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

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 2001 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 2001 Annual Radiological Environmental Operating Report

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

IE25

Attachment

The Quad Cities Nuclear Power Station 2001 Annual Radiological Environmental Operating Report

QUAD CITIES NUCLEAR POWER STATION

**ANNUAL RADIOLOGICAL
ENVIRONMENTAL OPERATING
REPORT**

2001

MAY 2002

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INTRODUCTION

Unit 1 of the Quad Cities Nuclear Power Station, located near Cordova, Illinois next to the Mississippi River, is a 2511 MW_{th} boiling water reactor and Unit 2 is a 2956 MW_{th} boiling water reactor. The station has been designed to keep releases to the environment at levels below those specified in the regulations.

Liquid effluents from Quad Cities Nuclear Power Station 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 Nuclear Power 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 Nuclear Power Station calculated for the maximally-exposed individual for the period is 6.94 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 (6.35 mrem). The balance of the calculated maximum dose (0.59 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 $2.40\text{E}+02$ curies of fission and activation gases was released with a maximum quarterly average release rate of $1.06\text{E}+01$ $\mu\text{Ci}/\text{sec}$.

A total of $8.07\text{E}-03$ curies of I-131 was released during the year with a maximum quarterly average release rate of $3.96\text{E}-04$ $\mu\text{Ci}/\text{sec}$.

A total of $2.14\text{E}-02$ curies of beta-gamma emitters was released as airborne particulate matter with a maximum quarterly average release rate of $1.18\text{E}-03$ $\mu\text{Ci}/\text{sec}$. A total of $7.32\text{E}-06$ curies of alpha-emitting radionuclides was released.

A total of $8.95\text{E}+01$ curies of tritium was released with a maximum quarterly average release rate of $3.98\text{E}+00$ $\mu\text{Ci}/\text{sec}$.

1.2 Liquids Released to the Mississippi River

A total of $5.84\text{E}+06$ liters of radioactive liquid waste (prior to dilution) containing $2.80\text{E}-02$ curies (excluding tritium, noble gases, and alpha) was discharged from the station. These wastes were released at a maximum quarterly average diluted concentration of $8.21\text{E}-10$ $\mu\text{Ci}/\text{ml}$. No alpha radioactivity was detected in the liquid waste. A total of $1.94+01$ curies of tritium was released at a maximum quarterly average concentration of $1.03\text{E}-06$ $\mu\text{Ci}/\text{ml}$. Quarterly release estimates and principal radionuclides in liquid effluents are given in Table 1.2-1.

2.0 SOLID RADIOACTIVE WASTE

Solid radioactive wastes were shipped to waste processors during 2001. For further detail, refer to the Quad Cities Nuclear Power Station 2001 Annual Radiological 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 $1.08\text{E-}02$ 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 $1.14\text{E-}02$ mrem (Table 3.4-1). The maximum gamma air dose was $1.19\text{E-}03$ mrad (Table 3.1-1) based on measured effluents and average meteorological data and $1.08\text{E-}02$ 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 mg/cm^2 and an occupancy factor of 1.0 is used. The skin dose from beta and gamma radiation for the year was $1.46\text{E-}02$ 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 $6.20\text{E-}04$ mrad (Table 3.1-1) and $2.28\text{E-}03$ mrad based on concurrent meteorological data (Table 3.4-1).

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 $2.90\text{E-}04$ pCi/m³ 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 thyroid dose was $5.24\text{E-}01$ 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 $1.35\text{E+}00$ pCi/m³ (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 the whole body, lower GI tracts, thyroid, bone, skin; specific parameters for use in the equations are given in the Exelon Nuclear Offsite Dose Calculation Manual. The maximum whole body dose for the year was $7.88\text{E-}03$ mrem and no organ dose exceeded $1.26\text{E-}02$ mrem (Table 3.2-1 [teen]).

3.3 Assessment of Dose to Member of Public

During the period January to December, 2001, Quad Cities Nuclear Power 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;

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

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 99.3% for 2001 (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 CaF₂ thermoluminescent dosimeters (TLDs). A comparison of the TLD results for control stations with onsite and offsite indicator stations is included in Section 4.0 of Appendix III. The quarterly average external radiation dose for the year was 20.3 mR at the indicator locations and 19.1 mR at the control locations. TLD results are listed in Section 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 20.0 ± 2.6 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) and 2000 (15.2 mR). The apparent increase in the quarterly external radiation dose is reflective of the conversion to the new contractor and new style of TLD. The control results reflect this same apparent increase when compared statistically.

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 pCi/m^3 throughout the year.

Gross beta concentrations ranged from 0.005 to 0.048 pCi/m^3 and averaged 0.026 pCi/m^3 and was similar to overall average levels in 1985 (0.024 pCi/m^3), 1986 (0.025 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 pCi/m^3), 1988 (0.030 pCi/m^3), 1989 (0.028 pCi/m^3), 1990 (0.020 pCi/m^3), 1991 (0.022 pCi/m^3), 1992 (0.021 pCi/m^3), 1993 (0.021 pCi/m^3), 1994 (0.022 pCi/m^3), 1995 (0.022 pCi/m^3), 1996 (0.022 pCi/m^3), 1997 (0.022 pCi/m^3), 1998 (0.023 pCi/m^3), 1999 (0.027 pCi/m^3) and 2000 (0.028 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 were 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 4.4 pCi/L with a range of 2.7-10.1 pCi/L; concentrations at Q-34 averaged 3.8 pCi/L with a range of 2.2-5.0 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 (Q-39). 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 of 5.0 pCi/L during the non-grazing period (November through April) and 0.5 pCi/L during 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, Section 2.0.

5.7 Program Modifications

There were no changes to the program in 2001.

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 2, 2001.

Milch animal and nearest cattle census results are presented on pages 34 and 35 of Appendix III.

8.0 NEAREST RESIDENCE CENSUS

A census of the nearest residences within a 6.2-mile radius was conducted on August 2, 2001 by G. Kreuder.

The nearest residence census results are presented on page 36 of Appendix III.

9.0 INTERLABORATORY COMPARISON PROGRAM RESULTS

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

10.0 ERRATA DATA

Errata data is presented in Appendix V.

APPENDIX I

DATA TABLES AND FIGURES

ATTACHMENT A (Page 1 of 5)
EFFLUENT & WASTE DISPOSABLE SEMI-ANNUAL REPORT

GASEOUS EFFLUENTS – SUMMATION OF ALL RELEASES

Period: January through June

2001

A. FISSION & ACTIVATION GASES	UNIT	FIRST QUARTER	SECOND QUARTER	Est. Total Error %
1. Total Release	Ci	4.63E+01	5.81E+01	12.4
2. Average release rate for the period	µCi/sec	5.96E+00	7.39E+00	
3. *Percent of ODCM limit Chimney & Stack	%	4.72E-03	5.86E-03	
		1.23E-03	1.52E-03	

* NOBLE GAS GAMMA/NOBLE GAS BETA DOSE LIMITS

B. IODINE				
1. Total Iodine-131	Ci	7.72E-04	1.07E-03	40.0
2. Average release rate for the period	µCi/sec	9.93E-05	1.36E-04	

C. PARTICULATES				
1. Particulates with half-lives >8 days	Ci	1.11E-03	1.65E-03	30.1
2. Average release rate for the period	µCi/sec	1.42E-04	2.09E-04	
3. Gross alpha radioactivity	Ci	2.66E-06	<LLD*	

D. TRITIUM				
1. Total Release	Ci	1.74E+01	1.81E+01	8.1
2. Average release rate for the period	µCi/sec	2.24E+00	2.30E+00	

E. Iodine 131 & 133, Tritium & Particulate				
1. Percent of ODCM limit Chimney & Stack	%	1.30E+00	9.30E-01	

ATTACHMENT A (Page 1 of 5)
EFFLUENT & WASTE DISPOSABLE SEMI-ANNUAL REPORT

GASEOUS EFFLUENTS – SUMMATION OF ALL RELEASES

Period: July – December

2001

A. FISSION & ACTIVATION GASES	UNIT	THIRD QUARTER	FOURTH QUARTER	Est. Total Error %
1. Total Release	Ci	5.17E+01	8.42E+01	12.4
2. Average release rate for the period	μCi/sec	6.51E+00	1.06E+01	
3. *Percent of ODCM limit Chimney & Stack	%	5.11E-03	8.07E-03	
		1.34E-03	2.13E-03	

* NOBLE GAS GAMMA/NOBLE GAS BETA DOSE LIMITS

B. IODINE				
1. Total Iodine-131	Ci	3.08E-03	3.15E-03	40.0
2. Average release rate for the period	μCi/sec	3.87E-04	3.96E-04	

C. PARTICULATES				
1. Particulates with half-lives >8 days	Ci	9.27E-03	9.41E-03	30.1
2. Average release rate for the period	μCi/sec	1.17E-03	1.18E-03	
3. Gross alpha radioactivity	Ci	3.21E-06	1.45E-06	

D. TRITIUM				
1. Total Release	Ci	3.16E+01	2.24E+01	8.1
2. Average release rate for the period	μCi/sec	3.98E+00	2.81E+00	

