.2 ; 2.2      |
| 2002                                 |                   |                   |                       |
| Collection Period                    | October           | November          | December              |
| Lab Code                             | QSW-7624          | QSW-8277          | QSW-8679 <sup>c</sup> |
| Gross Beta                           | 3.4 ± 1.0 ; 1.1   | 5.0 ± 1.1 ; 1.3   | 2.9 ± 1.0 ; 1.1       |
| Mn-54                                | -3.1 ± 1.8 ; 1.8  | -2.6 ± 3.1 ; 3.1  | 1.9 ± 1.8 ; 1.8       |
| Fe-59                                | -0.8 ± 3.3 ; 3.3  | -4.9 ± 6.2 ; 6.2  | -3.0 ± 3.7 ; 3.7      |
| Co-58                                | 2.2 ± 2.1 ; 2.1   | 2.3 ± 3.4 ; 3.4   | 0.2 ± 2.0 ; 2.0       |
| Co-60                                | -0.4 ± 2.3 ; 2.3  | -3.6 ± 4.1 ; 4.1  | 0.1 ± 2.1 ; 2.1       |
| Zn-65                                | -10.7 ± 5.5 ; 5.7 | -0.4 ± 6.8 ; 6.8  | -2.6 ± 4.0 ; 4.0      |
| Zr/Nb-95                             | -5.0 ± 2.1 ; 2.3  | 2.0 ± 2.7 ; 2.7   | 1.7 ± 1.8 ; 1.8       |
| Cs-134                               | -1.6 ± 2.4 ; 2.4  | -0.1 ± 3.8 ; 3.8  | -1.0 ± 2.4 ; 2.4      |
| Cs-137                               | -0.7 ± 2.0 ; 2.0  | -1.7 ± 3.4 ; 3.4  | -0.3 ± 2.3 ; 2.3      |
| Ba/La-140                            | 1.7 ± 2.2 ; 2.3   | 0.6 ± 3.4 ; 3.4   | -4.4 ± 2.8 ; 2.8      |

<sup>a</sup> Results reflect two samples for month; water frozen on 01-04-02 and 01-18-02.

<sup>b</sup> Results reflect three samples for month; water frozen on 02-02-02.

<sup>c</sup> Results reflect three samples for month; water frozen on 12-06-02.

NOTE: Several ODCM-required LLDs were changed in September 2002.

# QUAD CITIES

|                    |  |
|--------------------|--|
| Table 7.           | Surface Water                              |
| Collection:        | Quarterly composites of weekly collections |
| ODCM-Required LLD: | H-3 = 200 pCi/L                            |
| Units:             | pCi/L                                      |

| 2002<br>Collection<br>Period | <u>Sample Description and Concentration</u> |              |
|------------------------------|---|--------------|
|                              | <u>Q-33 Cordova</u>                         |              |
| 1st Quarter                  | QSW - 1966                                  | 104 ± 70; 71 |
| 2nd Quarter                  | QSW - 4389                                  | -36 ± 62; 62 |
| 3rd Quarter                  | QSW - 6692                                  | 5 ± 70; 70   |
| 4th Quarter                  | QSW - 8703                                  | -65 ± 83; 84 |
|                              | <u>Q-34 (C) Camanche</u>                    |              |
| 1st Quarter                  | QSW - 1967                                  | 97 ± 70; 71  |
| 2nd Quarter                  | QSW - 4390                                  | -23 ± 63; 63 |
| 3rd Quarter                  | QSW - 6693                                  | -48 ± 67; 68 |
| 4th Quarter                  | QSW - 8704                                  | -46 ± 84; 84 |

NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

Table 8. Well Water  
Collection: Quarterly  
ODCM- H-3 = 200, Mn-54 = 15, Fe-59 = 30, Co-58 = 15, Co-60 = 15, Zn-65 = 30,  
Required LLDs: Zr/Nb-95 = 15, Cs-134 = 15, Cs-137 = 18, Ba/La-140 = 15 pCi/L  
Units: pCi/L

| Sample Description and Concentration |                  |                  |                  |                   |
|--------------------------------------|------------------|------------------|------------------|-------------------|
| <u>Q-35 McMillian Well</u>           |                  |                  |                  |                   |
| Date Collected                       | 01-11-02         | 04-12-02         | 07-12-02         | 10-12-02          |
| Lab Code                             | QWW-221          | QWW-2282         | QWW-4639         | QWW-6899          |
| H-3                                  | 18 ± 65 ; 65     | -75 ± 67 ; 68    | 40 ± 68 ; 68     | 7 ± 88 ; 88       |
| Mn-54                                | -0.1 ± 2.3 ; 2.3 | -0.2 ± 2.4 ; 2.4 | 0.7 ± 2.4 ; 2.4  | -1.9 ± 4.5 ; 4.5  |
| Fe-59                                | -2.8 ± 4.5 ; 4.5 | 1.5 ± 5.5 ; 5.5  | 0.6 ± 4.4 ; 4.4  | -5.1 ± 7.8 ; 7.8  |
| Co-58                                | -0.4 ± 1.8 ; 1.8 | -2.1 ± 3.2 ; 3.2 | -0.5 ± 2.4 ; 2.4 | 4.3 ± 3.8 ; 3.8   |
| Co-60                                | -1.8 ± 3.0 ; 3.1 | -0.9 ± 3.8 ; 3.8 | -0.3 ± 2.5 ; 2.5 | 2.4 ± 4.6 ; 4.6   |
| Zn-65                                | -4.5 ± 6.1 ; 6.2 | 0.6 ± 6.4 ; 6.4  | -5.6 ± 5.7 ; 5.7 | 4.3 ± 11.7 ; 11.7 |
| Zr/Nb-95                             | -0.5 ± 2.4 ; 2.4 | 0.3 ± 2.7 ; 2.7  | 0.7 ± 2.0 ; 2.0  | -1.8 ± 4.6 ; 4.6  |
| Cs-134                               | -0.6 ± 2.2 ; 2.2 | -1.4 ± 3.8 ; 3.8 | 0.1 ± 3.2 ; 3.2  | 1.4 ± 6.1 ; 6.1   |
| Cs-137                               | 0.7 ± 2.5 ; 2.5  | 2.6 ± 2.7 ; 2.7  | 0.5 ± 2.5 ; 2.5  | -4.7 ± 5.5 ; 5.6  |
| Ba/La-140                            | 2.5 ± 2.8 ; 2.8  | 5.6 ± 2.8 ; 2.9  | 9.5 ± 2.9 ; 3.2  | 0.3 ± 3.4 ; 3.4   |
| <u>Q-36 Cordova Well</u>             |                  |                  |                  |                   |
| Date Collected                       | 01-11-02         | 04-12-02         | 07-12-02         | 10-12-02          |
| Lab Code                             | QWW-222          | QWW-2283         | QWW-4640         | QWW-6900          |
| H-3                                  | 76 ± 68 ; 69     | -49 ± 69 ; 69    | 40 ± 68 ; 68     | -18 ± 87 ; 87     |
| Mn-54                                | -0.6 ± 1.5 ; 1.5 | 0.7 ± 2.8 ; 2.8  | -0.2 ± 1.5 ; 1.5 | -0.3 ± 2.6 ; 2.6  |
| Fe-59                                | 0.9 ± 2.8 ; 2.8  | -0.9 ± 4.5 ; 4.5 | 2.4 ± 2.7 ; 2.7  | -3.8 ± 6.3 ; 6.3  |
| Co-58                                | 0.1 ± 1.5 ; 1.5  | 2.8 ± 2.6 ; 2.7  | 0.3 ± 1.4 ; 1.4  | -2.1 ± 2.7 ; 2.7  |
| Co-60                                | -0.2 ± 1.6 ; 1.6 | -1.6 ± 3.4 ; 3.4 | 0.3 ± 1.6 ; 1.6  | -1.8 ± 3.8 ; 3.8  |
| Zn-65                                | -1.3 ± 2.4 ; 2.4 | -4.6 ± 6.1 ; 6.1 | -2.6 ± 2.9 ; 2.9 | 3.4 ± 6.7 ; 6.7   |
| Zr/Nb-95                             | -1.4 ± 1.6 ; 1.6 | 2.5 ± 2.8 ; 2.8  | 1.3 ± 1.3 ; 1.4  | -1.4 ± 2.7 ; 2.7  |
| Cs-134                               | 0.4 ± 1.4 ; 1.4  | -0.3 ± 2.8 ; 2.8 | 0.7 ± 1.7 ; 1.7  | -0.3 ± 2.9 ; 2.9  |
| Cs-137                               | -0.8 ± 1.7 ; 1.7 | 1.1 ± 3.3 ; 3.4  | 1.0 ± 1.6 ; 1.6  | 3.1 ± 2.9 ; 2.9   |
| Ba/La-140                            | 0.5 ± 1.3 ; 1.3  | 0.4 ± 4.0 ; 4.0  | -2.4 ± 1.7 ; 1.7 | 7.6 ± 4.1 ; 4.2   |

NOTE: Several ODCM-required LLDs were changed in September 2002.

QUAD CITIES

MILCH ANIMALS, NEAREST LIVESTOCK, AND  
NEAREST RESIDENCES CENSUS

QUAD CITIES

MILCH ANIMALS CENSUS, 2002

Q-26

Bill Stanley Dairy

3.5 miles,      Sector F

hay, grain and supplement

6.3 miles,      Sector H

10% - Pasture

90% - Chopped and Feed

6.0 miles,      Sector N

UNCO-OPERATIVE

No Data Available

Census conducted by      G.T. Kreuder on August 13, 2002

# QUAD CITIES

## NEAREST LIVESTOCK CENSUS, 2002

Nearest livestock of the Quad Cities Station within a 6.2 mile radius.

| <u>Sector</u> | <u>Direction</u> | <u>Distance</u> |
|---------------|------------------|-----------------|
| A             | N                | 3.0 miles       |
| B             | NNE              | 3.5 miles       |
| C             | NE               | None            |
| D             | ENE              | 3.0 miles       |
| E             | E                | 2.0 miles       |
| F             | ESE              | 3.0 miles       |
| G             | SE               | 3.5 miles       |
| H             | SSE              | 4.7 miles       |
| J             | S                | 2.0 miles       |
| K             | SSW              | None            |
| L             | SW               | 3.5 miles       |
| M             | WSW              | 3.0 miles       |
| N             | W                | 4.7 miles       |
| P             | WNW              | 3.6 miles       |
| Q             | NW               | 5.0 miles       |
| R             | NNW              | 2.3 miles       |

Census conducted by G.T. Kreuder on August 12, 2002



# QUAD CITIES

## NEAREST RESIDENCE CENSUS, 2002

Nearest resident of the Quad Cities Station within a 6.2 mile radius.

| <u>Sector</u> | <u>Direction</u> | <u>Distance</u> |
|---------------|------------------|-----------------|
| A             | N                | 0.5 miles       |
| B             | NNE              | 0.7 miles       |
| C             | NE               | 1.8 miles       |
| D             | ENE              | 3.5 miles       |
| E             | E                | 2.3 miles       |
| F             | ESE              | 3.0 miles       |
| G             | SE               | 2.5 miles       |
| H             | SSE              | 1.0 miles       |
| J             | S                | 0.8 miles       |
| K             | SSW              | 3.0 miles       |
| L             | SW               | 3.0 miles       |
| M             | WSW              | 2.0 miles       |
| N             | W                | 2.3 miles       |
| P             | WNW              | 2.3 miles       |
| Q             | NW               | 2.3 miles       |
| R             | NNW              | 1.7 miles       |

Census conducted by G.T. Kreuder on August 13, 2002

## QUAD CITIES

4.0 TLD DATA\*

\*TLD Data provided by Exelon Nuclear.

Exelon Nuclear  
Environmental Site Report for Quad Cities

Gamma Radiation Measured in mR by TLDs

| Site                               | Description    | Quarter 1<br>2002 | Quarter 2<br>2002 | Quarter 3<br>2002 | Quarter 4<br>2002 |
|------------------------------------|----------------|-------------------|-------------------|-------------------|-------------------|
| <b>I. INDICATOR LOCATIONS</b>      |                |                   |                   |                   |                   |
| <b>a. Air Samplers</b>             |                |                   |                   |                   |                   |
| Q-01-1                             | ONSITE NO. 1   | 20.0              | 19.0              | 17.0              | 21.0              |
| Q-01-2                             | ONSITE NO. 1   | 20.0              | 21.0              | 16.0              | 23.0              |
| Q-02-1                             | ONSITE NO. 2   | 20.0              | 20.0              | 16.0              | 22.0              |
| Q-02-2                             | ONSITE NO. 2   | 20.0              | 20.0              | 17.0              | 22.0              |
| Q-03-1                             | ONSITE NO. 3   | 20.0              | 18.0              | 15.0              | 20.0              |
| Q-03-2                             | ONSITE NO. 3   | 19.0              | 18.0              | 18.0              | 21.0              |
| Q-04-1                             | NITRIN         | 20.0              | 19.0              | 19.0              | 23.0              |
| Q-04-2                             | NITRIN         | 20.0              | 20.0              | 20.0              | 21.0              |
| Q-13-1                             | PRINCETON      | 23.0              | 20.0              | 18.0              | 23.0              |
| Q-13-2                             | PRINCETON      | 21.0              | 23.0              | 18.0              | 22.0              |
| Q-16-1                             | LOW MOOR       | 20.0              | 20.0              | 16.0              | 22.0              |
| Q-16-2                             | LOW MOOR       | 19.0              | 19.0              | 17.0              | 22.0              |
| Q-37-1                             | MEREDOSIA ROAD | 20.0              | 21.0              | 19.0              | 22.0              |
| Q-37-2                             | MEREDOSIA ROAD | 18.0              | 21.0              | 16.0              | 24.0              |
| Q-38-1                             | FULLER ROAD    | 18.0              | 18.0              | 17.0              | 22.0              |
| Q-38-2                             | FULLER ROAD    | 20.0              | 19.0              | 19.0              | 20.0              |
| Air Sampler Mean $\pm$ S. D.       |                | 19.9 $\pm$ 1.1    | 19.8 $\pm$ 1.3    | 17.4 $\pm$ 1.4    | 21.9 $\pm$ 1.1    |
| Annual Air Sampler Mean $\pm$ S.D. |                |                   |                   |                   | 19.7 $\pm$ 2.0    |
| <b>b. Inner Ring (100 Series)</b>  |                |                   |                   |                   |                   |
| Q-101-1                            |                | 18.0              | 20.0              | 17.0              | 21.0              |
| Q-101-2                            |                | 21.0              | 18.0              | 17.0              | 21.0              |
| Q-102-1                            |                | 22.0              | 22.0              | 17.0              | 23.0              |
| Q-102-3                            |                | 21.0              | 18.0              | 19.0              | 22.0              |
| Q-103-1                            |                | 19.0              | 20.0              | 16.0              | 21.0              |
| Q-103-2                            |                | 19.0              | 18.0              | 16.0              | 20.0              |
| Q-104-1                            |                | 19.0              | 18.0              | 16.0              | 22.0              |
| Q-104-2                            |                | 20.0              | 21.0              | 16.0              | 21.0              |
| Q-105-1                            |                | 20.0              | 21.0              | 15.0              | 22.0              |
| Q-105-2                            |                | 19.0              | 20.0              | 15.0              | 21.0              |
| Q-106-2                            |                | 19.0              | 21.0              | 18.0              | 20.0              |
| Q-106-3                            |                | 20.0              | 20.0              | 16.0              | 20.0              |
| Q-107-2                            |                | 19.0              | 17.0              | 16.0              | 22.0              |
| Q-107-3                            |                | 20.0              | 20.0              | 17.0              | 23.0              |
| Q-108-1                            |                | 20.0              | 21.0              | 18.0              | 21.0              |
| Q-108-2                            |                | 20.0              | 18.0              | 17.0              | 21.0              |
| Q-109-1                            |                | 22.0              | 21.0              | 18.0              | 22.0              |
| Q-109-2                            |                | 19.0              | 20.0              | 18.0              | 22.0              |
| Q-111-1                            |                | 24.0              | 23.0              | 18.0              | 23.0              |
| Q-111-2                            |                | 20.0              | 18.0              | 16.0              | 23.0              |

Exelon Nuclear  
Environmental Site Report for Quad Cities

| Gamma Radiation Measured in mR by TLDs |             |                   |                   |                   |                   |
|--|-------------|-------------------|-------------------|-------------------|-------------------|
| Site                                   | Description | Quarter 1<br>2002 | Quarter 2<br>2002 | Quarter 3<br>2002 | Quarter 4<br>2002 |
| b. Inner Ring (100 Series)             |             |                   |                   |                   |                   |
| Q-112-1                                |             | 21.0              | 18.0              | 17.0              | 23.0              |
| Q-112-2                                |             | ND <sup>a</sup>   | 18.0              | 15.0              | 20.0              |
| Q-113-1                                |             | 20.0              | 19.0              | 16.0              | 24.0              |
| Q-113-2                                |             | 20.0              | 18.0              | 16.0              | 20.0              |
| Q-114-1                                |             | 20.0              | 19.0              | 16.0              | 21.0              |
| Q-114-2                                |             | 20.0              | 19.0              | 18.0              | 22.0              |
| Q-115-1                                |             | 20.0              | 19.0              | 18.0              | 21.0              |
| Q-115-2                                |             | 20.0              | 20.0              | 18.0              | 25.0              |
| Q-116-1                                |             | 18.0              | 19.0              | 21.0              | 25.0              |
| Q-116-3                                |             | 22.0              | 21.0              | 17.0              | 22.0              |
| Inner Ring Mean ± S.D.                 |             | 20.1 ±1.3         | 19.5 ±1.5         | 16.9 ±1.3         | 21.8 ±1.4         |
| Annual Inner Ring Mean ± S.D.          |             | 19.6 ±2.2         |                   |                   |                   |
| c. Outer Ring (200 Series)             |             |                   |                   |                   |                   |
| Q-201-1                                |             | 24.0              | 21.0              | 17.0              | 24.0              |
| Q-201-2                                |             | 21.0              | 23.0              | 19.0              | 24.0              |
| Q-202-1                                |             | 20.0              | 17.0              | 16.0              | 20.0              |
| Q-202-2                                |             | 22.0              | 18.0              | 16.0              | 22.0              |
| Q-203-1                                |             | 22.0              | 18.0              | 17.0              | 22.0              |
| Q-203-2                                |             | 22.0              | 20.0              | 20.0              | 24.0              |
| Q-204-1                                |             | 23.0              | 24.0              | 19.0              | 24.0              |
| Q-204-2                                |             | 24.0              | 21.0              | 19.0              | 26.0              |
| Q-205-1                                |             | 23.0              | 21.0              | 19.0              | 24.0              |
| Q-205-4                                |             | 22.0              | 23.0              | 19.0              | 25.0              |
| Q-206-1                                |             | 21.0              | 20.0              | 17.0              | 23.0              |
| Q-206-2                                |             | 18.0              | 19.0              | 17.0              | 22.0              |
| Q-207-1                                |             | 23.0              | 23.0              | 18.0              | 22.0              |
| Q-207-4                                |             | 21.0              | 22.0              | 17.0              | 21.0              |
| Q-208-1                                |             | 18.0              | 22.0              | 17.0              | 21.0              |
| Q-208-2                                |             | 23.0              | 22.0              | 18.0              | 24.0              |
| Q-209-1                                |             | 22.0              | 20.0              | 18.0              | 23.0              |
| Q-209-4                                |             | 19.0              | 22.0              | 18.0              | 23.0              |
| Q-210-1                                |             | 21.0              | 20.0              | 17.0              | 22.0              |
| Q-210-4                                |             | 23.0              | 20.0              | 17.0              | 22.0              |
| Q-211-1                                |             | 24.0              | 25.0              | 20.0              | 26.0              |
| Q-211-2                                |             | 23.0              | 23.0              | 20.0              | 26.0              |
| Q-212-1                                |             | 23.0              | 21.0              | 19.0              | 25.0              |
| Q-212-2                                |             | 18.0              | 19.0              | 16.0              | 21.0              |
| Q-213-1                                |             | 20.0              | 20.0              | 17.0              | 20.0              |
| Q-213-2                                |             | 16.0              | 21.0              | 16.0              | 20.0              |
| Q-214-1                                |             | 19.0              | 20.0              | 18.0              | 23.0              |
| Q-214-2                                |             | 20.0              | 20.0              | 20.0              | 24.0              |

Exelon Nuclear  
Environmental Site Report for Quad Cities

| Gamma Radiation Measured in mR by TLDs |   |                   |                   |                   |                   |
|--|---|-------------------|-------------------|-------------------|-------------------|
| Site                                   | Description                             | Quarter 1<br>2002 | Quarter 2<br>2002 | Quarter 3<br>2002 | Quarter 4<br>2002 |
| Outer Ring (200 Series)                |   |                   |                   |                   |                   |
| Q-215-1                                |   | 19.0              | 29.0              | 19.0              | 24.0              |
| Q-215-2                                |   | 27.0              | 23.0              | 21.0              | 25.0              |
| Q-216-1                                |   | 23.0              | 23.0              | 19.0              | 22.0              |
| Q-216-2                                |   | 22.0              | 6.0               | 34.0              | 22.0              |
|  | Outer Ring Mean $\pm$ S.D.              | 21.4 $\pm$ 2.3    | 20.8 $\pm$ 3.6    | 18.6 $\pm$ 3.1    | 23.0 $\pm$ 1.7    |
|  | Annual Outer Ring Mean $\pm$ S.D.       |                   |                   |                   | 21.0 $\pm$ 3.2    |
|  | INDICATOR LOCATION MEAN $\pm$ S.D.      | 20.6 $\pm$ 1.9    | 20.1 $\pm$ 2.6    | 17.7 $\pm$ 2.4    | 22.3 $\pm$ 1.6    |
|  | Annual INDICATOR MEAN $\pm$ S.D.        |                   |                   |                   | 20.2 $\pm$ 2.7    |
| II. CONTROL LOCATIONS                  |   |                   |                   |                   |                   |
| Q-07-1                                 | CLINTON                                 | 17.0              | 19.0              | 16.0              | 22.0              |
| Q-07-2                                 | CLINTON                                 | 21.0              | 20.0              | 16.0              | 22.0              |
|  | CONTROL LOCATION MEAN $\pm$ S.D.        | 19.0 $\pm$ 2.8    | 19.5 $\pm$ 0.7    | 16.0 $\pm$ 0.0    | 22.0 $\pm$ 0.0    |
|  | Annual CONTROL LOCATION MEAN $\pm$ S.D. |                   |                   |                   | 19.1 $\pm$ 2.5    |

## QUAD CITIES

### 5.0 GRAPHS OF DATA TRENDS

## Air Particulates - Gross Beta

### Q-01 Onsite No. 1

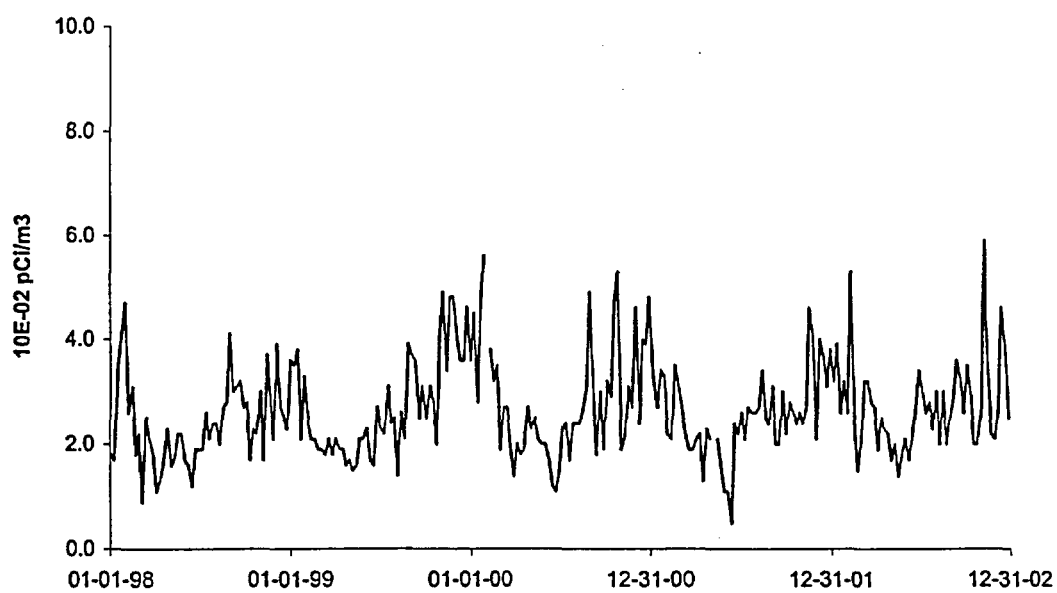


Figure 1. Continuous collection with weekly exchange of particulate filters.

### Q-02 Onsite No. 2

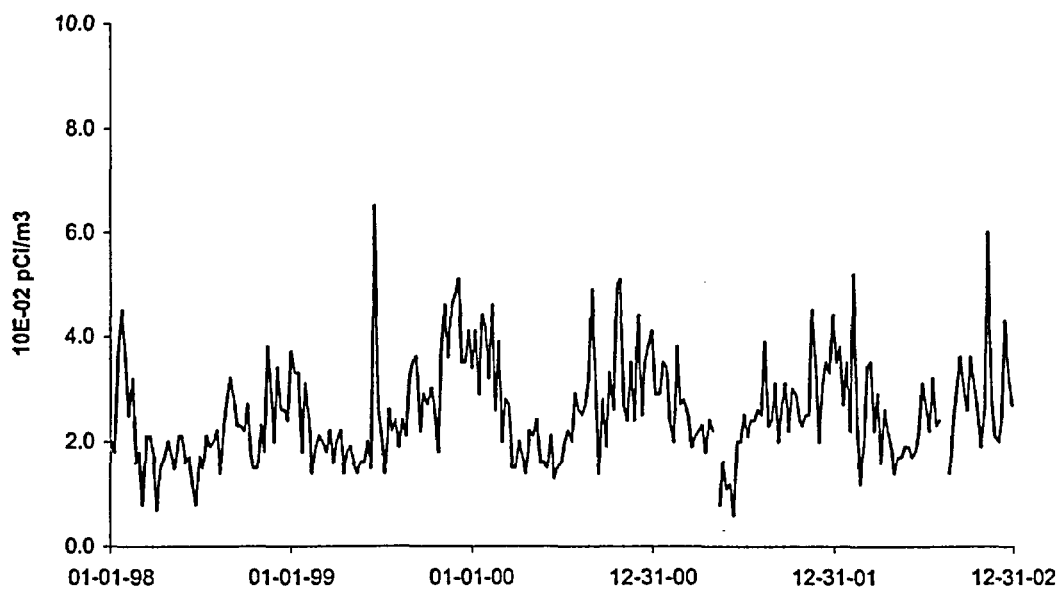


Figure 2. Continuous collection with weekly exchange of particulate filters.

## Air Particulates - Gross Beta

### Q-03 Onsite No. 3

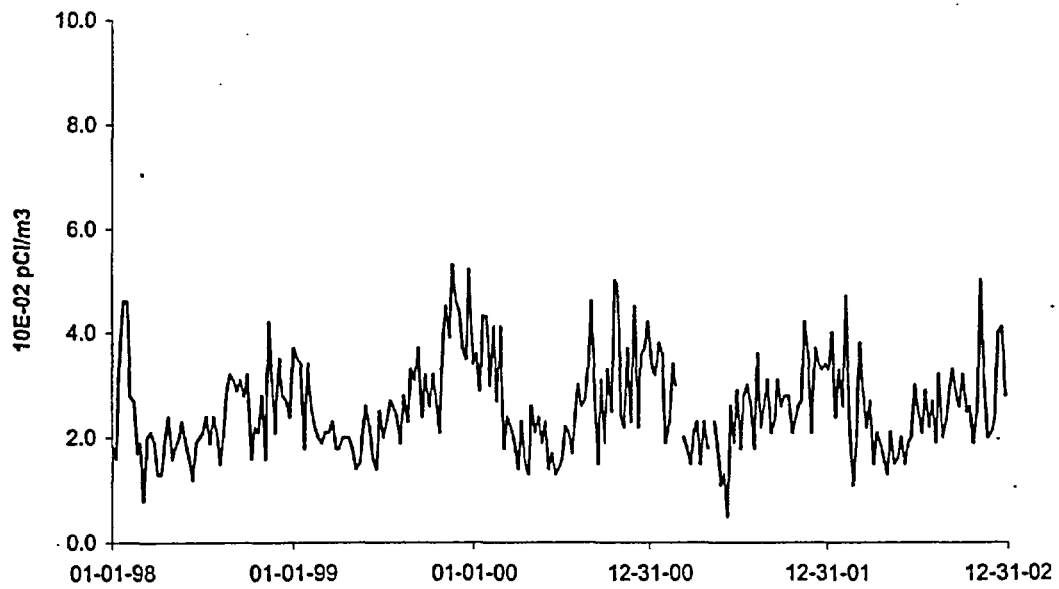


Figure 3. Continuous collection with weekly exchange of particulate filters.

### Q-04 Nitrin

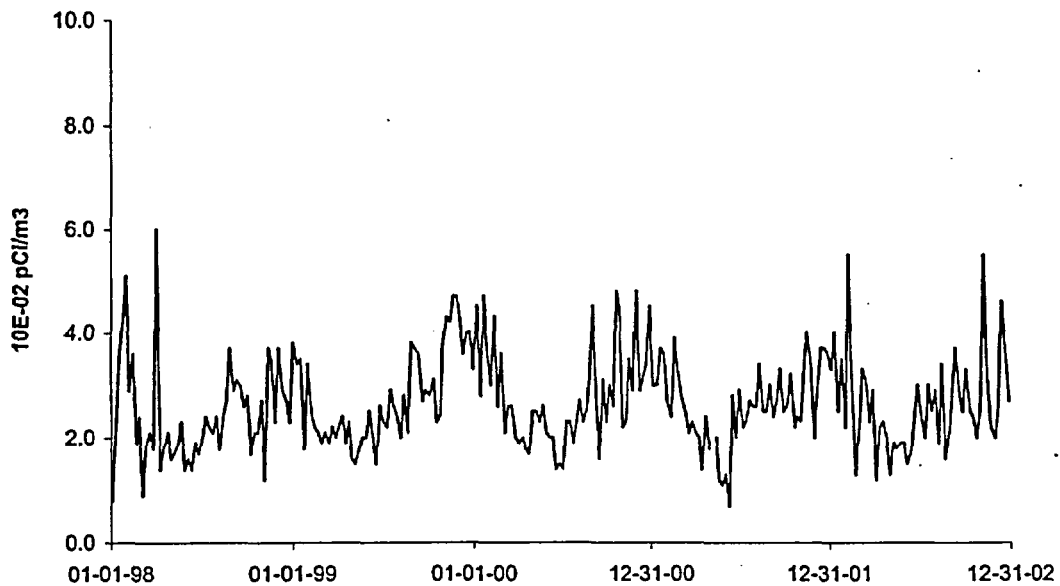
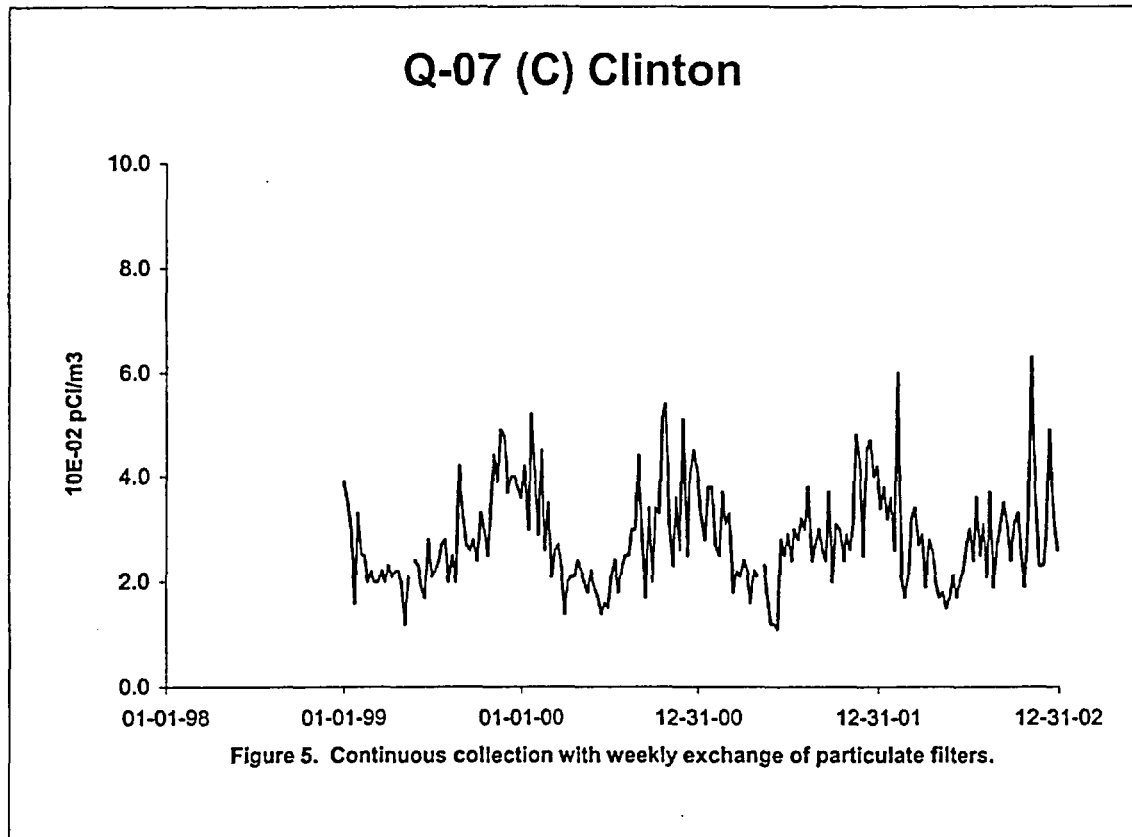