E. IODINE 131 & 133, TRITIUM & PARTICULATE				
1. Percent of ODCM limit Chimney & Stack	%	2.65E+00	2.70E+00	

**ATTACHMENT A (Page 4 of 5)
EFFLUENT & WASTE DISPOSABLE SEMI-ANNUAL REPORT**

LIQUID EFFLUENTS – SUMMATION OF ALL RELEASES

A. FISSION & ACTIVATION GASES	UNIT	FIRST QUARTER	SECOND QUARTER	Est. Total Error %
1. Total Release (not including tritium, gases & alpha)	Ci	1.33E-03	2.52E-03	5.6
2. Average diluted concentration during batch discharges for the period	µCi/mL	1.36E-10	1.53E-10	
3. Percent of applicable limit*	WB %	1.02E-01	1.70E-01	
	O %	4.83E-02	8.10E-02	
4. Maximum diluted concentration during batch discharges	µCi/mL	2.81E-10	5.27E-10	
B. TRITIUM				
1. Total Release	Ci	3.13E+00	4.09E+00	4.1
2. Average diluted concentration during batch discharges for the period	µCi/mL	3.20E-07	2.48E-07	
3. Percent of applicable limit	%	1.07E-02	8.28E-03	
C. DISSOLVED & ENTRAINED GASES				
1. Total Release	Ci	<LLD*	4.96E-05	5.6
2. Average diluted concentration during batch discharges for the period	µCi/mL	<LLD*	3.01E-12	
3. Percent of applicable limit	%	NA	1.50E-06	
D. GROSS ALPHA ACTIVITY				
1. Total Release	Ci	<LLD*	<LLD*	14.8
2. Average diluted concentration during batch discharges for the period	µCi/mL	<LLD*	<LLD*	
E. VOLUME OF WASTE RELEASED (prior to dilution)	Liters	1.88E+06	1.65E+06	
F. VOLUME OF DILUTION WATER USED DURING BATCH DISCHARGES	Liters	9.78E+09	1.65E+10	
G. TOTAL VOLUME OF DILUTION WATER USED DURING PERIOD (quarter)	Liters	2.63E+11	4.69E+11	

* Whole Body/Organ (ODCM)

ATTACHMENT A (Page 4 of 5)
EFFLUENT & WASTE DISPOSABLE SEMI-ANNUAL REPORT

LIQUID EFFLUENTS – SUMMATION OF ALL RELEASES

A. FISSION & ACTIVATION GASES	UNIT	THIRD QUARTER	FOURTH QUARTER	Est. Total Error %
1. Total Release (not including tritium, gases & alpha)	Ci	8.86E-03	1.53E-02	5.6
2. Average diluted concentration during batch discharges for the period	µCi/mL	8.04E-10	8.21E-10	
3. Percent of applicable limit*	%	2.46E-01	3.11E-02	
		1.17E-01	2.01E-02	
4. Maximum diluted concentration during batch discharges	µCi/mL	1.43E-09	1.24E-09	
B. TRITIUM				
1. Total Release	Ci	3.30E+00	8.90E+00	4.1
2. Average diluted concentration during batch discharges for the period	µCi/mL	3.95E-07	1.03E-06	
3. Percent of applicable limit	%	1.32E-02	3.43E-02	
C. DISSOLVED & ENTRAINED GASES				
1. Total Release	Ci	<LLD	3.51E-05	5.6
2. Average diluted concentration during batch discharges for the period	µCi/mL	<LLD	3.19E-12	
3. Percent of applicable limit	%	NA	1.60E-06	
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	8.39E+05	1.47E+06	
F. VOLUME OF DILUTION WATER USED DURING BATCH DISCHARGES				
	Liters	8.16E+09	8.53E+09	
G. TOTAL VOLUME OF DILUTION WATER USED DURING PERIOD (quarter)				
	Liters	4.50E+11	3.49E+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 2001 Effluent Report.

Figure 3.1-1

Estimated Cumulative Gamma Dose (in mrem)
from the Quad Cities Station for the period
January-December 2001

Isopleth Labels

Small figure - multiply by 10^{-5}

Large figure - multiply by 10^{-5}

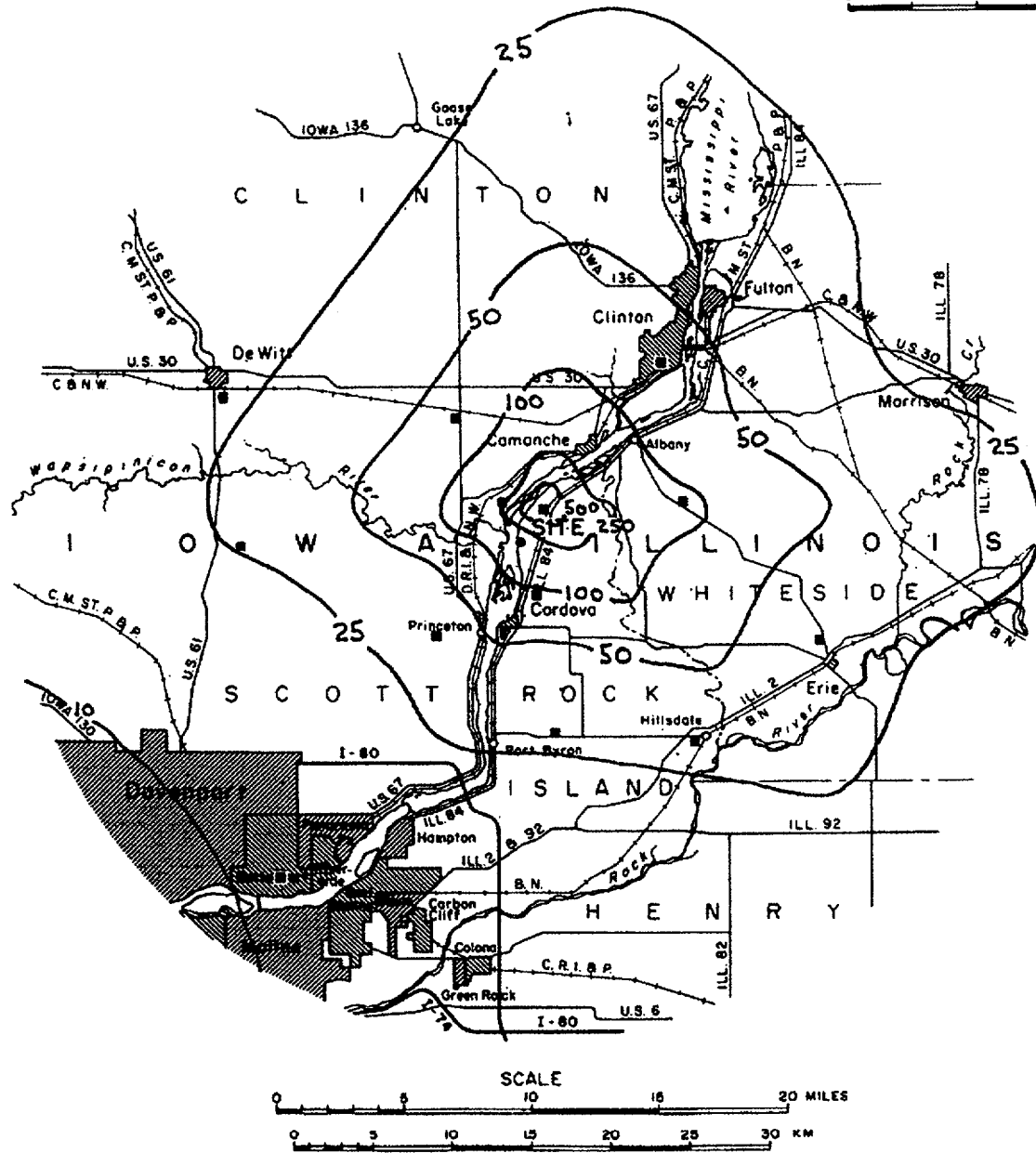
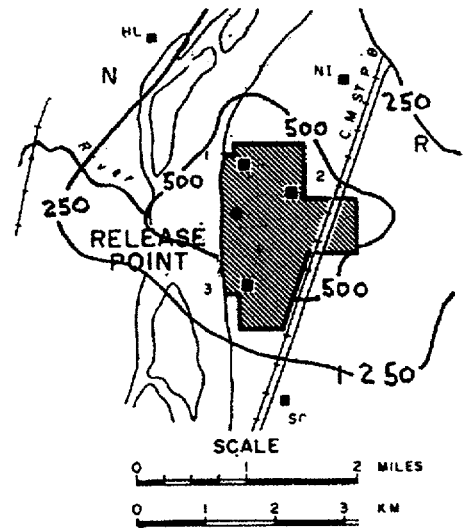


Figure 3.1-2

Estimated Total Concentrations (in pCi/m³) of Noble Gases from the Quad Cities Station for the period January-December 2001

Isopleth Labels

Small figure - multiply by 10⁻².

Large figure - multiply by 10⁻²

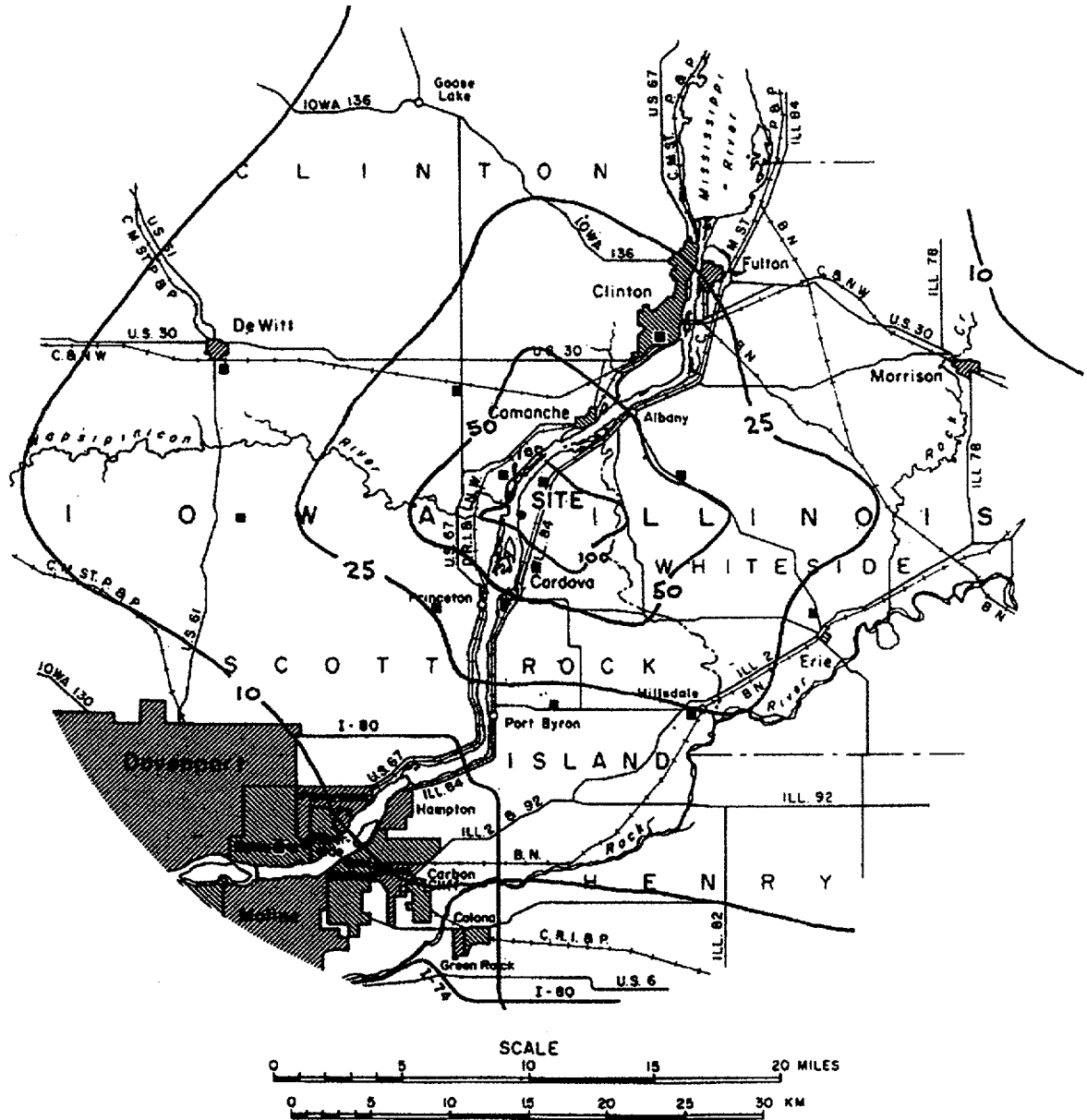
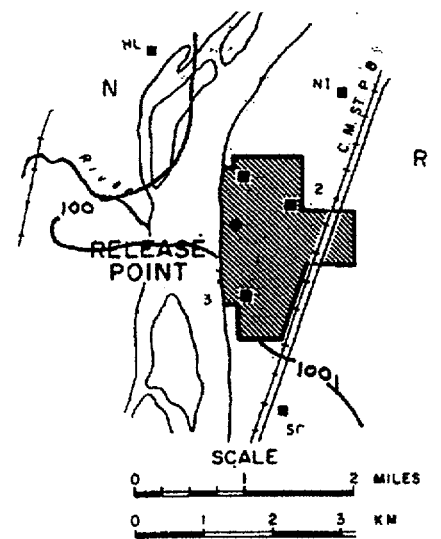


Figure 3.1-3

Estimated Total Concentrations (in pCi/m³)
of Iodines from the Quad Cities Station for
the period January-December 2001

Isopleth Labels

Small figure - multiply by 10⁻⁶

Large figure - multiply by 10⁻⁶

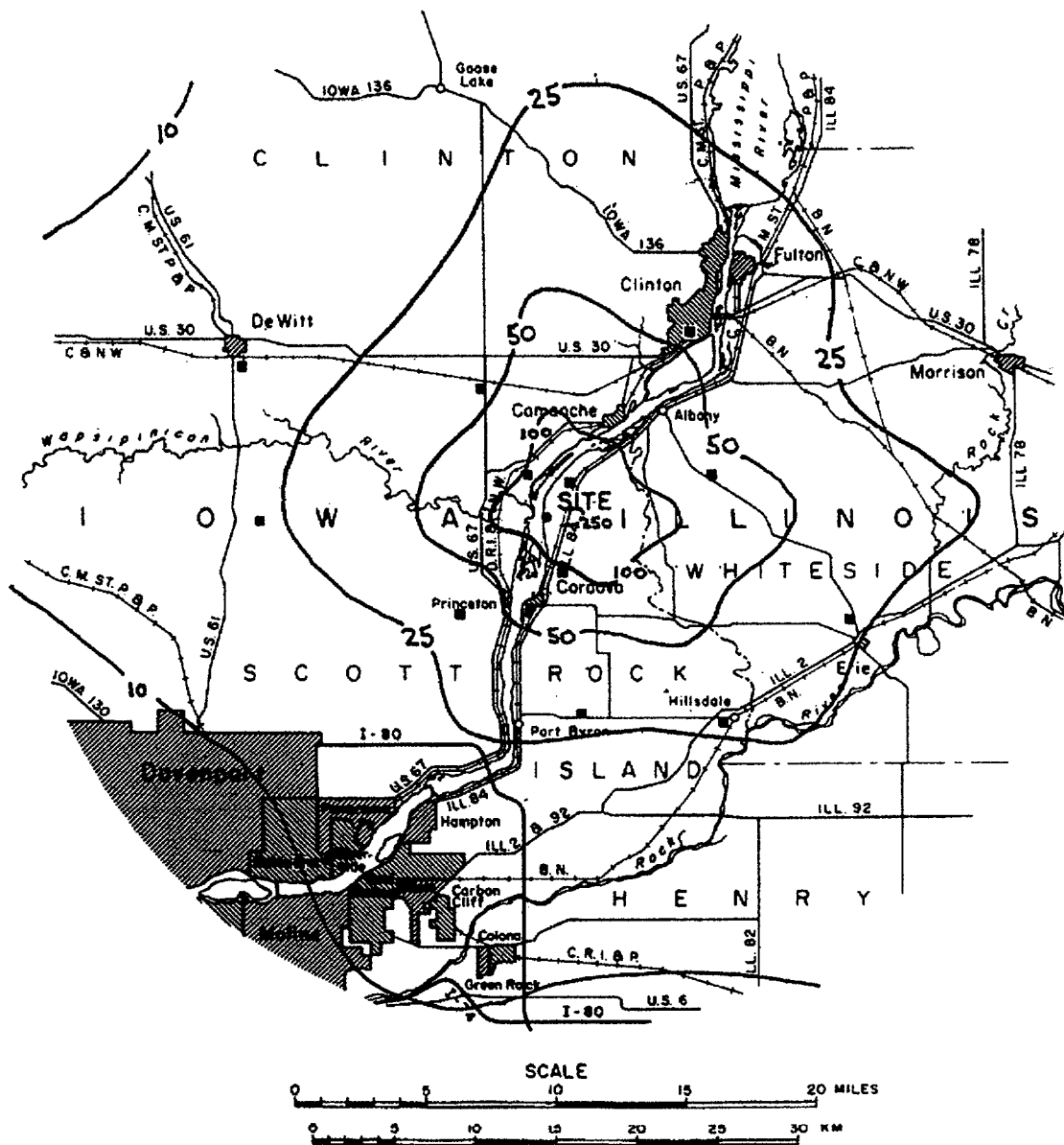
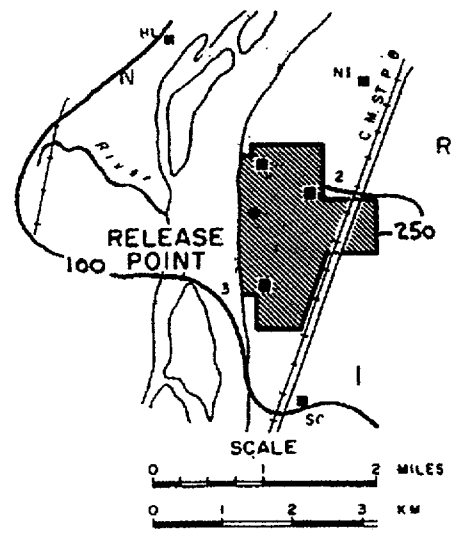


Figure 3.1-4

Estimated Total Concentrations (in pCi/m³)
of Particulates from the Quad Cities Station
for the period January-December 2001