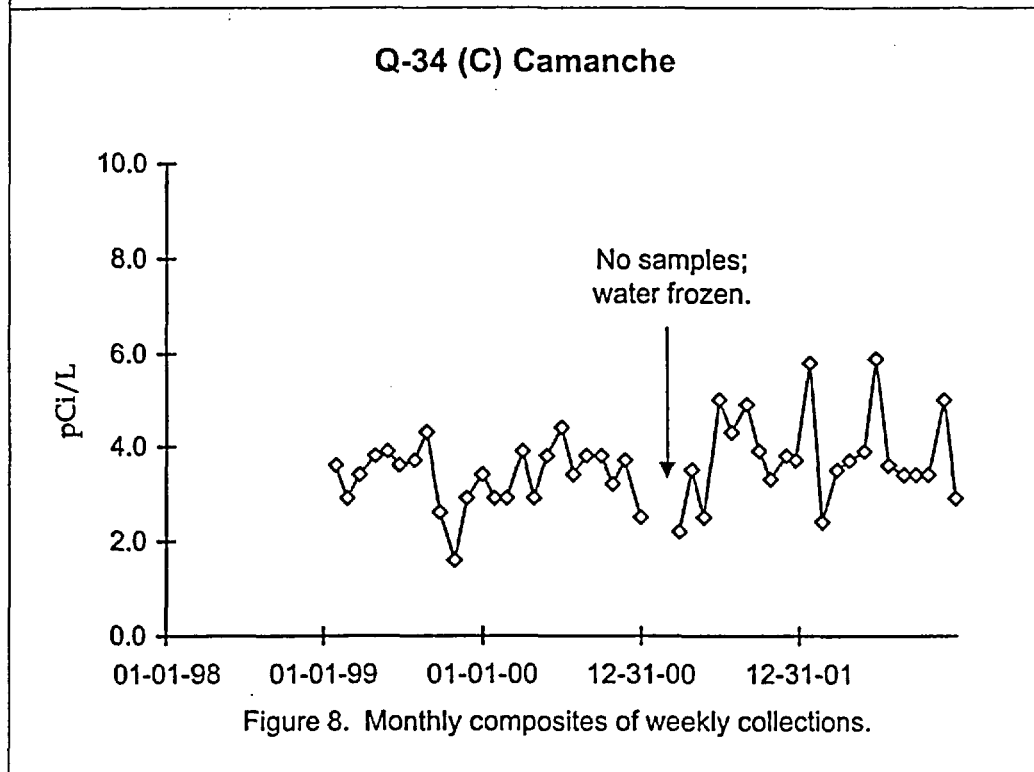
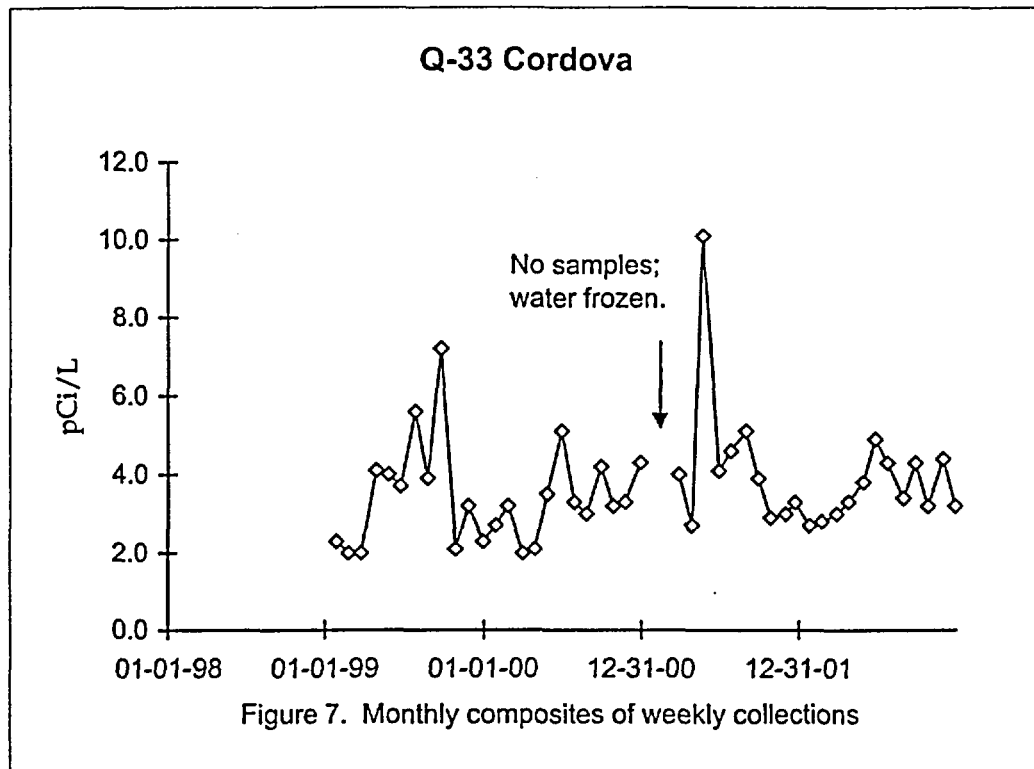
Figure 4. Continuous collection with weekly exchange of particulate filters.



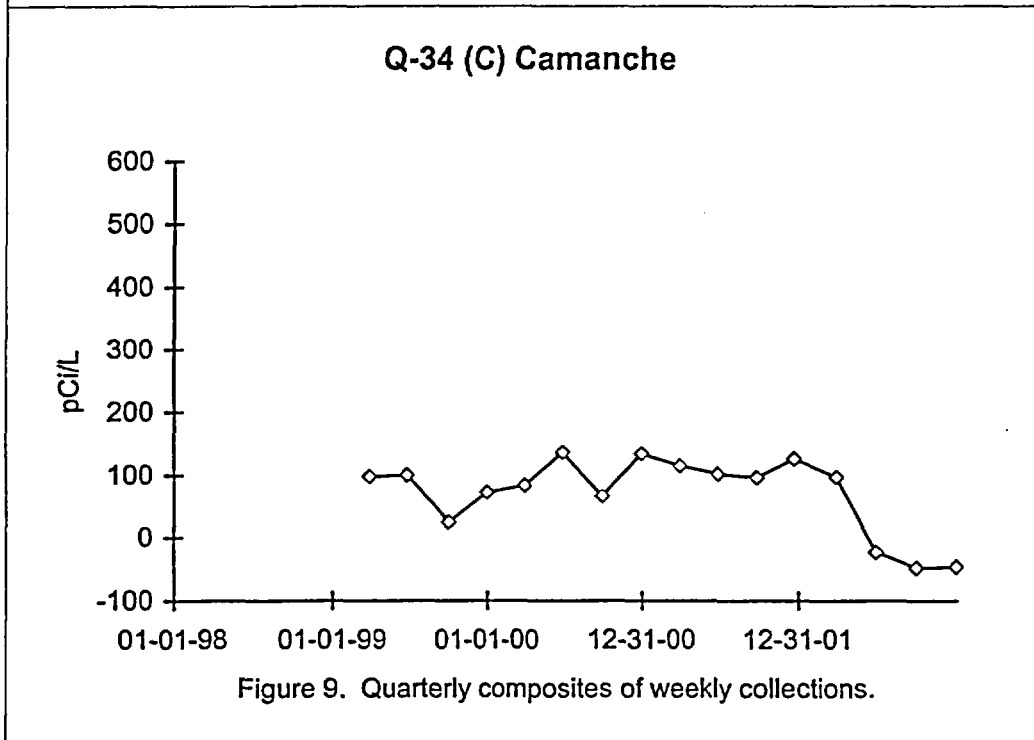
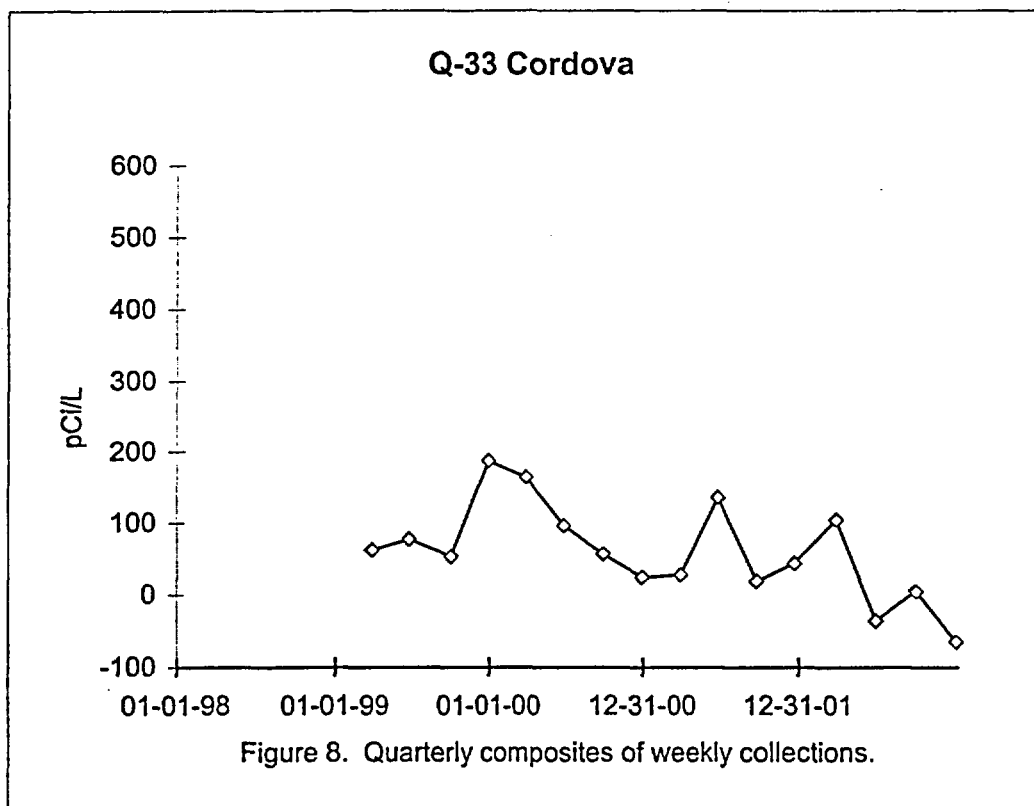
## Air Particulates - Gross Beta



## Surface Water-Gross Beta



# Surface Water-Tritium



# Well Water-Tritium

**Q-35 McMillan Well**

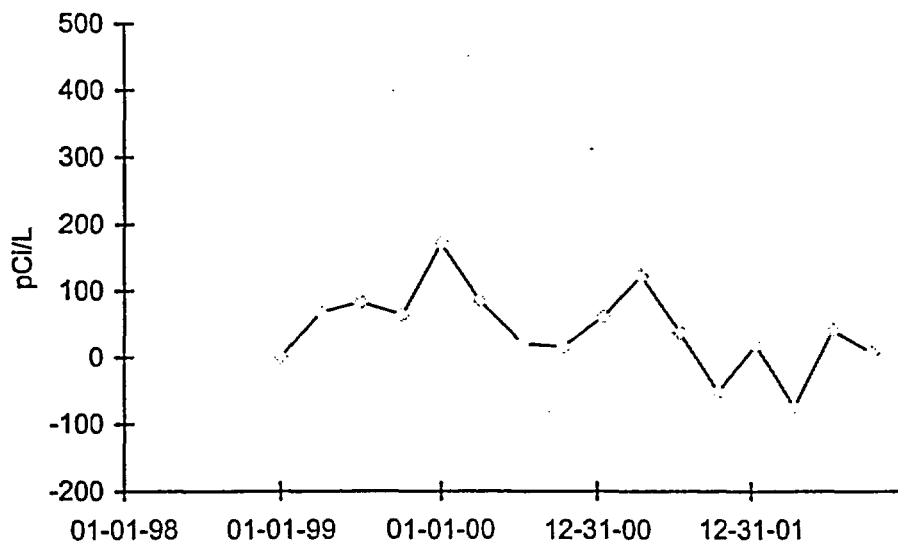


Figure 10. Quarterly collections.

**Q-36 Cordova Well**

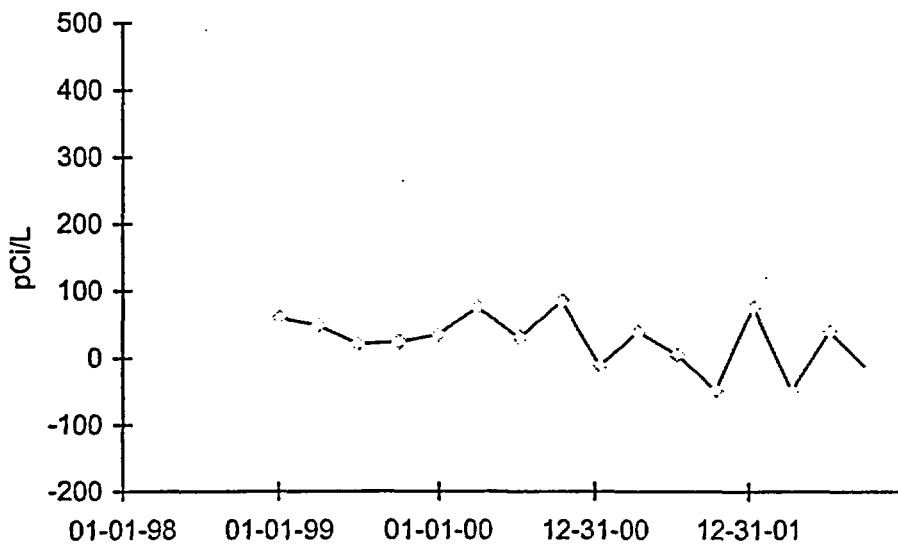


Figure 11. Quarterly collections.

APPENDIX IV  
INTERLABORATORY COMPARISON PROGRAM

## Appendix IV

### Interlaboratory Comparison Program Results

Environmental, Inc., Midwest Laboratory, formerly Teledyne Brown Engineering Environmental Services Midwest Laboratory has participated in interlaboratory comparison (crosscheck) programs since the formulation of its quality control program in December 1971. These programs are operated by agencies which supply environmental type samples containing concentrations of radionuclides known to the issuing agency but not to participant laboratories. The purpose of such a program is to provide an independent check on a laboratory's analytical procedures and to alert it of any possible problems.

Participant laboratories measure the concentration of specified radionuclides and report them to the issuing agency. Several months later, the agency reports the known values to the participant laboratories and specifies control limits. Results consistently higher or lower than the known values or outside the control limits indicate a need to check the instruments or procedures used.

Results in Table IV-1 were obtained through participation in the environmental sample crosscheck program administered by Environmental Resources Associates, serving as a replacement for studies conducted previously by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.

The results in Table IV-2 were obtained for Thermoluminescent Dosimeters (TLDs), via International Intercomparison of Environmental Dosimeters under the sponsorships listed in Table A-2. Results of internal laboratory testing is also listed.

Table IV-3 lists results of the analyses on in-house "spiked" samples for the past twelve months. All samples are prepared using NIST traceable sources. Data for previous years available upon request.

Table IV-4 lists results of the analyses on in-house "blank" samples for the past twelve months. Data for previous years available upon request.

Table IV-5 list results of the in-house "duplicate" program for the past twelve months. Acceptance is based on the difference of the results being less than the sum of the errors. Data for previous years available upon request.

The results in Table IV-6 were obtained through participation in the Mixed Analyte Performance Evaluation Program.

The results in Table IV-7 were obtained through participation in the Environmental Measurement Laboratory Quality Assessment Program.

Attachment A lists acceptance criteria for "spiked" samples.

Out-of-limit results are explained directly below the result.

## Attachment A

### ACCEPTANCE CRITERIA FOR "SPIKED" SAMPLES

#### LABORATORY PRECISION: ONE STANDARD DEVIATION VALUES FOR VARIOUS ANALYSES<sup>a</sup>

| Analysis   | Level   | One standard deviation<br>for single determination                             |
|--|---|--|
| Gamma Emitters   | 5 to 100 pCi/liter or kg<br>> 100 pCi/liter or kg | 5.0 pCi/liter<br>5% of known value   |
| Strontium-89 <sup>b</sup>  | 5 to 50 pCi/liter or kg<br>> 50 pCi/liter or kg   | 5.0 pCi/liter<br>10% of known value  |
| Strontium-90 <sup>b</sup>  | 2 to 30 pCi/liter or kg<br>> 30 pCi/liter or kg   | 5.0 pCi/liter<br>10% of known value  |
| Potassium-40   | > 0.1 g/liter or kg                               | 5% of known value  |
| Gross alpha  | 20 pCi/liter<br>> 20 pCi/liter                    | 5.0 pCi/liter<br>25% of known value  |
| Gross beta   | 100 pCi/liter<br>> 100 pCi/liter                  | 5.0 pCi/liter<br>5% of known value   |
| Tritium  | 4,000 pCi/liter<br>> 4,000 pCi/liter              | 1s = (pCi/liter) =<br>169.85 x (known) <sup>0.0933</sup><br>10% of known value |
| Radium-226,-228  | 0.1 pCi/liter                                     | 15% of known value   |
| Plutonium  | 0.1 pCi/liter, gram, or sample                    | 10% of known value   |
| Iodine-131,<br>Iodine-129 <sup>b</sup>                               | 55 pCi/liter<br>> 55 pCi/liter                    | 6.0 pCi/liter<br>10% of known value  |
| Uranium-238,<br>Nickel-63 <sup>b</sup><br>Technetium-99 <sup>b</sup> | 35 pCi/liter<br>> 35 pCi/liter                    | 6.0 pCi/liter<br>15% of known value  |
| Iron-55 <sup>b</sup>   | 50 to 100 pCi/liter<br>> 100 pCi/liter            | 10 pCi/liter<br>10% of known value   |
| Others <sup>b</sup>  | —   | 20% of known value   |

<sup>a</sup> From EPA publication, "Environmental Radioactivity Laboratory Intercomparison Studies Program, Fiscal Year, 1981-1982, EPA-600/4-81-004.

<sup>b</sup> Laboratory limit.

TABLE IV-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)<sup>a</sup>.

| Lab Code             | Date     | Analysis            | Concentration (pCi/L)          |                         |                   |
|----------------------|----------|---------------------|--------------------------------|-------------------------|-------------------|
|                      |          |                     | Laboratory Result <sup>b</sup> | ERA Result <sup>c</sup> | Control Limits    |
| STW-940              | 02/20/02 | Sr-89               | 53.0 ± 2.5                     | 55.3 ± 5.0              | 46.6 - 64.0       |
| STW-940              | 02/20/02 | Sr-90               | 16.6 ± 0.5                     | 15.9 ± 5.0              | 7.2 - 24.6        |
| STW-942              | 02/20/02 | Gr. Alpha           | 6.5 ± 0.6                      | 8.0 ± 5.0               | 0.0 - 16.7        |
| STW-942              | 02/20/02 | Gr. Beta            | 45.7 ± 3.1                     | 48.3 ± 5.0              | 39.6 - 57.0       |
| STW-944              | 02/20/02 | Ba-133              | 25.8 ± 1.5                     | 28.9 ± 5.0              | 20.2 - 37.6       |
| STW-944              | 02/20/02 | Co-60               | 76.9 ± 2.7                     | 73.4 ± 5.0              | 64.7 - 82.1       |
| STW-944              | 02/20/02 | Cs-134              | 38.7 ± 1.6                     | 42.1 ± 5.0              | 33.4 - 50.8       |
| STW-944              | 02/20/02 | Cs-137              | 92.9 ± 2.7                     | 88.8 ± 5.0              | 80.1 - 97.5       |
| STW-944              | 02/20/02 | Ra-226              | 15.3 ± 0.7                     | 14.3 ± 2.2              | 10.6 - 18.0       |
| STW-944              | 02/20/02 | Ra-228              | 17.5 ± 0.4                     | 16.9 ± 4.2              | 9.6 - 24.2        |
| STW-944              | 02/20/02 | Uranium             | 23.8 ± 1.1                     | 28.3 ± 3.0              | 23.1 - 33.5       |
| STW-944              | 02/20/02 | Zn-65               | 361.0 ± 9.2                    | 359.0 ± 35.9            | 298.0 - 420.0     |
| STW-951              | 05/22/02 | Gr. Alpha           | 23.9 ± 2.5                     | 22.8 ± 5.7              | 13.0 - 32.6       |
| STW-951              | 05/22/02 | Ra-226              | 5.9 ± 0.5                      | 6.1 ± 0.9               | 4.5 - 7.7         |
| STW-951              | 05/22/02 | Ra-228              | 5.6 ± 0.9                      | 4.5 ± 1.1               | 2.6 - 6.5         |
| STW-951              | 05/22/02 | Uranium             | 7.6 ± 0.2                      | 9.3 ± 3.0               | 4.1 - 14.5        |
| STW-952              | 05/22/02 | Co-60               | 37.9 ± 0.7                     | 39.1 ± 5.0              | 30.4 - 47.8       |
| STW-952              | 05/22/02 | Cs-134              | 14.5 ± 0.8                     | 17.1 ± 5.0              | 8.4 - 25.8        |
| STW-952              | 05/22/02 | Cs-137              | 50.0 ± 2.0                     | 52.1 ± 5.0              | 43.4 - 60.8       |
| STW-952              | 05/22/02 | Gr. Beta            | 171.0 ± 2.5                    | 189.0 ± 28.4            | 140.0 - 238.0     |
| STW-952              | 05/22/02 | Sr-89               | 28.4 ± 4.8                     | 31.7 ± 5.0              | 23.0 - 40.4       |
| STW-952              | 05/22/02 | Sr-90               | 32.4 ± 3.1                     | 28.3 ± 5.0              | 19.6 - 37.0       |
| STW-953 <sup>d</sup> | 05/22/02 | H-3                 | 13900.0 ± 100.0                | 17400.0 ± 1740.0        | 14400.0 - 20400.0 |
| STW-954              | 05/22/02 | I-131               | 14.6 ± 0.3                     | 14.7 ± 2.0              | 11.2 - 18.2       |
| STW-965              | 08/21/02 | Ba-133              | 71.9 ± 2.1                     | 80.0 ± 8.0              | 66.4 - 93.6       |
| STW-965              | 08/21/02 | Co-60               | 23.8 ± 1.0                     | 23.3 ± 5.0              | 14.6 - 32.0       |
| STW-965              | 08/21/02 | Cs-134 <sup>e</sup> | 62.9 ± 1.2                     | 71.7 ± 5.0              | 63.0 - 80.4       |
| STW-965              | 08/21/02 | Cs-137              | 219.3 ± 10.7                   | 214.0 ± 10.7            | 195.0 - 233.0     |
| STW-965              | 08/21/02 | Gr. Alpha           | 74.4 ± 0.6                     | 58.8 ± 14.7             | 33.5 - 84.1       |
| STW-965              | 08/21/02 | Gr. Beta            | 26.7 ± 0.4                     | 21.9 ± 2.2              | 13.2 - 30.6       |
| STW-965              | 08/21/02 | Ra-226              | 5.0 ± 0.5                      | 5.0 ± 0.8               | 3.7 - 6.3         |
| STW-965              | 08/21/02 | Ra-228              | 6.0 ± 0.7                      | 4.7 ± 1.2               | 2.7 - 6.7         |
| STW-965              | 08/21/02 | Sr-89               | 28.4 ± 1.5                     | 29.0 ± 5.0              | 20.3 - 37.7       |
| STW-965              | 08/21/02 | Sr-90               | 36.5 ± 1.1                     | 36.4 ± 5.0              | 27.7 - 45.1       |
| STW-965              | 08/21/02 | Uranium             | 4.1 ± 0.1                      | 5.0 ± 3.0               | 0.0 - 10.2        |
| STW-965              | 08/21/02 | Zn-65               | 92.4 ± 2.2                     | 95.7 ± 9.6              | 79.4 - 112.0      |
| STW-966              | 11/20/02 | Gr. Alpha           | 9.3 ± 0.4                      | 12.2 ± 5.0              | 3.5 - 20.9        |
| STW-966              | 11/20/02 | Gr. Beta            | 44.7 ± 1.0                     | 47.0 ± 5.0              | 38.3 - 55.7       |
| STW-967              | 11/20/02 | H-3                 | 10100.0 ± 38.7                 | 10200.0 ± 1020.0        | 8440.0 - 12000.0  |
| STW-968              | 11/20/02 | Ra-226              | 11.6 ± 0.1                     | 12.1 ± 1.8              | 9.0 - 15.2        |
| STW-968              | 11/20/02 | Ra-228              | 16.0 ± 1.4                     | 15.1 ± 3.8              | 8.6 - 21.6        |
| STW-968              | 11/20/02 | Uranium             | 15.5 ± 0.5                     | 19.2 ± 3.0              | 14.0 - 24.4       |
| STW-969              | 11/20/02 | I-131               | 6.0 ± 0.4                      | 6.8 ± 2.0               | 3.3 - 10.2        |



TABLE IV-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA)<sup>a</sup>.

| Lab Code | Date     | Analysis  | Concentration (pCi/L)          |                         |                |
|----------|----------|-----------|--------------------------------|-------------------------|----------------|
|          |          |           | Laboratory Result <sup>b</sup> | ERA Result <sup>c</sup> | Control Limits |
| STW-970  | 11/20/02 | Co-60     | 104.0 ± 7.1                    | 104.0 ± 5.2             | 95.0 - 113.0   |
| STW-970  | 11/20/02 | Cs-134    | 48.2 ± 2.3                     | 55.5 ± 5.0              | 46.8 - 64.2    |
| STW-970  | 11/20/02 | Cs-137    | 109.0 ± 12.6                   | 117.0 ± 5.9             | 107.0 - 127.0  |
| STW-970  | 11/20/02 | Gr. Beta  | 252.0 ± 26.8                   | 288.0 ± 49.5            | 244.0 - 416.0  |
| STW-970  | 11/20/02 | Sr-89     | 43.2 ± 0.7                     | 47.6 ± 5.0              | 38.9 - 56.3    |
| STW-970  | 11/20/02 | Sr-90     | 7.5 ± 0.2                      | 7.6 ± 5.0               | 0.0 - 16.2     |
| STW-971  | 11/20/02 | Gr. Alpha | 74.9 ± 1.5                     | 103.0 ± 25.8            | 58.4 - 148.0   |
| STW-971  | 11/20/02 | Ra-226    | 8.9 ± 0.0                      | 9.1 ± 1.4               | 6.7 - 11.5     |
| STW-971  | 11/20/02 | Ra-228    | 15.3 ± 0.1                     | 17.8 ± 4.5              | 10.1 - 25.5    |
| STW-971  | 11/20/02 | Uranium   | 51.7 ± 1.6                     | 61.7 ± 6.2              | 51.0 - 72.4    |

<sup>a</sup> Results obtained by Environmental, Inc., Midwest Laboratory as a participant in the environmental samples crosscheck program operated by Environmental Resources Associates (ERA).

<sup>b</sup> Unless otherwise indicated, the laboratory result is given as the mean ± standard deviation for three determinations.

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

<sup>d</sup> Analysis was repeated; result of reanalysis: 16114±487 pCi/L.

<sup>e</sup> ERA acknowledged an unacceptably high percentage of failure for Cs-134 and questioned its own control limits.

No problems were identified in the analysis.

TABLE IV-2. Crosscheck program results; Thermoluminescent Dosimetry, (TLDs).

| Lab Code  | TLD Type        | Date       | Measurement               | Known Value | mR                      |                |
|---|-----------------|------------|---------------------------|-------------|-------------------------|----------------|
|   |                 |            |                           |             | Lab Result<br>± 2 sigma | Control Limits |
| <u>Environmental, Inc.</u>  |                 |            |                           |             |                         |                |
| 2001-1  | CaSO4: Dy Cards | 12/24/2001 | Reader 1, #1              | 3.98        | 3.71 ± 0.12             | 2.79 - 5.17    |
| 2001-1  | CaSO4: Dy Cards | 12/24/2001 | Reader 1, #1              | 3.98        | 3.38 ± 0.09             | 2.79 - 5.17    |
| 2001-1  | CaSO4: Dy Cards | 12/24/2001 | Reader 1, #2              | 7.07        | 7.89 ± 0.18             | 4.95 - 9.19    |
| 2001-1  | CaSO4: Dy Cards | 12/24/2001 | Reader 1, #2              | 7.07        | 7.64 ± 0.25             | 4.95 - 9.19    |
| 2001-1  | CaSO4: Dy Cards | 12/24/2001 | Reader 1, #3              | 15.9        | 18.62 ± 0.40            | 11.13 - 20.67  |
| 2001-1  | CaSO4: Dy Cards | 12/24/2001 | Reader 1, #3              | 15.9        | 19.58 ± 0.12            | 11.13 - 20.67  |
| 2001-1  | CaSO4: Dy Cards | 12/24/2001 | Reader 1, #4              | 63.61       | 78.24 ± 1.23            | 44.53 - 82.69  |
| 2001-1  | CaSO4: Dy Cards | 12/24/2001 | Reader 1, #4              | 63.61       | 79.89 ± 2.47            | 44.53 - 82.69  |
| <u>Environmental, Inc.</u>  |                 |            |                           |             |                         |                |
| 2002-1  | CaSO4: Dy Cards | 5/28/2002  | Reader 1, #1              | 4.84        | 4.44 ± 0.16             | 3.39 - 6.29    |
| 2002-1  | CaSO4: Dy Cards | 5/28/2002  | Reader 1, #1              | 4.84        | 4.37 ± 0.20             | 3.39 - 6.29    |
| 2002-1  | CaSO4: Dy Cards | 5/28/2002  | Reader 1, #2              | 8.60        | 9.08 ± 0.14             | 6.02 - 11.18   |
| 2002-1  | CaSO4: Dy Cards | 5/28/2002  | Reader 1, #2              | 8.60        | 8.76 ± 0.16             | 6.02 - 11.18   |
| 2002-1  | CaSO4: Dy Cards | 5/28/2002  | Reader 1, #3              | 19.34       | 22.14 ± 0.27            | 13.54 - 25.14  |
| 2002-1  | CaSO4: Dy Cards | 5/28/2002  | Reader 1, #3              | 19.34       | 24.03 ± 0.30            | 13.54 - 25.14  |
| 2002-1  | CaSO4: Dy Cards | 5/28/2002  | Reader 1, #4              | 77.36       | 92.77 ± 0.58            | 54.15 - 100.57 |
| 2002-1  | CaSO4: Dy Cards | 5/28/2002  | Reader 1, #4              | 77.36       | 85.25 ± 0.37            | 54.15 - 100.57 |
| <u>Environmental, Inc.</u>  |                 |            |                           |             |                         |                |
| 2002-2  | CaSO4: Dy Cards | 12/13/2002 | Reader 1, 30              | 56.73       | 71.61 ± 1.79            | 39.71 - 73.75  |
| 2002-2  | CaSO4: Dy Cards | 12/13/2002 | Reader 1, 45 <sup>a</sup> | 25.21       | 33.49 ± 1.38            | 17.65 - 32.77  |
| <sup>a</sup> Precision of the distance (cm) measurement can significantly increase the error. The placement of the card holder on the table could account for the higher error. |                 |            |                           |             |                         |                |
| 2002-2  | CaSO4: Dy Cards | 12/13/2002 | Reader 1, 60              | 14.18       | 17.37 ± 1.24            | 9.93 - 18.43   |
| 2002-2  | CaSO4: Dy Cards | 12/13/2002 | Reader 1, 75              | 9.08        | 10.65 ± 1.02            | 6.36 - 11.80   |
| 2002-2  | CaSO4: Dy Cards | 12/13/2002 | Reader 1, 90              | 6.30        | 6.37 ± 0.54             | 4.41 - 8.19    |
| 2002-2  | CaSO4: Dy Cards | 12/13/2002 | Reader 1, 120             | 3.55        | 4.60 ± 0.41             | 2.49 - 4.62    |
| 2002-2  | CaSO4: Dy Cards | 12/13/2002 | Reader 1, 135             | 2.80        | 2.51 ± 0.23             | 1.96 - 3.64    |
| 2002-2  | CaSO4: Dy Cards | 12/13/2002 | Reader 1, 150             | 2.28        | 2.22 ± 0.28             | 1.60 - 2.96    |

<sup>c</sup> Control limits are based on Attachment A, Page IV3 of this report.