Isopleth Labels

Small figure - multiply by 10⁻²

Large figure - multiply by 10⁻³

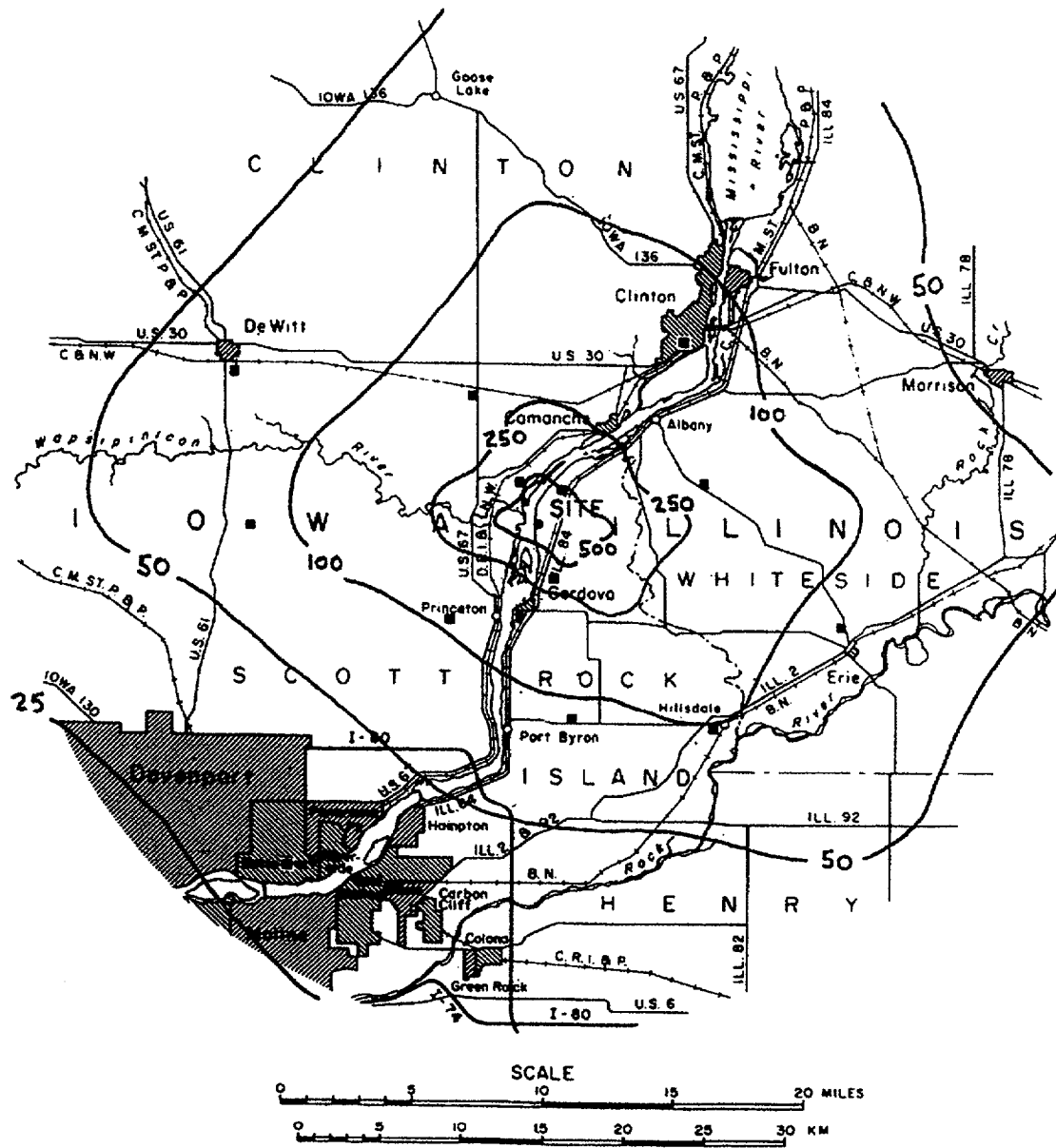
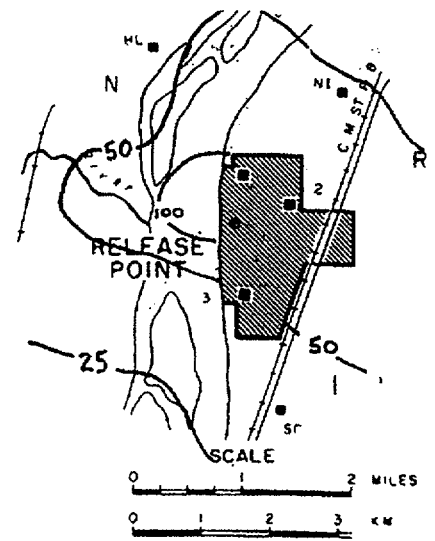


Table 3.1-1

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

Release ID: 1 All Gas Releases Coefficient Type: Historical

=== I&P DOSE LIMIT ANALYSIS ===== ANNUAL 2001 =====

Period-Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
2001 - Admin. Any Organ	INFANT	THYROID	5.24E-01	1.13E+01	4.66E+00
2001 - Admin. Total Body	CHILD		1.08E-02	1.05E+01	1.03E-01
2001 - T.Spec Any Organ	INFANT	THYROID	5.24E-01	1.50E+01	3.49E+00

Receptor: 5 Composite Crit. Receptor - IP
 Distance: 0.00E+00 (meters) Compass Point:NA

Critical Pathway: Grs/Goat/Milk (GMILK)
 Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	1.63E-01
MN-54	4.62E-02
CO-60	1.54E+00
SR-89	4.57E-07
SR-90	0.00E+00
NB-95	1.49E-05
AG-110M	2.28E-03
I-131	9.59E+01
I-133	2.38E+00
I-135	3.86E-04
CS-137	7.07E-03
BA-140	1.33E-03
LA-140	7.37E-04
CE-144	5.96E-05

2001 - T.Spec Total Body CHILD 1.08E-02 1.50E+01 7.20E-02

Receptor: 5 Composite Crit. Receptor - IP
 Distance: 0.00E+00 (meters) Compass Point:NA

Critical Pathway: Ground Plane Deposition (GPD)
 Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	1.23E+01
MN-54	2.53E+00
CO-60	7.87E+01
SR-89	1.47E+00
SR-90	1.12E-01
NB-95	7.28E-04
AG-110M	1.12E-01
I-131	3.69E+00
I-133	1.38E-01
I-135	1.39E-03
CS-137	6.79E-01
BA-140	1.27E-01
LA-140	3.58E-02
CE-144	5.38E-03

Table 3.1-1 (continued)

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

Release ID: 1 All Gas Releases Coefficient Type: Historical

=== NG DOSE LIMIT ANALYSIS ===== ANNUAL 2001 =====

Period-Limit	Dose (mrad)	Limit (mrad)	% of Limit
2001 - Admin. Gamma	1.19E-03	7.50E+00	1.58E-02
2001 - Admin. Beta	6.20E-04	1.50E+01	4.13E-03
2001 - T.Spec Gamma	1.19E-03	1.00E+01	1.19E-02

Receptor: 4 Composite Crit. Receptor - NG
 Major Contributors (0% or greater to total)

Nuclide	Percentage
AR-41	5.43E-01
XE-135M	8.58E+00
XE-138	8.31E+01
KR-87	2.55E+00
KR-85M	1.77E-01
XE-135	9.92E-01
XE-133M	1.32E-03
KR-88	3.87E+00
XE-131M	7.41E-03
XE-133	2.19E-01

2001 - T.Spec Beta 6.20E-04 2.00E+01 3.10E-03

Receptor: 4 Composite Crit. Receptor - NG
 Major Contributors (0% or greater to total)

Nuclide	Percentage
AR-41	3.67E-01
XE-135M	3.61E+00
XE-138	8.21E+01
KR-87	8.16E+00
KR-85M	5.44E-01
XE-135	2.44E+00
XE-133M	1.15E-02
KR-88	1.43E+00
XE-131M	1.01E-01
XE-133	1.25E+00

Table 3.2-1

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

Report for: 2001
 Release ID: 2 Abnormal Liquid Continuous

==== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) =====	Liquid Receptor							
	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
ADULT	8.00E-05	1.92E-04	8.07E-08	9.60E-05	7.78E-06	1.66E-04	0.00E+00	9.59E-05
TEEN	8.07E-05	1.93E-04	6.05E-08	9.33E-05	9.46E-06	1.11E-04	0.00E+00	7.74E-05
CHILD	9.50E-05	1.60E-04	6.74E-08	7.42E-05	7.63E-06	3.63E-05	0.00E+00	6.54E-05
INFANT	3.79E-08	1.57E-07	2.98E-08	6.27E-08	3.42E-08	1.22E-07	0.00E+00	1.05E-07

==== SITE DOSE LIMIT ANALYSIS =====

Period - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit
2001 - Admin. Any Organ	TEEN	LIVER	1.93E-04	7.50E+00	2.58E-03
2001 - Admin. Total Body	ADULT	TBODY	9.59E-05	2.25E+00	4.26E-03
2001 - T.Spec Any Organ	TEEN	LIVER	1.93E-04	1.00E+01	1.93E-03

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	3.13E-02
MN-54	1.29E+01
FE-55	1.80E-01
CO-58	2.20E-03
CO-60	6.66E-01
ZN-65	5.03E+01
CS-137	3.59E+01

2001 - T.Spec Total Body ADULT TBODY 9.59E-05 3.00E+00 3.20E-03

Critical Pathway: Fresh Water Fish - Sport (FFSP)

Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	8.41E-02
MN-54	5.07E+00
FE-55	7.90E-02
CO-58	1.00E-02
CO-60	2.97E+00
ZN-65	4.63E+01
CS-137	4.55E+01

Table 3.2-1 (continued)

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

Report for: 2001
 Release ID: 11 River Discharge Tank

==== PERIOD DOSE BY ORGAN AND AGE GROUP (mrem) =====	Liquid Receptor ANNUAL 2001 =====							
	Bone	Liver	Thyroid	Kidney	Lung	GI-Lli	Skin	TB
ADULT	9.35E-03	1.19E-02	1.99E-05	4.03E-03	1.37E-03	4.57E-04	0.00E+00	7.78E-03
TEEN	9.90E-03	1.24E-02	1.49E-05	4.20E-03	1.66E-03	3.37E-04	0.00E+00	4.32E-03
CHILD	1.23E-02	1.12E-02	1.66E-05	3.63E-03	1.34E-03	1.39E-04	0.00E+00	1.70E-03
INFANT	1.64E-05	1.29E-05	7.35E-06	8.75E-06	8.02E-06	7.79E-06	0.00E+00	8.26E-06

==== SITE DOSE LIMIT ANALYSIS =====						
Period - Limit	Age Group	Organ	Dose (mrem)	Limit (mrem)	Max % of Limit	
2001 - Admin. Any Organ	TEEN	LIVER	1.24E-02	7.50E+00	1.65E-01	
2001 - Admin. Total Body	ADULT	TBODY	7.78E-03	2.25E+00	3.46E-01	
2001 - T.Spec Any Organ	TEEN	LIVER	1.24E-02	1.00E+01	1.24E-01	

Critical Pathway: Fresh Water Fish - Sport (FFSP)
 Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	1.21E-01
MN-54	1.35E-01
FE-55	2.35E-01
FE-59	9.20E-03
CO-60	5.13E-02
AG-110M	2.49E-05
CS-137	9.94E+01
LA-140	5.39E-08

2001 - T.Spec Total Body ADULT TBODY 7.78E-03 3.00E+00 2.59E-01

Critical Pathway: Fresh Water Fish - Sport (FFSP)
 Major Contributors (0% or greater to total)

Nuclide	Percentage
H-3	2.55E-01
MN-54	4.16E-02
FE-55	8.11E-02
FE-59	5.47E-03
CO-60	1.80E-01
SR-90	1.79E-01
AG-110M	2.38E-05
CS-137	9.93E+01
LA-140	2.19E-08

Table 3.3-1

QUAD CITIES STATION UNIT ONE

10 CFR 20 COMPLIANCE ASSESSMENT

PERIOD OF ASSESSMENT 01/01/01 TO 12/31/01

CALCULATED 03/14/02

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

Total Effective Dose Equivalent,	mrem/yr	3.59
10 CFR 20.1301 (a) (1) limit	mrem/yr	100.0
	% of limit	3.59

Compliance Summary - 10CFR20

	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	% of Limit
TEDE	8.72E-01	8.44E-01	9.38E-01	9.37E-01	3.59E+00

Table 3.3-1 (continued)

QUAD CITIES STATION UNIT TWO

10 CFR 20 COMPLIANCE ASSESSMENT

PERIOD OF ASSESSMENT 01/01/01 TO 12/31/01

CALCULATED 03/14/02

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 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	% of Limit
TEDE	8.46E-01	8.76E-01	6.91E-01	9.38E-01	3.35E+00

Table 3.4-1

QUAD CITIES STATION - UNIT 1

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

CURRENT PERIOD OF RELEASE: October 1 - December 31 YEAR 2001

TYPE OF DOSE	CURRENT PERIOD	CURRENT QUARTER	THIRD QUARTER	SECOND QUARTER	FIRST QUARTER	ANNUAL
GAMMA AIR (mrad)	2.200E-03(E)	2.200E-03(E)	1.555E-03(N)	1.355E-03(N)	1.260E-03(SE)	5.385E-03(N)
BETA AIR (mrad)	5.150E-04(E)	5.150E-04(E)	2.745E-04(N)	2.400E-04(E)	3.395E-04(SE)	1.139E-03(E)
WHOLE BODY (mrem)	1.733E-03(NNE)	1.733E-03(NNE)	1.693E-03(NNE)	1.560E-03(NNE)	7.150E-04(NNE)	5.701E-03(NNE)
SKIN (mrem)	2.229E-03(NNE)	2.229E-03(NNE)	2.155E-03(NNE)	1.995E-03(NNE)	9.310E-04(SSE)	7.308E-03(NNE)
ORGAN (mrem)	1.937E-04(E)	1.937E-04(E)	2.025E-04(W)	8.515E-05(WNW)	8.050E-05(E)	4.137E-04(E)
CRITICAL PERS-ORG	CH-TH	CH-TH	CH-TH	TA-LN	TA-LN	CH-TH

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	.04	10.0	.05
BETA AIR (mrad)	10.0	.01	20.0	.01
WHOLE BODY (mrem)	2.5	.07	5.0	.11
SKIN (mrem)	7.5	.03	15.0	.05
ORGAN (mrem)	7.5	.00	15.0	.00
CRITICAL PERSON-ORGAN		(CH-TH)		(CH-TH)

CRITICAL ORGANS: BN=BONE, LV=LIVER, TB=TOTAL BODY, TH=THYROID, KD=KIDNEY, LN=LUNG, GI=GI-LLI
 CRITICAL PERSON: AD=ADULT, TA=TEENAGER, CH=CHILD, IN=INFANT

Date of calculation: 4/22/2002

Table 3.4-1 (continued)

QUAD CITIES STATION - UNIT 2

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

CURRENT PERIOD OF RELEASE: October 1 - December 31 YEAR: 2001

TYPE OF DOSE	CURRENT PERIOD	CURRENT QUARTER	THIRD QUARTER	SECOND QUARTER	FIRST QUARTER	ANNUAL
GAMMA AIR (mrad)	2.200E-03(E)	2.200E-03(E)	1.555E-03(N)	1.355E-03(N)	1.260E-03(SE)	5.385E-03(N)
BETA AIR (mrad)	5.150E-04(E)	5.150E-04(E)	2.745E-04(N)	2.400E-04(E)	3.395E-04(SE)	1.139E-03(E)
WHOLE BODY (mrem)	1.733E-03(NNE)	1.733E-03(NNE)	1.693E-03(NNE)	1.560E-03(NNE)	7.150E-04(NNE)	5.701E-03(NNE)
SKIN (mrem)	2.229E-03(NNE)	2.229E-03(NNE)	2.155E-03(NNE)	1.995E-03(NNE)	9.310E-04(SSE)	7.308E-03(NNE)
ORGAN (mrem)	1.937E-04(E)	1.937E-04(E)	2.025E-04(W)	8.515E-05(WNW)	8.050E-05(E)	4.137E-04(E)
CRITICAL PERS-ORG	CH-TH	CH-TH	CH-TH	TA-LN	TA-LN	CH-TH

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	.04	10.0	05
BETA AIR (mrad)	10.0	.01	20.0	01
WHOLE BODY (mrem)	2.5	.07	5.0	11
SKIN (mrem)	7.5	.03	15.0	05
ORGAN (mrem)	7.5	.00	15.0	.00
CRITICAL PERSON-ORGAN		(CH-TH)		(CH-TH)

CRITICAL ORGANS: BN=BONE, LV=LIVER, TB=TOTAL BODY, TH=THYROID, KD=KIDNEY, LN=LUNG, GI=GI-LLI
 CRITICAL PERSON: AD=ADULT, TA=TEENAGER, CH=CHILD, IN=INFANT

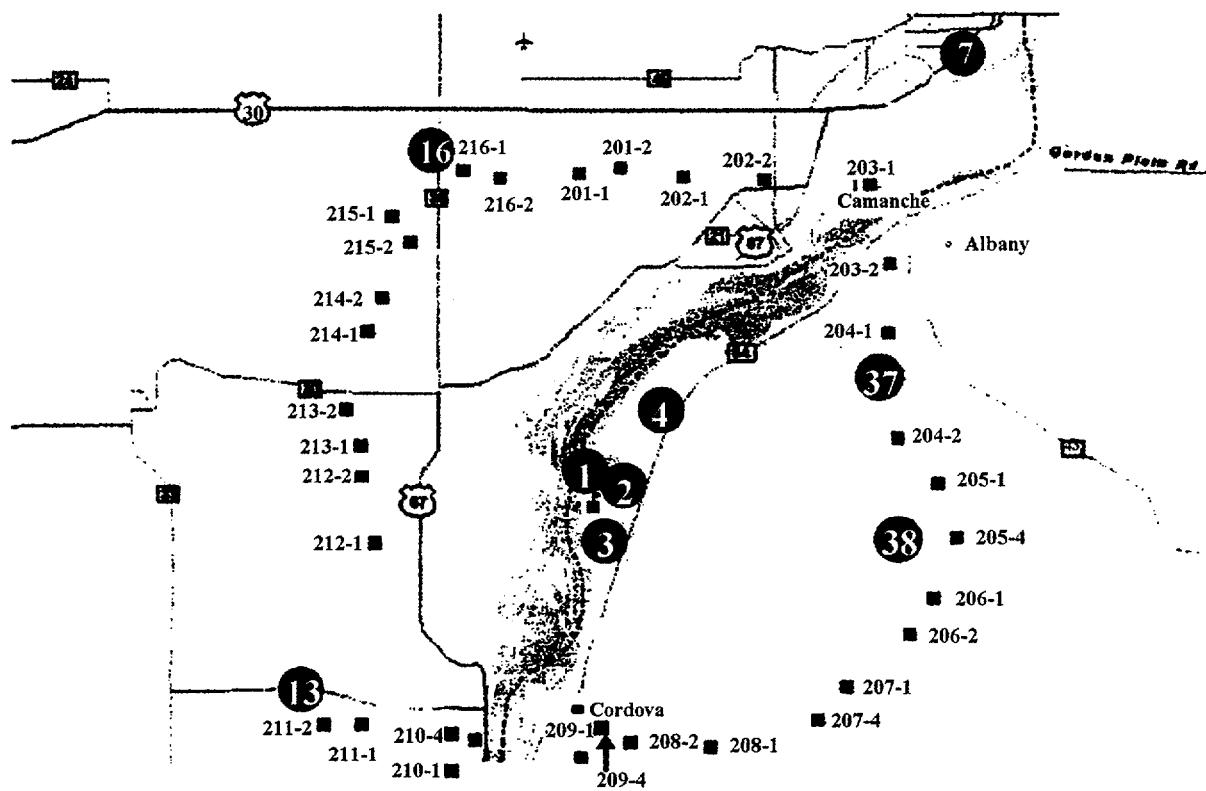
Maximum Offsite Values (pCi/m3)