TABLE IV-3. In-House "Spike" Samples

| Lab Code  | Sample Type | Date      | Analysis  | Concentration (pCi/L) <sup>a</sup>         |                |                             |
|-----------|-------------|-----------|-----------|--|----------------|-----------------------------|
|           |             |           |           | Laboratory results<br>2s, n=1 <sup>b</sup> | Known Activity | Control Limits <sup>c</sup> |
| SPW-11552 | Water       | 1/7/2002  | Gr. Alpha | 35.33 ± 1.83                               | 34.57          | 17.29 - 51.86               |
| SPW-11552 | Water       | 1/7/2002  | Gr. Beta  | 112.62 ± 2.44                              | 107.70         | 96.93 - 118.47              |
| SPMI-595  | Milk        | 1/31/2002 | Cs-134    | 29.63 ± 4.98                               | 27.10          | 17.10 - 37.10               |
| SPMI-595  | Milk        | 1/31/2002 | Cs-137    | 51.31 ± 7.55                               | 50.89          | 40.89 - 60.89               |
| SPMI-597  | Milk        | 1/31/2002 | Co-60     | 44.18 ± 7.76                               | 41.36          | 31.36 - 51.36               |
| SPMI-597  | Milk        | 1/31/2002 | Cs-134    | 20.15 ± 5.08                               | 22.59          | 12.59 - 32.59               |
| SPMI-597  | Milk        | 1/31/2002 | Cs-137    | 54.88 ± 8.32                               | 50.89          | 40.89 - 60.89               |
| SPAP-594  | Air Filter  | 2/6/2002  | Gr. Beta  | 1.58 ± 0.02                                | 1.55           | 0.00 - 11.55                |
| SPW-599   | Water       | 2/19/2002 | H-3       | 47607 ± 595                                | 50189          | 40151 ± 60227               |
| SPMI-1446 | Milk        | 3/8/2002  | I-131(G)  | 87.84 ± 11.47                              | 85.20          | 75.20 - 95.20               |
| SPW-1446  | Water       | 3/8/2002  | I-131     | 82.98 ± 1.20                               | 85.20          | 68.16 - 102.24              |
| SPW-1446  | Water       | 3/8/2002  | I-131(G)  | 92.75 ± 12.87                              | 85.20          | 75.20 - 95.20               |
| SPMI-1448 | Milk        | 3/8/2002  | I-131     | 88.00 ± 1.13                               | 85.20          | 68.16 - 102.24              |
| SPVE-1444 | Vegetation  | 3/11/2002 | I-131(G)  | 0.39 ± 0.04                                | 0.42           | 0.25 - 0.58                 |
| SPAP-2078 | Air Filter  | 4/8/2002  | Gr. Beta  | 1.43 ± 0.01                                | 1.55           | 0.00 - 11.55                |
| SPW-2080  | Water       | 4/5/2002  | H-3       | 49121 ± 608                                | 46912          | 37530 ± 56294               |
| SPF-2082  | Fish        | 4/5/2002  | Cs-134    | 0.83 ± 0.04                                | 0.83           | 0.50 - 1.16                 |
| SPF-2082  | Fish        | 4/5/2002  | Cs-137    | 1.29 ± 0.07                                | 1.35           | 0.81 - 1.89                 |
| SPMI-2084 | Milk        | 4/8/2002  | Cs-134    | 20.93 ± 5.82                               | 24.69          | 14.69 - 34.69               |
| SPMI-2084 | Milk        | 4/8/2002  | Cs-137    | 51.83 ± 10.23                              | 50.56          | 40.56 - 60.56               |
| SPMI-2084 | Milk        | 4/8/2002  | I-131     | 87.72 ± 1.28                               | 88.37          | 70.70 - 106.04              |
| SPMI-2084 | Milk        | 4/8/2002  | I-131(G)  | 84.08 ± 10.75                              | 88.37          | 78.37 - 98.37               |
| SPMI-2084 | Milk        | 4/8/2002  | Sr-90     | 62.81 ± 1.99                               | 66.85          | 53.48 - 80.22               |
| SPW-2115  | Water       | 4/8/2002  | I-131     | 82.42 ± 1.27                               | 88.37          | 70.70 - 106.04              |
| SPW-2116  | Water       | 4/8/2002  | Co-60     | 32.47 ± 5.78                               | 33.09          | 23.09 - 43.09               |
| SPW-2116  | Water       | 4/8/2002  | Cs-134    | 30.80 ± 3.60                               | 28.80          | 18.80 - 38.80               |
| SPW-2116  | Water       | 4/8/2002  | Cs-137    | 53.85 ± 7.07                               | 50.56          | 40.56 - 60.56               |
| SPW-2116  | Water       | 4/8/2002  | I-131(G)  | 79.09 ± 7.58                               | 88.37          | 78.37 - 98.37               |
| SPW-2116  | Water       | 4/8/2002  | Sr-90     | 70.35 ± 2.32                               | 66.85          | 53.48 - 80.22               |
| SPW-2019  | Water       | 5/3/2002  | Gr. Alpha | 25.89 ± 1.71                               | 34.57          | 17.29 - 51.86               |
| SPW-2019  | Water       | 5/3/2002  | Gr. Beta  | 101.19 ± 2.37                              | 107.70         | 96.93 - 118.47              |
| SPCH-3064 | Charcoal    | 5/11/2002 | I-131(G)  | 0.74 ± 0.04                                | 0.85           | 0.51 - 1.18                 |
| SPW-4682  | Water       | 7/17/2002 | H-3       | 40856 ± 548                                | 46179          | 36943 ± 55415               |
| SPAP-4685 | Air Filter  | 7/17/2002 | Gr. Beta  | 1.58 ± 0.02                                | 1.55           | 0.00 - 11.55                |
| W-71702S  | Water       | 7/17/2002 | Fe-55     | 10463.00 ± 126.00                          | 12200.60       | 9760.48 - 14640.72          |
| W-71702S  | Water       | 07/17/02  | H-3       | 45779 ± 583                                | 46179          | 36943 ± 55415               |
| W-71702S  | Water       | 07/17/02  | Ni-63     | 17.02 ± 1.50                               | 17.10          | 10.26 - 23.94               |
| SPVE-4910 | Vegetation  | 07/22/02  | Sr-90     | 10.22 ± 0.80                               | 9.04           | 0.00 - 19.04                |
| W-72302S  | Water       | 07/23/02  | Sr-90     | 21.43 ± 0.97                               | 26.55          | 16.55 - 36.55               |
| W-80102S  | Water       | 08/01/02  | Gr. Alpha | 41.25 ± 4.58                               | 34.45          | 17.23 - 51.68               |
| W-80102S  | Water       | 08/01/02  | Gr. Beta  | 113.66 ± 5.30                              | 107.70         | 96.93 - 118.47              |
| W-80202S  | Water       | 08/02/02  | Tc-99     | 16.39 ± 0.72                               | 14.13          | 2.13 - 26.13                |
| SPW-7188  | Water       | 10/25/02  | Fe-55     | 20396 ± 265                                | 22778          | 18222 - 27334               |
| SPW-7190  | Water       | 10/25/02  | Ni-63     | 227.18 ± 11.60                             | 170.80         | 102.48 - 239.12             |

TABLE IV-3. In-House "Spike" Samples

| Lab Code  | Sample Type | Date     | Analysis | Concentration (pCi/L)                      |                |                             |
|-----------|-------------|----------|----------|--|----------------|-----------------------------|
|           |             |          |          | Laboratory results<br>2s, n=1 <sup>b</sup> | Known Activity | Control Limits <sup>c</sup> |
| SPW-7192  | Water       | 10/25/02 | H-3      | 96310 ± 871                                | 90963          | 72770 - 109156              |
| SPW-7194  | Water       | 10/25/02 | C-14     | 42938 ± 167                                | 49661          | 29796 - 69525               |
| SPAP-7198 | Air Filter  | 10/25/02 | Gr. Beta | 1.65 ± 0.02                                | 1.53           | 0.00 - 11.53                |
| SPW-7335  | Water       | 10/30/02 | Co-60    | 39.67 ± 7.38                               | 37.05          | 27.05 - 47.05               |
| SPW-7335  | Water       | 10/30/02 | Cs-134   | 33.09 ± 5.96                               | 34.11          | 24.11 - 44.11               |
| SPW-7335  | Water       | 10/30/02 | Cs-137   | 46.80 ± 10.39                              | 49.90          | 39.90 - 59.90               |
| SPMI-7336 | Milk        | 10/30/02 | Cs-134   | 34.40 ± 4.99                               | 34.11          | 24.11 - 44.11               |
| SPMI-7336 | Milk        | 10/30/02 | Cs-137   | 46.52 ± 8.52                               | 49.91          | 39.91 - 59.91               |
| SPF-7340  | Fish        | 10/30/02 | Cs-134   | 0.66 ± 0.03                                | 0.68           | 0.41 - 0.95                 |
| SPF-7340  | Fish        | 10/30/02 | Cs-137   | 1.35 ± 0.05                                | 1.33           | 0.80 - 1.86                 |
| SPS-8102  | Sediment    | 11/01/02 | Sr-90    | 14.69 ± 0.67                               | 13.45          | 3.45 - 23.45                |

<sup>a</sup> Results are reported in units of pCi/L, except for air filters (pCi/Filter), food products, vegetation, soil, sediment (pCi/g).

<sup>b</sup> Results are based on single determinations.

<sup>c</sup> Control limits are based on Attachment A, Page IV3 of this report.

NOTE: For fish, Jello is used for the Spike matrix. For Vegetation, cabbage is used for the Spike matrix.

TABLE IV-4. In-House "Blank" Samples

| Lab Code  | Sample Type       | Date      | Analysis  | Concentration (pCi/L) <sup>a</sup> |                       |                              |
|-----------|-------------------|-----------|-----------|------------------------------------|-----------------------|------------------------------|
|           |                   |           |           | Laboratory results (4.66σ)         |                       | Acceptance Criteria (4.66 σ) |
|           |                   |           |           | LLD                                | Activity <sup>b</sup> |                              |
| SPW-11551 | water             | 1/7/2002  | Gr. Alpha | 0.47                               | 0.45 ± 0.39           | 1                            |
| SPW-11551 | water             | 1/7/2002  | Gr. Beta  | 1.37                               | 0.55 ± 1.03           | 3.2                          |
| SPAP-590  | Air Filter        | 1/31/2002 | Co-60     | 1.78                               |                       | 100                          |
| SPAP-590  | Air Filter        | 1/31/2002 | Cs-134    | 3.42                               |                       | 100                          |
| SPAP-590  | Air Filter        | 1/31/2002 | Cs-137    | 2.33                               |                       | 100                          |
| SPAP-590  | Air Filter        | 1/31/2002 | Gr. Beta  | 0.74                               | -0.096 ± 0.38         | 3.2                          |
| SPMI-596  | Milk              | 1/31/2002 | Co-60     | 3.54                               |                       | 10                           |
| SPMI-596  | Milk              | 1/31/2002 | Cs-134    | 3.24                               |                       | 10                           |
| SPMI-596  | Milk              | 1/31/2002 | Cs-137    | 3.89                               |                       | 10                           |
| SPMI-596  | Milk              | 1/31/2002 | K-40      |                                    | 1472.1 ± 101.50       | 0                            |
| SPW-598   | water             | 1/31/2002 | Co-60     | 2.30                               |                       | 10                           |
| SPW-598   | water             | 1/31/2002 | Cs-134    | 3.74                               |                       | 10                           |
| SPW-598   | water             | 1/31/2002 | Cs-137    | 3.23                               |                       | 10                           |
| SPW-600   | water             | 1/31/2002 | H-3       | 138.80                             | -96.5 ± 63.40         | 200                          |
| SPMI-1447 | Milk              | 3/7/2002  | I-131(G)  | 7.63                               |                       | 20                           |
| SPVE-1443 | Vegetation        | 3/8/2002  | I-131(G)  | 0.02                               |                       | 20                           |
| SPW-1445  | water             | 3/8/2002  | Co-60     | 2.76                               |                       | 10                           |
| SPW-1445  | water             | 3/8/2002  | Cs-134    | 2.87                               |                       | 10                           |
| SPW-1445  | water             | 3/8/2002  | Cs-137    | 4.34                               |                       | 10                           |
| SPW-1445  | water             | 3/8/2002  | I-131     | 0.45                               | 0.17 ± 0.31           | 0.5                          |
| SPW-1445  | water             | 3/8/2002  | I-131(G)  | 6.50                               |                       | 20                           |
| SPMI-1447 | Milk              | 3/8/2002  | I-131     | 0.31                               | 0.15 ± 0.22           | 0.5                          |
| SPAP-2077 | Air Filter        | 4/8/2002  | Gr. Beta  | 0.32                               | -0.055 ± 0.19         | 3.2                          |
| SPW-2079  | water             | 4/5/2002  | H-3       | 134.17                             | 16.13 ± 67.39         | 200                          |
| SPF-2081  | Fish              | 4/5/2002  | Cs-134    | 7.67                               |                       | 100                          |
| SPF-2081  | Fish              | 4/5/2002  | Cs-137    | 9.54                               |                       | 100                          |
| SPMI-2083 | Milk              | 4/8/2002  | Cs-134    | 2.90                               |                       | 10                           |
| SPMI-2083 | Milk              | 4/8/2002  | Cs-137    | 3.03                               |                       | 10                           |
| SPMI-2083 | Milk              | 4/8/2002  | I-131     | 0.52                               | -0.38 ± 0.34          | 0.5                          |
| SPMI-2083 | Milk <sup>c</sup> | 4/8/2002  | Sr-90     | 0.48                               | 1.29 ± 0.36           | 1                            |
| SPW-2115  | water             | 4/8/2002  | Co-60     | 1.49                               |                       | 10                           |
| SPW-2115  | water             | 4/8/2002  | Cs-134    | 2.09                               |                       | 10                           |
| SPW-2115  | water             | 4/8/2002  | Cs-137    | 3.78                               |                       | 10                           |
| SPW-2115  | water             | 4/8/2002  | I-131     | 0.50                               | -0.16 ± 0.33          | 0.5                          |
| SPW-2115  | water             | 4/8/2002  | I-131(G)  | 3.30                               |                       | 20                           |
| SPW-2115  | water             | 4/8/2002  | Sr-90     | 0.66                               | 0.10 ± 0.32           | 1                            |
| SPW-2018  | water             | 4/22/2002 | Gr. Alpha | 0.56                               | -0.24 ± 0.38          | 1                            |
| SPW-2018  | water             | 4/22/2002 | Gr. Beta  | 1.38                               | 3.19 ± 1.03           | 3.2                          |
| SPch-3063 | Charcoal          | 5/11/2002 | I-131(G)  | 8.27                               |                       | 9.6                          |
| SPW-4683  | water             | 7/17/2002 | H-3       | 129.00                             | -62.8 ± 60.30         | 200                          |
| W-71702   | water             | 7/17/2002 | Fe-55     | 33.61                              | -1.72 ± 15.63         | 1000                         |
| W-71702   | water             | 7/17/2002 | Ni-63     | 2.56                               | 0.71 ± 1.37           | 20                           |
| W-71802B  | water             | 7/18/2002 | Gr. Alpha | 0.48                               | 0.31 ± 0.36           | 1                            |
| W-71802B  | water             | 7/18/2002 | Gr. Beta  | 1.33                               | 0.9 ± 0.95            | 3.2                          |

TABLE IV-4. In-House "Blank" Samples

| Lab Code  | Sample Type | Date       | Analysis | Concentration (pCi/L) <sup>a</sup> |                       |                   |
|-----------|-------------|------------|----------|------------------------------------|-----------------------|-------------------|
|           |             |            |          | Laboratory results (4.66σ)         |                       | Acceptance        |
|           |             |            |          | LLD                                | Activity <sup>b</sup> | Criteria (4.66 σ) |
| W-72302   | water       | 7/23/2002  | Sr-90    | 0.27                               | 0.027 ± 0.13          | 1                 |
| W-80202   | water       | 8/2/2002   | Tc-99    | 0.34                               | -0.051 ± 0.16         | 10                |
| SPW-7189  | water       | 10/25/2002 | Fe-55    | 978.21                             | 21.77 ± 595.33        | 1000              |
| SPW-7191  | water       | 10/25/2002 | Ni-63    | 11.74                              | 4.47 ± 7.24           | 20                |
| SPW-7193  | water       | 10/25/2002 | H-3      | 146.00                             | -92 ± 65.00           | 200               |
| SPAP-7199 | Air Filter  | 10/25/2002 | Gr. Beta | 0.00                               | -0.0024 ± 0.00        | 3.2               |
| SPMI-7333 | Milk        | 10/30/2002 | Cs-134   | 5.30                               |                       | 10                |
| SPMI-7333 | Milk        | 10/30/2002 | Cs-137   | 4.80                               |                       | 10                |
| SPW-7334  | water       | 10/30/2002 | Co-60    | 3.69                               |                       | 10                |
| SPW-7334  | water       | 10/30/2002 | Cs-134   | 5.37                               |                       | 10                |
| SPW-7334  | water       | 10/30/2002 | Cs-137   | 3.90                               |                       | 10                |
| SPF-7339  | Fish        | 10/30/2002 | Cs-134   | 4.69                               |                       | 100               |
| SPF-7339  | Fish        | 10/30/2002 | Cs-137   | 11.18                              |                       | 100               |

<sup>a</sup> Liquid sample results are reported in pCi/Liter, air filters( pCi/filter), charcoal (pCi/charcoal canister), and solid samples (pCi/kg).

<sup>b</sup> The activity reported is the net activity result.

<sup>c</sup> Low levels of Sr-90 are still detected in the environment. A concentration of (1-5 pCi/L) in milk is not unusual.

TABLE IV-5. In-House "Duplicate" Samples

| Lab Code        | Date      | Analysis  | Concentration (pCi/L) <sup>a</sup> |                  | Averaged Result  |
|-----------------|-----------|-----------|------------------------------------|------------------|------------------|
|                 |           |           | First Result                       | Second Result    |                  |
| CF-20, 21       | 1/2/2002  | Be-7      | 0.47 ± 0.25                        | 0.37 ± 0.12      | 0.42 ± 0.14      |
| CF-20, 21       | 1/2/2002  | Gr. Beta  | 7.82 ± 0.20                        | 7.95 ± 0.21      | 7.89 ± 0.14      |
| CF-20, 21       | 1/2/2002  | K-40      | 6.65 ± 0.55                        | 6.53 ± 0.36      | 6.59 ± 0.33      |
| CF-20, 21       | 1/2/2002  | Sr-90     | 0.01 ± 0.01                        | 0.01 ± 0.01      | 0.01 ± 0.00      |
| AP-11804, 11805 | 1/2/2002  | Be-7      | 0.054 ± 0.011                      | 0.049 ± 0.019    | 0.052 ± 0.011    |
| AP-11825, 11826 | 1/2/2002  | Be-7      | 0.053 ± 0.013                      | 0.043 ± 0.013    | 0.048 ± 0.009    |
| AP-11846, 11847 | 1/2/2002  | Be-7      | 0.054 ± 0.018                      | 0.048 ± 0.016    | 0.051 ± 0.012    |
| WW-150, 151     | 1/7/2002  | Gr. Beta  | 1.26 ± 0.50                        | 1.04 ± 0.46      | 1.15 ± 0.34      |
| MI-124, 125     | 1/8/2002  | K-40      | 1332.30 ± 158.90                   | 1271.70 ± 151.50 | 1302.00 ± 109.77 |
| W-172, 173      | 1/8/2002  | H-3       | 153.00 ± 68.00                     | 148.00 ± 68.00   | 150.50 ± 48.08   |
| SW-11698, 11699 | 1/8/2002  | Gr. Alpha | 2.51 ± 1.36                        | 3.71 ± 1.80      | 3.11 ± 1.13      |
| SW-11698, 11699 | 1/8/2002  | Gr. Beta  | 7.68 ± 1.33                        | 8.49 ± 1.43      | 8.09 ± 0.98      |
| U-275, 276      | 1/10/2002 | Gr. Alpha | 1.40 ± 1.00                        | 1.10 ± 1.20      | 1.25 ± 0.78      |
| LW-356, 357     | 1/16/2002 | Gr. Beta  | 3.47 ± 0.65                        | 2.94 ± 0.61      | 3.21 ± 0.45      |
| LW-377, 378     | 1/16/2002 | Gr. Beta  | 2.75 ± 0.68                        | 2.84 ± 0.61      | 2.79 ± 0.46      |
| SW-525, 526     | 1/30/2002 | Gr. Alpha | 0.56 ± 0.35                        | 0.24 ± 0.35      | 0.40 ± 0.25      |
| SW-525, 526     | 1/30/2002 | Gr. Beta  | 2.29 ± 0.41                        | 2.58 ± 0.39      | 2.43 ± 0.28      |
| DW-504, 505     | 1/31/2002 | Gr. Alpha | 2.30 ± 1.70                        | 3.90 ± 1.40      | 3.10 ± 1.10      |
| MI-649, 650     | 2/5/2002  | K-40      | 1319.40 ± 176.70                   | 1210.80 ± 118.20 | 1265.10 ± 106.29 |
| DW-697, 698     | 2/6/2002  | Gr. Beta  | 5.10 ± 1.20                        | 4.70 ± 1.20      | 4.90 ± 0.85      |
| DW-927, 928     | 2/8/2002  | Sr-90     | 0.69 ± 0.29                        | 0.71 ± 0.29      | 0.70 ± 0.21      |
| W-973, 974      | 2/18/2002 | Fe-55     | 7.29 ± 0.97                        | 6.86 ± 0.94      | 7.08 ± 0.68      |
| W-1673, 1674    | 2/25/2002 | H-3       | 2640.00 ± 155.00                   | 2908.00 ± 161.00 | 2774.00 ± 111.74 |
| SWT-1395, 1396  | 2/26/2002 | Gr. Beta  | 2.96 ± 0.59                        | 2.29 ± 0.53      | 2.63 ± 0.40      |
| MI-1268, 1269   | 2/27/2002 | K-40      | 1460.50 ± 162.50                   | 1573.00 ± 168.00 | 1516.75 ± 116.87 |
| MI-1268, 1269   | 2/27/2002 | Sr-90     | 0.77 ± 0.36                        | 0.95 ± 0.40      | 0.86 ± 0.27      |
| MI-1332, 1333   | 3/5/2002  | K-40      | 1503.00 ± 164.00                   | 1305.00 ± 168.00 | 1404.00 ± 117.39 |
| MI-1332, 1333   | 3/5/2002  | Sr-90     | 1.35 ± 0.38                        | 1.07 ± 0.40      | 1.21 ± 0.28      |
| MI-1458, 1459   | 3/6/2002  | K-40      | 1411.70 ± 166.70                   | 1390.00 ± 172.30 | 1400.85 ± 119.87 |
| DW-10100, 10101 | 3/9/2002  | Gr. Alpha | 4.10 ± 1.70                        | 1.80 ± 1.60      | 2.95 ± 1.17      |
| DW-10111, 10112 | 3/9/2002  | Gr. Alpha | 7.10 ± 2.00                        | 8.30 ± 2.30      | 7.70 ± 1.52      |
| MI-1521, 1522   | 3/11/2002 | K-40      | 1270.80 ± 103.30                   | 1369.10 ± 121.60 | 1319.95 ± 79.78  |
| MI-1521, 1522   | 3/11/2002 | Sr-90     | 1.69 ± 0.46                        | 2.46 ± 0.49      | 2.07 ± 0.34      |
| MI-1541, 1542   | 3/11/2002 | K-40      | 1562.20 ± 122.80                   | 1529.30 ± 126.10 | 1545.75 ± 88.01  |
| MI-1541, 1542   | 3/11/2002 | Sr-90     | 0.85 ± 0.57                        | 1.48 ± 0.43      | 1.16 ± 0.36      |
| LW-1651, 1652   | 3/14/2002 | Gr. Beta  | 2.90 ± 0.57                        | 2.57 ± 0.56      | 2.74 ± 0.40      |
| DW-10134, 10135 | 3/16/2002 | Gr. Alpha | 5.60 ± 1.90                        | 5.40 ± 1.60      | 5.50 ± 1.24      |
| WW-1694, 1695   | 3/18/2002 | Gr. Beta  | 1.79 ± 0.59                        | 1.53 ± 0.50      | 1.66 ± 0.39      |
| SO-1715, 1716   | 3/19/2002 | Cs-137    | 0.03 ± 0.01                        | 0.02 ± 0.01      | 0.03 ± 0.01      |
| SO-1715, 1716   | 3/19/2002 | Gr. Beta  | 18.50 ± 1.70                       | 19.10 ± 1.70     | 18.80 ± 1.20     |
| DW-10302, 10303 | 3/20/2002 | Gr. Alpha | 2.30 ± 1.40                        | 3.30 ± 1.60      | 2.80 ± 1.06      |
| W-1758, 1759    | 3/25/2002 | Gr. Alpha | 2.50 ± 0.70                        | 2.30 ± 0.60      | 2.40 ± 0.46      |
| W-1758, 1759    | 3/25/2002 | Gr. Beta  | 4.10 ± 1.20                        | 2.50 ± 1.10      | 3.30 ± 0.81      |

TABLE IV-5. In-House "Duplicate" Samples

| Lab Code        | Date      | Analysis  | Concentration (pCi/L) <sup>a</sup> |                   | Averaged Result   |
|-----------------|-----------|-----------|------------------------------------|-------------------|-------------------|
|                 |           |           | First Result                       | Second Result     |                   |
| MI-1926, 1927   | 3/26/2002 | K-40      | 1414.00 ± 115.00                   | 1316.00 ± 128.00  | 1365.00 ± 86.04   |
| MI-1926, 1927   | 3/26/2002 | Sr-90     | 2.30 ± 0.70                        | 2.40 ± 0.70       | 2.35 ± 0.49       |
| SWU-2010, 2011  | 3/26/2002 | Gr. Beta  | 2.90 ± 0.60                        | 2.20 ± 0.50       | 2.55 ± 0.39       |
| DW-10376, 10377 | 3/27/2002 | Gr. Beta  | 10.50 ± 1.30                       | 10.10 ± 1.50      | 10.30 ± 0.99      |
| AP-2479, 2480   | 3/28/2002 | Be-7      | 0.064 ± 0.023                      | 0.068 ± 0.014     | 0.066 ± 0.013     |
| DW-10395, 10396 | 3/29/2002 | Gr. Alpha | 10.20 ± 2.10                       | 14.60 ± 2.40      | 12.40 ± 1.59      |
| LW-2181, 2182   | 3/31/2002 | Gr. Beta  | 2.98 ± 0.68                        | 1.99 ± 0.70       | 2.48 ± 0.49       |
| LW-2181, 2182   | 3/31/2002 | H-3       | 2694.43 ± 156.53                   | 2688.84 ± 156.40  | 2691.64 ± 110.64  |
| CW-2437, 2438   | 3/31/2002 | Gr. Beta  | 1.09 ± 0.61                        | 1.14 ± 0.58       | 1.11 ± 0.42       |
| CW-2437, 2438   | 3/31/2002 | H-3       | 6456.70 ± 229.20                   | 6292.80 ± 226.52  | 6374.75 ± 161.12  |
| MI-1947, 1948   | 4/1/2002  | K-40      | 1421.40 ± 130.90                   | 1256.80 ± 104.20  | 1339.10 ± 83.65   |
| AP-2458, 2459   | 4/1/2002  | Be-7      | 0.077 ± 0.011                      | 0.081 ± 0.010     | 0.079 ± 0.008     |
| DW-10409, 10410 | 4/1/2002  | Gr. Alpha | 39.30 ± 4.00                       | 35.30 ± 3.60      | 37.30 ± 2.69      |
| MI-2052, 2053   | 4/3/2002  | K-40      | 1283.70 ± 103.20                   | 1434.80 ± 147.90  | 1359.25 ± 90.17   |
| MI-2052, 2053   | 4/3/2002  | Sr-90     | 0.81 ± 0.36                        | 0.75 ± 0.35       | 0.78 ± 0.25       |
| AP-2711, 2712   | 4/3/2002  | Be-7      | 0.071 ± 0.01                       | 0.07 ± 0.01       | 0.07 ± 0.01       |
| W-938, 939      | 4/9/2002  | Ni-63     | 1.73 ± 0.10                        | 1.82 ± 0.10       | 1.78 ± 0.07       |
| SS-2202, 2203   | 4/9/2002  | Gr. Beta  | 5.83 ± 1.16                        | 5.52 ± 1.19       | 5.67 ± 0.83       |
| SS-2202, 2203   | 4/9/2002  | K-40      | 5.75 ± 0.48                        | 6.11 ± 0.51       | 5.93 ± 0.35       |
| F-2307, 2308    | 4/10/2002 | K-40      | 2.75 ± 0.27                        | 2.49 ± 0.32       | 2.62 ± 0.21       |
| DW-10476, 10477 | 4/12/2002 | Gr. Alpha | 5.10 ± 1.30                        | 3.90 ± 1.60       | 4.50 ± 1.03       |
| W-2244, 2245    | 4/15/2002 | Gr. Beta  | 1.70 ± 1.10                        | 1.60 ± 1.00       | 1.65 ± 0.74       |
| DW-10509, 10510 | 4/17/2002 | Gr. Alpha | 6.00 ± 2.00                        | 7.30 ± 1.80       | 6.65 ± 1.35       |
| SW-2690, 2691   | 4/24/2002 | Gr. Beta  | 2.25 ± 0.68                        | 2.15 ± 0.59       | 2.20 ± 0.45       |
| SO-2903, 2904   | 4/24/2002 | Be-7      | 1.22 ± 0.57                        | 0.78 ± 0.43       | 1.00 ± 0.36       |
| SO-2903, 2904   | 4/24/2002 | Cs-137    | 0.13 ± 0.05                        | 0.09 ± 0.05       | 0.11 ± 0.04       |
| SO-2903, 2904   | 4/24/2002 | K-40      | 21.06 ± 1.48                       | 19.91 ± 1.16      | 20.48 ± 0.94      |
| DW-10562, 10563 | 4/24/2002 | Gr. Alpha | 2.17 ± 1.13                        | 3.25 ± 1.54       | 2.71 ± 0.96       |
| DW-10578, 10579 | 4/29/2002 | Gr. Alpha | 8.20 ± 2.20                        | 7.40 ± 2.00       | 7.80 ± 1.49       |
| SO-2861, 2862   | 4/30/2002 | Cs-137    | 236.40 ± 46.00                     | 200.70 ± 52.60    | 218.55 ± 34.94    |
| SO-2861, 2862   | 4/30/2002 | K-40      | 10191.00 ± 784.60                  | 11025.00 ± 941.30 | 10608.00 ± 612.71 |
| SL-2819, 2820   | 5/1/2002  | Be-7      | 805.70 ± 301.50                    | 860.73 ± 164.80   | 833.22 ± 171.80   |
| SL-2819, 2820   | 5/1/2002  | Gr. Beta  | 5566.00 ± 124.00                   | 5359.00 ± 122.00  | 5462.50 ± 86.98   |
| SL-2819, 2820   | 5/1/2002  | K-40      | 5524.00 ± 632.90                   | 5277.50 ± 431.40  | 5400.75 ± 382.97  |
| SL-2840, 2841   | 5/1/2002  | Be-7      | 1010.00 ± 352.10                   | 872.95 ± 181.70   | 941.48 ± 198.11   |
| SL-2840, 2841   | 5/1/2002  | Gr. Beta  | 4399.00 ± 221.80                   | 4593.00 ± 276.00  | 4496.00 ± 177.04  |
| SL-2840, 2841   | 5/1/2002  | K-40      | 2422.80 ± 352.10                   | 2254.10 ± 371.40  | 2338.45 ± 255.89  |
| MI-2971, 2972   | 5/5/2002  | K-40      | 1338.90 ± 83.44                    | 1345.80 ± 100.90  | 1342.35 ± 65.47   |
| MI-2971, 2972   | 5/5/2002  | Sr-90     | 0.83 ± 0.47                        | 1.65 ± 0.46       | 1.24 ± 0.33       |
| DW-10603, 10604 | 5/6/2002  | Gr. Alpha | 6.30 ± 1.70                        | 5.50 ± 1.60       | 5.90 ± 1.17       |
| SS-3037, 3038   | 5/9/2002  | K-40      | 11585.00 ± 749.00                  | 11612.00 ± 787.00 | 11598.50 ± 543.22 |
| MI-3124, 3125   | 5/13/2002 | K-40      | 1329.50 ± 103.80                   | 1373.00 ± 107.40  | 1351.25 ± 74.68   |
| MI-3208, 3209   | 5/14/2002 | K-40      | 1494.60 ± 158.40                   | 1462.60 ± 182.50  | 1478.60 ± 120.83  |
| LW-3250, 3251   | 5/15/2002 | Gr. Beta  | 3.14 ± 0.55                        | 3.28 ± 0.63       | 3.21 ± 0.42       |



TABLE IV-5. In-House "Duplicate" Samples

| Lab Code        | Date      | Analysis  | Concentration (pCi/L) <sup>a</sup> |                  | Averaged Result  |
|-----------------|-----------|-----------|------------------------------------|------------------|------------------|
|                 |           |           | First Result                       | Second Result    |                  |
| CF-3292, 3293   | 5/20/2002 | K-40      | 1.33 ± 0.99                        | 1.14 ± 0.91      | 1.23 ± 0.67      |
| MI-3376, 3377   | 5/26/2002 | K-40      | 1333.30 ± 159.40                   | 1090.70 ± 143.40 | 1212.00 ± 107.21 |
| MI-3418, 3419   | 5/28/2002 | K-40      | 1423.70 ± 121.30                   | 1443.30 ± 164.30 | 1433.50 ± 102.11 |
| SWT-3461, 3462  | 5/28/2002 | Gr. Beta  | 2.65 ± 0.54                        | 3.28 ± 0.60      | 2.97 ± 0.40      |
| SO-3503, 3504   | 5/29/2002 | Cs-137    | 0.17 ± 0.04                        | 0.18 ± 0.05      | 0.18 ± 0.03      |
| SO-3503, 3504   | 5/29/2002 | Gr. Beta  | 27.72 ± 2.26                       | 25.45 ± 2.03     | 26.58 ± 1.52     |
| SO-3503, 3504   | 5/29/2002 | K-40      | 20.24 ± 1.19                       | 20.54 ± 1.24     | 20.39 ± 0.86     |
| SL-3545, 3546   | 6/3/2002  | Gr. Beta  | 4436.00 ± 90.00                    | 4281.00 ± 89.00  | 4358.50 ± 63.29  |
| SL-3545, 3546   | 6/3/2002  | K-40      | 4684.20 ± 734.40                   | 5242.50 ± 884.50 | 4963.35 ± 574.82 |
| DW-10754, 10755 | 6/6/2002  | Sr-90     | 0.50 ± 0.30                        | 0.60 ± 0.30      | 0.55 ± 0.21      |
| SW-3777, 3778   | 6/11/2002 | Gr. Alpha | 4.42 ± 1.50                        | 2.97 ± 1.40      | 3.70 ± 1.02      |
| SW-3777, 3778   | 6/11/2002 | Gr. Beta  | 7.57 ± 1.22                        | 6.83 ± 1.16      | 7.20 ± 0.84      |
| MI-3798, 3799   | 6/11/2002 | K-40      | 1433.40 ± 124.20                   | 1401.20 ± 96.96  | 1417.30 ± 78.78  |
| LW-3924, 3925   | 6/13/2002 | Gr. Beta  | 3.05 ± 0.59                        | 3.38 ± 0.72      | 3.21 ± 0.46      |
| MI-3966, 3967   | 6/18/2002 | K-40      | 1245.20 ± 109.20                   | 1340.20 ± 121.90 | 1292.70 ± 81.83  |
| MI-3966, 3967   | 6/18/2002 | Sr-90     | 2.38 ± 0.51                        | 2.63 ± 0.52      | 2.51 ± 0.36      |
| MI-3987, 3988   | 6/19/2002 | Sr-90     | 0.98 ± 0.35                        | 0.97 ± 0.35      | 0.98 ± 0.25      |
| MI-4095, 4096   | 6/25/2002 | K-40      | 1256.10 ± 138.20                   | 1199.00 ± 128.30 | 1227.55 ± 94.29  |
| SWU-4221, 4222  | 6/25/2002 | Gr. Beta  | 6.89 ± 1.97                        | 5.38 ± 1.93      | 6.13 ± 1.38      |
| LW-4179, 4180   | 6/27/2002 | Gr. Beta  | 2.37 ± 0.58                        | 2.00 ± 0.62      | 2.19 ± 0.42      |
| G-4329, 4330    | 7/1/2002  | Be-7      | 1394.80 ± 538.40                   | 1098.10 ± 437.40 | 1246.45 ± 346.84 |
| G-4329, 4330    | 7/1/2002  | Gr. Beta  | 8.10 ± 0.27                        | 8.00 ± 0.25      | 8.05 ± 0.18      |
| G-4329, 4330    | 7/1/2002  | K-40      | 7758.20 ± 1100.00                  | 8399.80 ± 929.30 | 8079.00 ± 720.00 |
| SL-4337, 4338   | 7/1/2002  | Be-7      | 1480.90 ± 223.80                   | 1726.40 ± 552.60 | 1603.65 ± 298.10 |
| SL-4337, 4338   | 7/1/2002  | Cs-137    | 32.30 ± 14.70                      | 50.97 ± 27.10    | 41.64 ± 15.42    |
| SL-4337, 4338   | 7/1/2002  | Gr. Beta  | 5262.40 ± 522.10                   | 5432.40 ± 540.00 | 5347.40 ± 375.56 |
| SL-4337, 4338   | 7/1/2002  | K-40      | 2249.00 ± 381.90                   | 2989.90 ± 509.60 | 2619.45 ± 318.41 |
| AP-4864, 4865   | 7/1/2002  | Be-7      | 0.085 ± 0.009                      | 0.085 ± 0.006    | 0.085 ± 0.006    |
| MI-4359, 4360   | 7/2/2002  | K-40      | 1390.10 ± 168.30                   | 1567.40 ± 194.30 | 1478.75 ± 128.53 |
| AP-4569, 4570   | 7/2/2002  | Be-7      | 0.068 ± 0.016                      | 0.086 ± 0.018    | 0.077 ± 0.012    |
| AP-4843, 4844   | 7/2/2002  | Be-7      | 0.077 ± 0.016                      | 0.090 ± 0.020    | 0.084 ± 0.013    |
| AP-4789, 4790   | 7/3/2002  | Be-7      | 0.080 ± 0.013                      | 0.078 ± 0.015    | 0.079 ± 0.010    |
| SWU-4810, 4811  | 7/3/2002  | Gr. Beta  | 2.40 ± 0.84                        | 2.47 ± 0.88      | 2.43 ± 0.61      |
| MI-4548, 4549   | 7/9/2002  | K-40      | 1511.80 ± 127.00                   | 1446.80 ± 101.80 | 1479.30 ± 81.38  |
| DW-4737, 4738   | 7/12/2002 | I-131     | 0.52 ± 0.20                        | 0.49 ± 0.29      | 0.51 ± 0.18      |
| MI-4632, 4633   | 7/15/2002 | K-40      | 1198.40 ± 114.10                   | 1371.30 ± 146.90 | 1284.85 ± 93.00  |
| MI-5054, 5055   | 7/30/2002 | K-40      | 1428.80 ± 105.60                   | 1344.30 ± 106.40 | 1386.55 ± 74.95  |
| G-5075, 5076    | 7/30/2002 | Gr. Beta  | 7.11 ± 0.07                        | 6.99 ± 0.07      | 7.05 ± 0.05      |
| SWU-5124, 5125  | 7/30/2002 | Gr. Beta  | 1.75 ± 0.84                        | 1.90 ± 0.78      | 1.82 ± 0.57      |
| G-5151, 5152    | 7/31/2002 | Be-7      | 1.82 ± 0.30                        | 2.05 ± 0.32      | 1.93 ± 0.22      |
| G-5151, 5152    | 7/31/2002 | K-40      | 5.13 ± 0.66                        | 5.72 ± 0.70      | 5.42 ± 0.48      |
| MI-5103, 5104   | 8/2/2002  | K-40      | 1415.90 ± 70.57                    | 1423.80 ± 129.20 | 1419.85 ± 73.61  |
| LW-5434, 5435   | 8/5/2002  | Gr. Beta  | 2.77 ± 0.35                        | 2.26 ± 0.35      | 2.52 ± 0.25      |
| MI-5215, 5216   | 8/7/2002  | K-40      | 1361.10 ± 111.90                   | 1358.30 ± 115.80 | 1359.70 ± 80.52  |