	Iodine	2.90E-04
Date of calculation: 4/22/2002	Particulate Matter	1.35E+00
	Data Recovery (priority parameters)	99.3%

Quad Cities

Figure 5.0-1

Quad Cities Outer Ring TLD's and Air Sampling Sites



- = Air Sampling Sites
- = Outer Ring TLD Locations

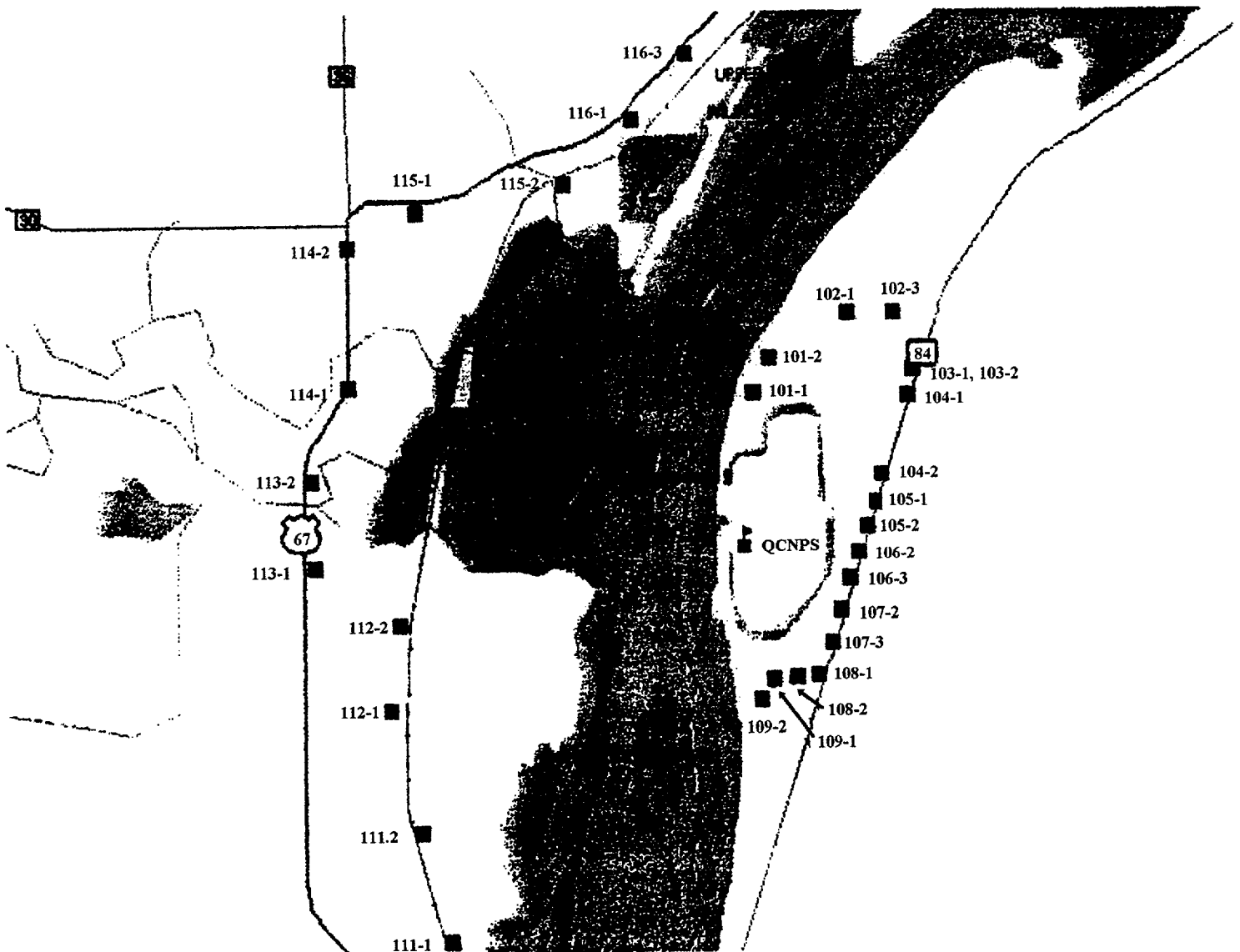
Air Sampling Sites

- | | |
|-------------------|---------------------|
| 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

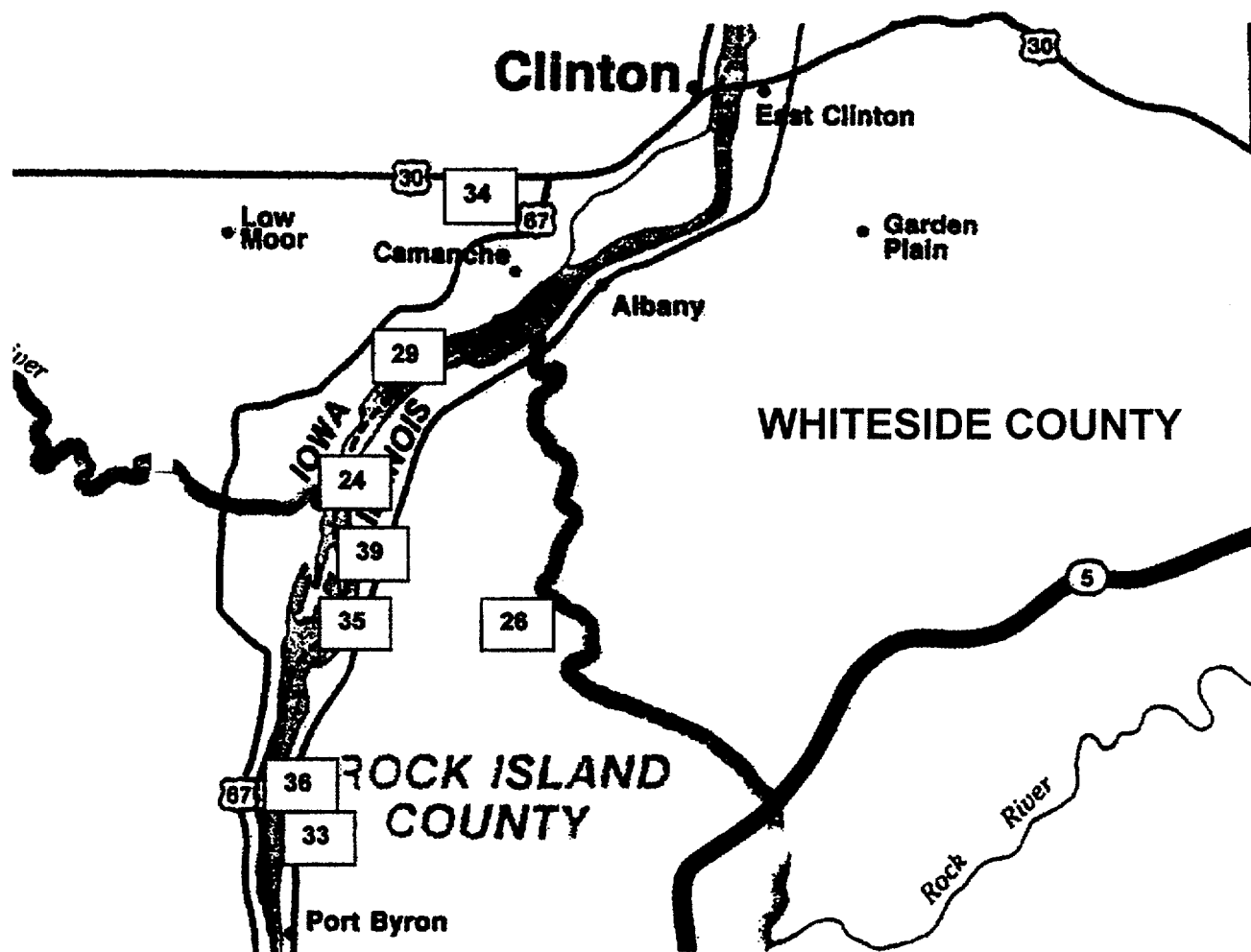
Quad Cities Inner Ring TLD Locations



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

Air Sampling	TLD	Fish	Milk	Sediments	Surface Water	Well Water	Vegetation
--------------	-----	------	------	-----------	---------------	------------	------------