TABLE IV-5. In-House "Duplicate" Samples

| Lab Code       | Date       | Analysis  | Concentration (pCi/L) <sup>a</sup> |                  | Averaged Result  |
|----------------|------------|-----------|------------------------------------|------------------|------------------|
|                |            |           | First Result                       | Second Result    |                  |
| MI-5355, 5356  | 8/13/2002  | K-40      | 1405.00 ± 165.80                   | 1549.30 ± 114.40 | 1477.15 ± 100.72 |
| F-5413, 5414   | 8/15/2002  | Gr. Beta  | 2.37 ± 0.10                        | 2.55 ± 0.10      | 2.46 ± 0.07      |
| F-5413, 5414   | 8/15/2002  | K-40      | 1.47 ± 0.32                        | 1.73 ± 0.43      | 1.60 ± 0.27      |
| MI-5603, 5604  | 8/26/2002  | I-131     | 0.64 ± 0.34                        | 0.52 ± 0.36      | 0.58 ± 0.25      |
| MI-5603, 5604  | 8/26/2002  | K-40      | 1353.60 ± 83.13                    | 1261.40 ± 117.80 | 1307.50 ± 72.09  |
| MI-5578, 5579  | 8/27/2002  | K-40      | 1301.50 ± 161.70                   | 1381.60 ± 111.20 | 1341.55 ± 98.12  |
| VE-5682, 5683  | 8/28/2002  | Be-7      | 0.29 ± 0.10                        | 0.25 ± 0.11      | 0.27 ± 0.08      |
| VE-5682, 5683  | 8/28/2002  | Gr. Beta  | 3.79 ± 0.08                        | 3.80 ± 0.08      | 3.79 ± 0.06      |
| VE-5682, 5683  | 8/28/2002  | K-40      | 3.06 ± 0.29                        | 3.31 ± 0.42      | 3.18 ± 0.25      |
| WW-6188, 6189  | 8/31/2002  | Gr. Beta  | 2.70 ± 0.57                        | 2.30 ± 0.57      | 2.50 ± 0.41      |
| SL-5724, 5725  | 9/3/2002   | Be-7      | 0.92 ± 0.19                        | 1.04 ± 0.23      | 0.98 ± 0.15      |
| SL-5724, 5725  | 9/3/2002   | Cs-137    | 0.05 ± 0.02                        | 0.05 ± 0.02      | 0.05 ± 0.01      |
| SL-5724, 5725  | 9/3/2002   | K-40      | 2.09 ± 0.31                        | 2.28 ± 0.48      | 2.19 ± 0.29      |
| MI-5877, 5878  | 9/9/2002   | K-40      | 1340.70 ± 165.00                   | 1168.50 ± 172.50 | 1254.60 ± 119.35 |
| MI-6157, 6158  | 9/19/2002  | K-40      | 1372.10 ± 115.10                   | 1136.50 ± 222.70 | 1254.30 ± 125.34 |
| MI-6258, 6259  | 9/24/2002  | K-40      | 1328.60 ± 201.00                   | 1312.60 ± 118.60 | 1320.60 ± 116.69 |
| LW-6278, 6279  | 9/30/2002  | Gr. Beta  | 2.15 ± 0.51                        | 1.70 ± 0.50      | 1.93 ± 0.36      |
| MI-6385, 6386  | 10/1/2002  | K-40      | 1297.10 ± 168.90                   | 1310.10 ± 128.30 | 1303.60 ± 106.05 |
| BS-6453, 6454  | 10/1/2002  | Cs-137    | 0.43 ± 0.03                        | 0.44 ± 0.03      | 0.44 ± 0.02      |
| BS-6453, 6454  | 10/1/2002  | K-40      | 16.50 ± 0.51                       | 16.80 ± 0.61     | 16.65 ± 0.40     |
| SO-6478, 6479  | 10/1/2002  | Cs-137    | 0.074 ± 0.016                      | 0.070 ± 0.016    | 0.072 ± 0.011    |
| SO-6478, 6479  | 10/1/2002  | Gr. Alpha | 8.01 ± 4.36                        | 7.55 ± 4.57      | 7.78 ± 3.16      |
| SO-6478, 6479  | 10/1/2002  | Gr. Beta  | 30.41 ± 4.07                       | 33.04 ± 4.28     | 31.73 ± 2.95     |
| SO-6478, 6479  | 10/1/2002  | K-40      | 19.82 ± 0.53                       | 20.39 ± 0.58     | 20.10 ± 0.39     |
| SO-6478, 6479  | 10/1/2002  | Sr-90     | 0.087 ± 0.017                      | 0.094 ± 0.020    | 0.091 ± 0.013    |
| AP-6641, 6642  | 10/1/2002  | Be-7      | 0.070 ± 0.016                      | 0.080 ± 0.015    | 0.075 ± 0.011    |
| MI-6544, 6545  | 10/2/2002  | K-40      | 1331.60 ± 125.20                   | 1326.50 ± 171.60 | 1329.05 ± 106.21 |
| AP-6857, 6858  | 10/3/2002  | Be-7      | 0.062 ± 0.015                      | 0.071 ± 0.015    | 0.066 ± 0.010    |
| AP-6857, 6858  | 10/3/2002  | Be-7      | 0.062 ± 0.015                      | 0.071 ± 0.015    | 0.066 ± 0.010    |
| AP-6857, 6858  | 10/3/2002  | Be-7      | 0.062 ± 0.015                      | 0.071 ± 0.015    | 0.066 ± 0.010    |
| BS-6620, 6621  | 10/7/2002  | Co-60     | 0.090 ± 0.020                      | 0.11 ± 0.02      | 0.10 ± 0.01      |
| BS-6620, 6621  | 10/7/2002  | Cs-137    | 0.62 ± 0.04                        | 0.63 ± 0.03      | 0.62 ± 0.02      |
| BS-6620, 6621  | 10/7/2002  | K-40      | 11.38 ± 0.48                       | 10.78 ± 0.52     | 11.08 ± 0.35     |
| MI-6651, 6652  | 10/8/2002  | K-40      | 1565.50 ± 141.00                   | 1640.60 ± 189.20 | 1603.05 ± 117.98 |
| G-6760, 6761   | 10/9/2002  | Be-7      | 2.17 ± 0.49                        | 2.31 ± 0.34      | 2.24 ± 0.30      |
| G-6760, 6761   | 10/9/2002  | K-40      | 6.24 ± 1.00                        | 6.61 ± 0.60      | 6.42 ± 0.58      |
| SWU-7054, 7055 | 10/10/2002 | Gr. Beta  | 3.09 ± 0.57                        | 2.06 ± 0.52      | 2.57 ± 0.39      |
| U-7126, 7127   | 10/11/2002 | Gr. Beta  | 2.61 ± 1.24                        | 2.61 ± 1.08      | 2.61 ± 0.82      |
| XW-7768, 7769  | 10/14/2002 | Cs-137    | 2.25 ± 0.25                        | 2.09 ± 0.18      | 2.17 ± 0.15      |
| XW-7768, 7769  | 10/14/2002 | H-3       | 2.63 ± 0.10                        | 2.64 ± 0.10      | 2.64 ± 0.07      |
| F-7148, 7149   | 10/15/2002 | K-40      | 2.57 ± 0.28                        | 2.98 ± 0.44      | 2.77 ± 0.26      |
| BS-7337, 7338  | 10/23/2002 | Co-60     | 0.083 ± 0.025                      | 0.073 ± 0.031    | 0.078 ± 0.020    |
| BS-7337, 7338  | 10/23/2002 | Cs-137    | 0.082 ± 0.019                      | 0.11 ± 0.04      | 0.10 ± 0.02      |
| BS-7337, 7338  | 10/23/2002 | Gr. Beta  | 12.54 ± 2.34                       | 12.99 ± 2.22     | 12.77 ± 1.61     |
| SO-7407, 7408  | 10/29/2002 | Cs-137    | 0.14 ± 0.03                        | 0.15 ± 0.03      | 0.15 ± 0.02      |
| SO-7407, 7408  | 10/29/2002 | Gr. Beta  | 16.73 ± 2.21                       | 16.62 ± 2.27     | 16.67 ± 1.58     |
| SO-7407, 7408  | 10/29/2002 | K-40      | 12.05 ± 0.61                       | 12.27 ± 0.81     | 12.16 ± 0.51     |

TABLE IV-5. In-House "Duplicate" Samples

| Lab Code       | Date       | Analysis | Concentration (pCi/L) <sup>a</sup> |                   | Averaged Result   |
|----------------|------------|----------|------------------------------------|-------------------|-------------------|
|                |            |          | First Result                       | Second Result     |                   |
| MI-7428, 7429  | 10/29/2002 | K-40     | 1542.60 ± 213.00                   | 1355.80 ± 185.70  | 1449.20 ± 141.29  |
| pw-7621, 7622  | 10/30/2002 | Gr. Beta | 2.22 ± 0.92                        | 2.08 ± 0.83       | 2.15 ± 0.62       |
| TD-7653, 7654  | 10/31/2002 | H-3      | 11122.00 ± 387.00                  | 11259.00 ± 390.00 | 11190.50 ± 274.71 |
| SW-7569, 7570  | 11/5/2002  | Gr. Beta | 15.90 ± 1.25                       | 16.24 ± 1.27      | 16.07 ± 0.89      |
| SW-7569, 7570  | 11/5/2002  | K-40     | 14.79 ± 1.48                       | 14.79 ± 1.48      | 14.79 ± 1.05      |
| SO-8010, 8011  | 11/7/2002  | Cs-137   | 0.11 ± 0.02                        | 0.11 ± 0.03       | 0.11 ± 0.02       |
| SO-8010, 8011  | 11/7/2002  | K-40     | 6.91 ± 0.54                        | 7.21 ± 0.54       | 7.06 ± 0.38       |
| VE-7747, 7748  | 11/11/2002 | Gr. Beta | 3.59 ± 0.05                        | 3.25 ± 0.05       | 3.42 ± 0.03       |
| VE-7747, 7748  | 11/11/2002 | K-40     | 3.17 ± 0.36                        | 3.26 ± 0.46       | 3.22 ± 0.29       |
| MI-7789, 7790  | 11/13/2002 | K-40     | 1319.30 ± 167.60                   | 1301.20 ± 140.70  | 1310.25 ± 109.41  |
| DW-8082, 8083  | 11/29/2002 | I-131    | 0.83 ± 0.24                        | 0.98 ± 0.22       | 0.90 ± 0.16       |
| SW-8054, 8055  | 12/2/2002  | Gr. Beta | 2.60 ± 0.46                        | 2.21 ± 0.39       | 2.41 ± 0.30       |
| SW-8054, 8055  | 12/2/2002  | K-40     | 1.44 ± 0.14                        | 1.43 ± 0.14       | 1.44 ± 0.10       |
| MI-8105, 8106  | 12/4/2002  | K-40     | 1300.60 ± 111.30                   | 1315.40 ± 108.90  | 1308.00 ± 77.86   |
| TD-8298, 8299  | 12/5/2002  | H-3      | 355.00 ± 94.00                     | 469.00 ± 99.00    | 412.00 ± 68.26    |
| MI-8396, 8397  | 12/17/2002 | K-40     | 1409.20 ± 117.30                   | 1449.60 ± 108.60  | 1429.40 ± 79.93   |
| SWT-8654, 8655 | 12/30/2002 | Gr. Beta | 1.63 ± 0.50                        | 1.40 ± 0.47       | 1.51 ± 0.34       |
| AP-8783, 8784  | 12/31/2002 | Be-7     | 0.044 ± 0.009                      | 0.042 ± 0.008     | 0.043 ± 0.006     |

Note: Duplicate analyses are performed on every twentieth sample received in-house. Results are not listed for those analyses with activities that measure below the LLD.

<sup>a</sup> Results are reported in units of pCi/L, except for air filters (pCi/Filter), food products, vegetation, soil, sediment (pCi/g).

TABLE IV-6. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP)<sup>a</sup>.

| Lab Code              | Type  | Date     | Analysis  | Concentration <sup>b</sup> |                | Control Limits <sup>c</sup> |
|-----------------------|-------|----------|-----------|----------------------------|----------------|-----------------------------|
|                       |       |          |           | Laboratory result          | Known Activity |                             |
| STW-939               | water | 12/01/01 | Am-241    | 1.25 ± 0.0                 | 1.19 ± 0.0     | 0.83 - 1.6                  |
| STW-939               | water | 12/01/01 | Co-57     | 138.9 ± 0.5                | 143 ± 14.3     | 100.1 - 185.9               |
| STW-939               | water | 12/01/01 | Co-60     | 139.1 ± 0.5                | 141 ± 14.1     | 98.7 - 183.3                |
| STW-939               | water | 12/01/01 | Cs-134    | 25.16 ± 0.2                | 28.5 ± 0.3     | 19.95 - 37.1                |
| STW-939               | water | 12/01/01 | Cs-137    | 279.96 ± 0.9               | 286 ± 28.6     | 200.2 - 371.8               |
| STW-939 <sup>d</sup>  | water | 12/01/01 | Fe-55     | 19.68 ± 23.2               | 9.2 ± 0.9      | 6.44 - 12.0                 |
| STW-939               | water | 12/01/01 | Mn-54     | 253.64 ± 0.9               | 246 ± 0.2      | 172.2 - 319.8               |
| STW-939               | water | 12/01/01 | Ni-63     | 65.88 ± 1.9                | 88.3 ± 8.8     | 61.81 - 114.8               |
| STW-939 <sup>e</sup>  | water | 12/01/01 | Pu-238    | 0.060 ± 0.01               | 0.0 ± 0.0      | -                           |
| STW-939               | water | 12/01/01 | Pu-239/40 | 2.79 ± 0.0                 | 2.99 ± 0.3     | 2.09 - 3.9                  |
| STW-939               | water | 12/01/01 | Sr-90     | 4.88 ± 0.3                 | 4.8 ± 0.5      | 3.36 - 6.2                  |
| STW-939               | water | 12/01/01 | U-233/4   | 0.89 ± 0.0                 | 0.98 ± 0.1     | 0.69 - 1.3                  |
| STW-939               | water | 12/01/01 | U-238     | 6.75 ± 0.0                 | 7.8 ± 0.8      | 5.46 - 10.1                 |
| STW-939               | water | 12/01/01 | Zn-65     | 70.6 ± 1.1                 | 67.3 ± 6.7     | 47.11 - 87.5                |
| STSO-955              | soil  | 10/16/02 | Am-241    | 40.54 ± 2.7                | 43.5 ± 4.4     | 30.45 - 56.6                |
| STSO-955              | soil  | 10/16/02 | Co-57     | 210.58 ± 2.0               | 246 ± 24.6     | 172.2 - 319.8               |
| STSO-955              | soil  | 10/16/02 | Co-60     | 84.38 ± 0.9                | 87.5 ± 8.8     | 61.25 - 113.8               |
| STSO-955              | soil  | 10/16/02 | Cs-134    | 692.6 ± 2.1                | 862 ± 86.0     | 603.4 - 1120.6              |
| STSO-955              | soil  | 10/16/02 | Cs-137    | 96.98 ± 1.7                | 111 ± 11.1     | 77.7 - 144.3                |
| STSO-955              | soil  | 10/16/02 | Fe-55     | 1714.6 ± 299.6             | 1870 ± 187.0   | 1309 - 2431.0               |
| STSO-955              | soil  | 10/16/02 | Mn-54     | 509.74 ± 3.4               | 546 ± 54.6     | 382.2 - 709.8               |
| STSO-955              | soil  | 10/16/02 | Ni-63     | 890.6 ± 22.4               | 1180 ± 118.0   | 826 - 1534.0                |
| STSO-955              | soil  | 10/16/02 | Pu-238    | 34.04 ± 6.0                | 33.3 ± 3.3     | 23.31 - 43.3                |
| STSO-955              | soil  | 10/16/02 | Pu-239/40 | 68.7 ± 3.7                 | 72.9 ± 7.3     | 51.03 - 94.8                |
| STSO-955 <sup>e</sup> | soil  | 10/16/02 | Sr-90     | 1.5 ± 3.0                  | 0.0 ± 0.0      | -                           |
| STSO-955              | soil  | 10/16/02 | U-233/4   | 166.33 ± 3.8               | 229 ± 22.9     | 160.3 - 297.7               |
| STSO-955              | soil  | 10/16/02 | U-238     | 169.76 ± 3.8               | 220 ± 22.0     | 154 - 286.0                 |
| STSO-955              | soil  | 10/16/02 | Zn-65     | 783.59 ± 6.4               | 809 ± 80.9     | 566.3 - 1051.7              |

<sup>a</sup> 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

<sup>b</sup> All results are in Bq/kg or Bq/L as requested by the Department of Energy.

<sup>c</sup> MAPEP results are presented as the known values and expected laboratory precision (1 sigma, 1 determination) and control limits as defined by the MAPEP.

<sup>d</sup> Known activity below the laboratory LLD. The sample was recounted for 2000 minutes; result : 11.52 ± 5.55 Bq /L

<sup>e</sup> Included in the testing series as a "false positive". No activity expected.

TABLE IV-7. Environmental Measurements Laboratory Quality Assessment Program (EML)

| Lab Code              | Type       | Date     | Analysis  | Concentration <sup>a</sup> |                         | Control Limits <sup>c</sup> |
|-----------------------|------------|----------|-----------|----------------------------|-------------------------|-----------------------------|
|                       |            |          |           | Laboratory results         | EML Result <sup>b</sup> |                             |
| STW-945               | Water      | 03/01/02 | Am-241    | 1.68 ± 0.14                | 1.47                    | 0.79 - 1.41                 |
| STW-945               | Water      | 03/01/02 | Co-60     | 349.20 ± 2.60              | 347.33                  | 0.80 - 1.20                 |
| STW-945               | Water      | 03/01/02 | Cs-134    | 3.40 ± 0.60                | 3.36                    | 0.80 - 1.30                 |
| STW-945               | Water      | 03/01/02 | Cs-137    | 57.20 ± 1.70               | 56.07                   | 0.80 - 1.22                 |
| STW-945               | Water      | 03/01/02 | Pu-238    | 0.45 ± 0.11                | 0.49                    | 0.74 - 1.20                 |
| STW-945               | Water      | 03/01/02 | Pu-239/40 | 4.47 ± 0.28                | 4.22                    | 0.79 - 1.20                 |
| STW-945               | Water      | 03/01/02 | Sr-90     | 7.40 ± 1.30                | 7.58                    | 0.69 - 1.34                 |
| STW-945               | Water      | 03/01/02 | Uranium   | 3.27 ± 0.43                | 2.84                    | 0.75 - 1.33                 |
| STW-946               | Water      | 03/01/02 | Gr. Alpha | 265.40 ± 7.70              | 375.00                  | 0.58 - 1.29                 |
| STW-946               | Water      | 03/01/02 | Gr. Beta  | 930.60 ± 12.00             | 1030.00                 | 0.61 - 1.43                 |
| STW-946               | Water      | 03/01/02 | H-3       | 226.30 ± 32.70             | 283.70                  | 0.78 - 2.45                 |
| STSO-947              | Soil       | 03/01/02 | Ac-228    | 55.00 ± 5.50               | 51.17                   | 0.80 - 1.38                 |
| STSO-947              | Soil       | 03/01/02 | Am-241    | 8.30 ± 3.30                | 10.93                   | 0.65 - 2.28                 |
| STSO-947              | Soil       | 03/01/02 | Bi-212    | 49.20 ± 12.40              | 53.43                   | 0.50 - 1.34                 |
| STSO-947              | Soil       | 03/01/02 | Bi-214    | 46.60 ± 3.10               | 53.93                   | 0.78 - 1.42                 |
| STSO-947              | Soil       | 03/01/02 | Cs-137    | 1401.60 ± 9.10             | 1326.67                 | 0.80 - 1.25                 |
| STSO-947              | Soil       | 03/01/02 | K-40      | 613.10 ± 28.10             | 621.67                  | 0.80 - 1.32                 |
| STSO-947              | Soil       | 03/01/02 | Pb-212    | 51.60 ± 2.60               | 51.10                   | 0.78 - 1.32                 |
| STSO-947              | Soil       | 03/01/02 | Pb-214    | 52.00 ± 3.60               | 54.37                   | 0.76 - 1.46                 |
| STSO-947              | Soil       | 03/01/02 | Pu-239/40 | 14.70 ± 3.50               | 19.10                   | 0.71 - 1.30                 |
| STSO-947              | Soil       | 03/01/02 | Sr-90     | 52.10 ± 6.30               | 53.76                   | 0.67 - 2.90                 |
| STSO-947              | Soil       | 03/01/02 | Th-234    | 122.40 ± 6.30              | 89.30                   | 0.63 - 2.35                 |
| STSO-947              | Soil       | 03/01/02 | Uranium   | 143.40 ± 9.40              | 194.77                  | 0.71 - 1.32                 |
| STVE-948              | Vegetation | 03/01/02 | Am-241    | 3.10 ± 2.20                | 2.23                    | 0.73 - 2.02                 |
| STVE-948              | Vegetation | 03/01/02 | Cm-244    | 0.90 ± 0.80                | 1.32                    | 0.61 - 1.59                 |
| STVE-948              | Vegetation | 03/01/02 | Co-60     | 13.50 ± 2.10               | 11.23                   | 0.80 - 1.44                 |
| STVE-948              | Vegetation | 03/01/02 | Cs-137    | 350.40 ± 6.30              | 313.67                  | 0.80 - 1.31                 |
| STVE-948              | Vegetation | 03/01/02 | K-40      | 940.80 ± 45.60             | 864.33                  | 0.79 - 1.39                 |
| STVE-948 <sup>d</sup> | Vegetation | 03/01/02 | Pu-239/40 | 16.90 ± 0.70               | 3.54                    | 0.69 - 1.31                 |
| STVE-948              | Vegetation | 03/01/02 | Sr-90     | 543.40 ± 24.90             | 586.28                  | 0.55 - 1.21                 |
| STAP-949              | Air Filter | 03/01/02 | Am-241    | 0.09 ± 0.05                | 0.09                    | 0.70 - 2.34                 |
| STAP-949              | Air Filter | 03/01/02 | Co-60     | 30.10 ± 0.30               | 30.52                   | 0.80 - 1.26                 |
| STAP-949              | Air Filter | 03/01/02 | Cs-137    | 29.90 ± 0.30               | 28.23                   | 0.80 - 1.32                 |
| STAP-949              | Air Filter | 03/01/02 | Mn-54     | 40.40 ± 0.40               | 38.53                   | 0.80 - 1.35                 |
| STAP-949              | Air Filter | 03/01/02 | Pu-238    | 0.05 ± 0.02                | 0.06                    | 0.67 - 1.33                 |
| STAP-949              | Air Filter | 03/01/02 | Pu-239/40 | 0.15 ± 0.02                | 0.19                    | 0.73 - 1.26                 |
| STAP-949              | Air Filter | 03/01/02 | Sr-90     | 3.40 ± 0.40                | 4.83                    | 0.53 - 1.84                 |
| STAP-949              | Air Filter | 03/01/02 | Uranium   | 0.80 ± 0.20                | 0.61                    | 0.79 - 2.10                 |
| STAP-950              | Air Filter | 03/01/02 | Gr. Alpha | 0.43 ± 0.04                | 0.53                    | 0.73 - 1.43                 |
| STAP-950              | Air Filter | 03/01/02 | Gr. Beta  | 1.34 ± 0.05                | 1.30                    | 0.76 - 1.36                 |
| STW-959               | Water      | 09/01/02 | Am-241    | 3.00 ± 0.10                | 3.04                    | 0.79 - 1.41                 |
| STW-959               | Water      | 09/01/02 | Co-60     | 258.40 ± 2.30              | 268.67                  | 0.80 - 1.20                 |
| STW-959               | Water      | 09/01/02 | Cs-134    | 50.80 ± 3.30               | 60.20                   | 0.80 - 1.30                 |
| STW-959               | Water      | 09/01/02 | Cs-137    | 80.10 ± 0.30               | 81.43                   | 0.80 - 1.22                 |
| STW-959               | Water      | 09/01/02 | Cs-137    | 80.10 ± 0.30               | 81.43                   | 0.80 - 1.22                 |
| STW-959               | Water      | 09/01/02 | Am-241    | 3.00 ± 0.10                | 3.04                    | 0.79 - 1.41                 |

TABLE IV-7. Environmental Measurements Laboratory Quality Assessment Program (EML)<sup>a</sup>.

| Lab Code              | Type       | Date     | Analysis  | Concentration <sup>b</sup> |                         |                             |
|-----------------------|------------|----------|-----------|----------------------------|-------------------------|-----------------------------|
|                       |            |          |           | Laboratory results         | EML Result <sup>c</sup> | Control Limits <sup>d</sup> |
| STW-959               | Water      | 09/01/02 | Am-241    | 3.00 ± 0.10                | 3.04                    | 0.79 - 1.41                 |
| STW-959               | Water      | 09/01/02 | Co-60     | 258.40 ± 2.30              | 268.67                  | 0.80 - 1.20                 |
| STW-959               | Water      | 09/01/02 | Cs-134    | 50.80 ± 3.30               | 60.20                   | 0.80 - 1.30                 |
| STW-959               | Water      | 09/01/02 | Cs-137    | 80.10 ± 0.30               | 81.43                   | 0.80 - 1.22                 |
| STW-959               | Water      | 09/01/02 | H-3       | 271.90 ± 20.90             | 227.30                  | 0.78 - 2.45                 |
| STW-959               | Water      | 09/01/02 | Pu-238    | 4.40 ± 0.20                | 4.33                    | 0.74 - 1.20                 |
| STW-959               | Water      | 09/01/02 | Pu-239/40 | 2.10 ± 0.10                | 2.07                    | 0.79 - 1.20                 |
| STW-959               | Water      | 09/01/02 | Sr-90     | 9.70 ± 0.20                | 8.69                    | 0.69 - 1.34                 |
| STW-959               | Water      | 09/01/02 | Uranium   | 5.60 ± 0.10                | 6.84                    | 0.75 - 1.33                 |
| STW-960               | Water      | 09/01/02 | Gr. Alpha | 204.90 ± 3.20              | 210.00                  | 0.58 - 1.29                 |
| STW-960               | Water      | 09/01/02 | Gr. Beta  | 852.00 ± 26.50             | 900.00                  | 0.61 - 1.43                 |
| STSO-961              | Soil       | 09/01/02 | Ac-228    | 47.60 ± 1.90               | 42.30                   | 0.80 - 1.38                 |
| STSO-961              | Soil       | 09/01/02 | Am-241    | 7.80 ± 1.40                | 6.77                    | 0.65 - 2.28                 |
| STSO-961              | Soil       | 09/01/02 | Bi-212    | 45.60 ± 1.70               | 45.93                   | 0.50 - 1.34                 |
| STSO-961 <sup>e</sup> | Soil       | 09/01/02 | Bi-214    | 48.80 ± 4.90               | 33.63                   | 0.78 - 1.42                 |
| STSO-961              | Soil       | 09/01/02 | Cs-137    | 819.60 ± 16.60             | 829.33                  | 0.80 - 1.25                 |
| STSO-961              | Soil       | 09/01/02 | K-40      | 705.30 ± 31.40             | 637.67                  | 0.80 - 1.32                 |
| STSO-961              | Soil       | 09/01/02 | Pb-212    | 48.60 ± 3.40               | 43.43                   | 0.78 - 1.32                 |
| STSO-961              | Soil       | 09/01/02 | Pb-214    | 51.10 ± 5.10               | 35.20                   | 0.76 - 1.46                 |
| STSO-961 <sup>f</sup> | Soil       | 09/01/02 | Pu-239/40 | 20.20 ± 0.80               | 12.90                   | 0.71 - 1.30                 |
| STSO-961              | Soil       | 09/01/02 | Sr-90     | 38.50 ± 0.10               | 41.16                   | 0.67 - 2.90                 |
| STSO-961 <sup>g</sup> | Soil       | 09/01/02 | Uranium   | 58.90 ± 0.70               | 87.21                   | 0.71 - 1.32                 |
| STVE-962              | Vegetation | 09/01/02 | Am-241    | 2.10 ± 0.30                | 2.25                    | 0.73 - 2.02                 |
| STVE-962              | Vegetation | 09/01/02 | Cm-244    | 1.00 ± 0.30                | 1.25                    | 0.61 - 1.59                 |
| STVE-962              | Vegetation | 09/01/02 | Co-60     | 11.80 ± 1.50               | 9.66                    | 0.80 - 1.44                 |
| STVE-962              | Vegetation | 09/01/02 | Cs-137    | 340.30 ± 16.80             | 300.67                  | 0.80 - 1.31                 |
| STVE-962              | Vegetation | 09/01/02 | K-40      | 1646.00 ± 74.40            | 1480.00                 | 0.79 - 1.39                 |
| STVE-962              | Vegetation | 09/01/02 | Pu-239/40 | 3.00 ± 0.30                | 3.43                    | 0.69 - 1.31                 |
| STVE-962              | Vegetation | 09/01/02 | Sr-90     | 345.60 ± 97.80             | 476.26                  | 0.55 - 1.21                 |
| STAP-963 <sup>h</sup> | Air Filter | 09/01/02 | Am-241    | 0.20 ± 0.01                | 0.19                    | 0.70 - 2.34                 |
| STAP-963              | Air Filter | 09/01/02 | Co-60     | 24.90 ± 0.60               | 23.00                   | 0.80 - 1.26                 |
| STAP-963              | Air Filter | 09/01/02 | Cs-137    | 38.00 ± 1.30               | 32.50                   | 0.80 - 1.32                 |
| STAP-963              | Air Filter | 09/01/02 | Mn-54     | 60.80 ± 1.90               | 52.20                   | 0.80 - 1.35                 |
| STAP-963 <sup>h</sup> | Air Filter | 09/01/02 | Pu-238    | 0.11 ± 0.02                | 0.12                    | 0.67 - 1.33                 |
| STAP-963 <sup>h</sup> | Air Filter | 09/01/02 | Pu-239/40 | 0.21 ± 0.01                | 0.21                    | 0.73 - 1.26                 |
| STAP-963              | Air Filter | 09/01/02 | Sr-90     | 5.20 ± 0.20                | 5.56                    | 0.53 - 1.84                 |
| STAP-963 <sup>h</sup> | Air Filter | 09/01/02 | Uranium   | 0.41 ± 0.04                | 0.47                    | 0.79 - 2.10                 |
| STAP-964              | Air Filter | 09/01/02 | Gr. Alpha | 0.40 ± 0.10                | 0.29                    | 0.73 - 1.43                 |
| STAP-964              | Air Filter | 09/01/02 | Gr. Beta  | 0.80 ± 0.10                | 0.87                    | 0.76 - 1.36                 |

<sup>a</sup> Results are reported in Bq/L with the following exceptions: Air Filters (Bq/Filter), Soil and Vegetation (Bq/kg).

<sup>b</sup> The EML result listed is the mean of replicate determinations for each nuclide ± the standard error of the mean.

<sup>c</sup> Control limits are reported by EML as the ratio of Reported Value / EML value.

<sup>d</sup> An error was found in the conversion from pCi/g to Bq/kg. Corrected result : 2.84 ± 0.59 Bq/kg.

<sup>e</sup> Naturally-occurring radium daughters are present in the shield background, and a probable cause of the higher bias seen for isotopes of lead and bismuth.

<sup>f</sup> Reporting error. The average result of the triplicate analyses was 14.1 ± 5.7 Bq/kg.

<sup>g</sup> The analysis was repeated in duplicate; result of reanalysis, 87.05 ± 7.64 Bq/kg.

<sup>h</sup> STAP-963, Calculations for the transuranics analyses (Am-241, Uranium, Pu-238, -239/40) were not converted to Bq/total filter. The data listed is the result of recalculation.