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	.	.	.	.	.	.	◀

CENSUS

Dairy
 Residence
 Livestock

TABLE 5.0-2

QUAD CITIES STATION

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLING LOCATIONS

1. AIR SAMPLERS

<u>Site Code</u> ^a	<u>Location</u>	<u>Distance</u> <u>(miles)</u>	<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	Nitrin	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> <u>(miles)</u>	<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

^a 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 (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> ^a	<u>Location</u>	<u>Distance (mile)</u>	<u>Direction</u>	<u>Sector</u>
Q-26	Bill Stanley Dairy	3.5	ESE	F

4. SURFACE WATER

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

^a 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> ^a	<u>Location</u>	<u>Distance</u> <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> ^a	<u>Location</u>	<u>Distance</u> <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> ^a	<u>Location</u>	<u>Distance</u> <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> ^a	<u>Location</u>	<u>Distance</u> <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	William Dohrmann	6.0	WNW	P
Q-Control(C)	Charles Leavens	9.5	NE	C

^a 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 ^a	Site					
1. Airborne Particulates	Onsite, Nearfield and Control		Filter exchange weekly	Gross Beta Gamma Isot.	Weekly Quarterly Composite (or if weekly gross beta in a sample exceeds 5X the average concentration of preceding calendar quarter).		
	Q-01	Onsite No. 1					
	Q-02	Onsite No. 2					
	Q-03	Onsite No.3					
	Q-04	Nittrin					
	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. (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	

^a 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 ^a	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: May-October Monthly: November-April	I-131 Gamma Isot.	Biweekly: May-October Monthly: November-April
6. Vegetables	Quad 1	Robert Ziegler	Annually - two varieties from each location as available at harvest.	Gamma Isot.	Annually
	Quad 2	Dale Nimmic		I-131	Annually, on broad leaf vegetation.
	Quad 3	Amy Johnston			
	Quad 4	William Dohrmann			
	Control	Charles Leavens			
7. Ground/Well 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. Monthly composite. Quarterly composite.
	Q-34 (C)	Comanche		Gamma Isot.	
			Tritium		
9. Fish (at least two species)	Q-24	Pool #14 of Mississippi River	Two times/year	Gamma Isot.	Two times/year on edible portions only.
	Q-29 (C)	Mississippi River Upstream			
10. Sediments	Q-28	Cordova, Downstream on Mississippi River	Semiannually	Gamma Isot.	Semiannually
11. Land Use Census					
		Milch Animals			
	a.	Site Boundary to 2 miles	-	a. Enumeration by a door to door or equivalent counting technique.	Annually during grazing season.
	b.	2 miles to 6.2 miles	-	b. Using referenced information from county agricultural agents or other reliable sources.	
	c.	At dairies listed in Item 5.	-	c. Inquire as to feeding practices:	Annually during grazing season.

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

^a 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, 50-265Location of Facility Rock Island, Illinois Reporting Period 1st Quarter 2001

(County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean	Highest Mean ^a Range	Control Locations Mean ^a Range	Number of Non-routine Results
Air Particulates (pCi/m ³)	Gross Beta 64	0.01	0.027 (51/52) (0.015-0.039)	Q-04 ^b , Nitrin 1.7mi. NE, Sector C	0.029 (13/13) (0.021-0.039)	0.029 (13/13) (0.018-0.038)	0
	Gamma Spec. 5						
	Cs-134	0.01	<LLD	-	-	<LLD	0
	Cs-137	0.01	<LLD	-	-	<LLD	0
	Other Gammas	0.01-0.04	<LLD	-	-	<LLD	0
Airborne Iodine (pCi/m ³)	I-131 35	0.07	<LLD	-	-	<LLD	0
Milk (pCi/L)	I-131 3	5	<LLD	-	-	None	0
	Gamma Spec. 3						
	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-33, Cordova 3.5 mi. SSW, Sector K	4.0 (1/1)	4.0 (1/1)	0
	Gamma Spec. 2						
	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
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	18.9 (78/78) (16-24)	Q-203-2 ^c 5.0 mi. NE, Sector C	24 (1/1)	19 (2/2) (19-19)	0

^a Mean and range based on detectable measurements only. Fractions indicated in parentheses.^b Locations Q-04 and Q-07 (C) had identical means of 0.029 pCi/m³. Both are detailed in this summary.^c Locations Q-203-2, 204-1, 204-2 and 215-2 had identical means of 24 mR. Only Q-203-2 is detailed in this summary.

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 2001
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean__	Highest Mean ^a Range	Control Locations Mean ^a Range	Number of Non-routine Results
Air Particulates (pCi/m ³)	Gross Beta 60	0.01	0.019 (43/48) (0.011-0.029)	Q-03 ^b , Onsite No. 3 0.6 mi S, Sector J	0.020 (11/12) (0.011-0.029)	0.020 (12/12) (0.011-0.029)	0
	Gamma Spec. 5						
	Cs-134	0.01	<LLD	-	-	<LLD	0
	Cd-137	0.01	<LLD	-	-	<LLD	0
	Other Gammas	0.01-0.04	<LLD	-	-	<LLD	0
Airborne Iodine (pCi/m ³)	I-131 30	0.07	<LLD	-	-	None	0
Milk (pCi/L)	I-131 6	5.0/0.5 ^c	<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. 10						
	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

^a Mean and range based on detectable measurements only. Fractions indicated in parentheses.

^b Locations Q-03 and Q-07 (C) had identical means of 0.020 pCi/m³. Both are detailed in this summary.

^c 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, 50-265Location of Facility Rock Island, Illinois Reporting Period 2nd Quarter 2001

(County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean	Highest Mean ^a Range	Control Locations Mean ^a Range	Number of Non-routine Results
Surface Water (pCi/L)	Gross Beta 6	4	7.1 (2/3) (4.1-10.1)	Q-33, Cordova 3.3 mi. SSW, Sector K	7.1 (2/3) (4.1-10.1)	5.0 (1/3)	0
	Gamma Spec. 6			-	-	<LLD	0
	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
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	22.4 (78/78) (18-27)	Q-201-1, 4.2 mi. N Sector A	27 (1/1)	20.5 (2/2) (20-21)	0

^a 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 2001

(County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean	Highest Mean ^a Range	Control Locations Mean ^a Range	Number of Non-routine Results				
Air Particulates (pCi/m ³)	Gross Beta 65	0.01	0.026 (52/52) (0.018-0.039)	Q-07, Clinton 8.9mi NE, Sector C	0.028 (13/13) (0.020-0.038)	0.028 (13/13) (0.020-0.038)	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 ³)	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 12	0.06	<LLD	-	-	<LLD	0				
	Gamma Spec. 12										
	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	4.9 (2/3) (4.6-5.1)	Q-33 Cordova 3.3 mi. SSW, Sector K	4.9 (2/3) (4.6-5.1)	4.6 (2/3) (4.3-4.9)	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

^a 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 2001
 (County, State)

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	18.2 (78/78) (15-21)	Q-102-1 ^b , 1.3 mi. NNE, Sector B	21 (1/1)	16.5 (2/2) (16-17)	0

^a Mean and range based on detectable measurements only. Fractions indicated in parentheses.

^b Locations Q-102-1, 201-1 and 213-1 had identical means of 21 mR. Only Q-102-1 is detailed in this summary.

Table 5.0-6

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 4th Quarter 2001

(County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean	Highest Mean ^a Range	Control Locations Mean ^a Range	Number of Non-routine Results					
Air Particulates (pCi/m ³)	Gross Beta 65	0.01	0.031 (52/52) (0.020-0.046)	Q-07, Clinton 8.9 mi NE, Sector C	0.035 (13/13) (0.024-0.048)	0.035 (13/13) (0.024-0.048)	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 ³)	I-131 30	0.10	<LLD	-	-	None	0					
Milk (pCi/L)	I-131 4	5.0/0.5 ^b	<LLD	-	-	None	0					
	Gamma Spec. 4											
	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. 10											
	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	-	-	<LLD	0					
	Cs-137	0.18	<LLD	-	-	<LLD	0					
	Other ODCM-Required Gammas	0.10-0.60	<LLD	-	-	<LLD	0					
Surface Water (pCi/L)	Gross Beta 6	4	<LLD	-	-	<LLD	0					
	Gamma Spec. 6											
	Cs-134		10					<LLD	-	-	<LLD	0
	Cs-137		10					<LLD	-	-	<LLD	0
	Other ODCM-Required Gammas		20					<LLD	-	-	<LLD	0
	Tritium 2		200					<LLD	-	-	<LLD	0

^a Mean and range based on detectable measurements only. Fractions indicated in parentheses.^b November- April LLD=5.0; May - October LLD=0.5.

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 2001
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean	Highest Mean ^a Range	Control Locations Mean ^a 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 15-30	15-30	<LLD	-	-	None	0
Gamma Background (TLDs) (mR/Qtr.)	Gamma Dose 80	9.7	21.9 (78/78) (18-27)	Q-208-2 ^b , 4.9 mi. SSE, Sector H	27 (1/1)	20.5 (2/2) (19-22)	0

^a Mean and range based on detectable measurements only. Fractions indicated in parentheses.

^b Locations Q-208-2 and Q-215-2 had identical results of 27 mR. Only Q-208-2 is detailed in this summary.

QUAD CITIES

APPENDIX II

METEOROLOGICAL DATA

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 2001

STABILITY CLASS - EXTREMELY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	0	0	0	0	0
NNE	0	0	0	1	0	0	1
NE	0	0	0	0	0	0	0
ENE	0	1	0	0	0	0	1
E	0	0	2	0	0	0	2
ESE	0	0	1	0	0	0	1
SE	0	0	2	0	0	0	2
SSE	0	0	2	1	0	0	3
S	0	0	0	3	1	0	4
SSW	0	1	2	3	2	0	8
SW	0	0	5	1	0	0	6
WSW	0	0	1	3	0	0	4
W	0	1	15	5	1	0	22
WNW	0	0	5	8	6	1	20
NW	0	2	4	11	7	1	25
NNW	0	1	4	1	1	0	7
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	6	43	37	18	2	106

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 5
 Hours of missing stability measurements in all stability classes: 1

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 2001

STABILITY CLASS - MODERATELY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	1	1	0	0	2
NNE	0	1	1	2	1	0	5
NE	0	2	0	0	0	0	2
ENE	0	3	0	0	0	0	3
E	0	1	1	1	0	0	3
ESE	0	2	5	0	0	0	7
SE	0	1	4	0	0	0	5
SSE	0	2	2	1	0	0	5
S	0	0	2	1	0	0	3
SSW	0	2	0	1	1	0	4
SW	0	4	2	3	0	0	9
WSW	0	0	4	3	0	0	7
W	0	9	7	4	2	0	22
WNW	0	1	6	1	0	0	8
NW	0	0	5	6	12	0	23
NNW	0	3	4	1	0	0	8
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	31	44	25	16	0	116

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 8
 Hours of missing stability measurements in all stability classes: 1

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 2001

STABILITY CLASS - SLIGHTLY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	2	0	0	0	3
NNE	0	1	3	1	0	0	5
NE	0	1	0	1	0	0	2
ENE	0	4	0	0	0	0	4
E	0	2	2	5	0	0	9
ESE	0	7	1	1	0	0	9
SE	0	0	4	1	0	0	5
SSE	0	3	1	1	0	0	5
S	0	3	0	1	0	0	4
SSW	0	3	4	2	1	0	10
SW	0	1	0	2	0	0	3
WSW	0	5	4	2	1	0	12
W	0	1	5	15	3	0	24
WNW	0	3	6	2	2	0	13
NW	0	7	9	6	2	2	26
NNW	0	12	4	3	1	0	20
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	54	45	43	10	2	154

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 6
 Hours of missing stability measurements in all stability classes: 1

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 2001

STABILITY CLASS - NEUTRAL (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	2	2	22	17	0	0	43
NNE	4	0	4	14	1	0	23
NE	0	3	9	3	10	15	40
ENE	2	5	11	1	1	0	20
E	5	16	6	10	5	0	42
ESE	5	7	5	21	11	1	50
SE	0	8	15	14	4	4	45
SSE	2	9	18	4	0	0	33
S	3	11	15	9	0	0	38
SSW	1	9	13	11	2	0	36
SW	0	7	12	12	7	2	40
WSW	0	13	19	21	12	1	66
W	2	9	35	64	27	12	149
WNW	0	10	30	75	30	11	156
NW	1	21	49	108	56	6	241
NNW	0	10	30	19	1	0	60
VARIABLE	0	0	0	0	0	0	0
TOTAL	27	140	293	403	167	52	1082

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 58
 Hours of missing stability measurements in all stability classes: 1

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 2001

STABILITY CLASS - SLIGHTLY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	2	5	0	0	0	7
NNE	0	2	1	1	2	0	6
NE	0	3	4	0	0	0	7
ENE	0	0	1	5	0	0	6
E	0	6	5	2	0	0	13
ESE	1	2	13	7	0	4	27
SE	0	3	16	17	5	0	41
SSE	0	4	19	9	1	0	33
S	1	3	9	16	0	0	29
SSW	0	8	12	10	10	2	42
SW	0	4	14	28	7	1	54
WSW	0	5	8	5	2	0	20
W	1	3	14	22	4	0	44
WNW	0	1	15	23	3	2	44
NW	0	0	21	18	0	0	39
NNW	0	6	5	2	0	0	13
VARIABLE	0	0	0	0	0	0	0
TOTAL	3	52	162	165	34	9	425

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 27
 Hours of missing stability measurements in all stability classes: 1

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 2001

STABILITY CLASS - MODERATELY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	3	2	0	0	6
NNE	0	3	6	1	0	0	10
NE	1	3	2	1	0	0	7
ENE	2	1	1	0	0	0	4
E	2	5	8	0	0	0	15
ESE	0	0	8	3	0	0	11
SE	1	2	3	4	0	0	10
SSE	0	1	4	10	0	0	15
S	0	1	3	3	0	2	9
SSW	0	0	2	8	1	0	11
SW	0	1	4	2	0	0	7
WSW	0	0	0	0	0	0	0
W	0	0	0	1	0	0	1
WNW	0	4	2	1	0	0	7
NW	0	1	3	7	0	0	11
NNW	0	3	2	2	0	0	7
VARIABLE	0	0	0	0	0	0	0
TOTAL	6	26	51	45	1	2	131

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

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 2001

STABILITY CLASS - EXTREMELY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	2	1	0	0	0	3
NNE	1	1	1	1	0	0	4
NE	0	2	0	0	0	0	2
ENE	0	1	1	0	0	0	2
E	0	1	0	0	0	0	1
ESE	1	0	0	0	0	0	1
SE	0	1	1	0	0	0	2
SSE	0	1	0	0	0	0	1
S	0	0	1	0	0	0	1
SSW	0	0	2	0	0	0	2
SW	0	0	1	0	0	0	1
WSW	0	0	0	0	0	0	0
W	0	0	0	1	0	0	1
WNW	0	1	2	1	0	0	4
NW	0	0	0	0	0	0	0
NNW	0	3	1	1	0	0	5
VARIABLE	0	0	0	0	0	0	0
TOTAL	2	13	11	4	0	0	30

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

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 2001

STABILITY CLASS - EXTREMELY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	6	3	2	3	0	14
NNE	0	2	5	1	0	0	8
NE	0	1	1	0	0	0	2
ENE	0	0	2	2	2	0	6
E	0	0	4	5	0	0	9
ESE	0	1	0	0	6	1	8
SE	0	1	4	1	2	0	8
SSE	0	0	5	7	6	0	18
S	0	0	6	21	11	1	39
SSW	0	3	10	17	9	2	41
SW	0	4	8	7	6	1	26
WSW	0	6	5	8	3	3	25
W	0	10	12	2	1	0	25
WNW	0	10	12	9	0	2	33
NW	0	5	9	2	2	0	18
NNW	0	8	3	2	1	0	14
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	57	89	86	52	10	294

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 20
 Hours of missing stability measurements in all stability classes: 0

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 2001

STABILITY CLASS - MODERATELY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	3	0	0	0	0	3
NNE	0	4	3	0	0	0	7
NE	0	3	5	2	0	0	10
ENE	0	3	1	4	0	0	8
E	0	2	4	6	0	0	12
ESE	0	0	1	6	6	0	13
SE	0	2	0	1	1	0	4
SSE	0	1	3	2	1	0	7
S	0	1	2	4	5	0	12
SSW	0	4	3	3	7	1	18
SW	1	2	1	2	1	1	8
WSW	0	4	4	1	2	2	13
W	0	5	3	3	1	1	13
WNW	1	1	1	2	1	6	12
NW	0	3	1	0	3	0	7
NNW	0	4	0	1	1	1	7
VARIABLE	0	0	0	0	0	0	0
TOTAL	2	42	32	37	29	12	154

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 15
 Hours of missing stability measurements in all stability classes: 0

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 2001

STABILITY CLASS - SLIGHTLY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	1	2	4	0	1	0	8
NNE	1	2	1	0	0	0	4
NE	1	7	2	2	0	0	12
ENE	0	2	1	2	0	0	5
E	2	2	5	2	0	0	11
ESE	0	1	0	5	1	0	7
SE	0	0	1	4	0	0	5
SSE	0	1	1	2	2	3	9
S	0	2	4	5	2	0	13
SSW	0	1	2	3	3	0	9
SW	0	1	1	1	2	5	10
WSW	1	3	1	1	1	4	11
W	2	3	1	2	0	4	12
WNW	1	0	2	3	2	5	13
NW	0	5	2	0	1	1	9
NNW	2	1	0	1	2	0	6
VARIABLE	0	0	0	0	0	0	0
TOTAL	11	33	28	33	17	22	144

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 11
 Hours of missing stability measurements in all stability classes: 0

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 2001

STABILITY CLASS - NEUTRAL (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	1	5	6	5	0	1	18
NNE	1	3	4	8	1	0	17
NE	2	8	12	18	7	0	47
ENE	2	3	22	17	6	0	50
E	1	4	24	40	6	0	75
ESE	1	2	3	27	7	1	41
SE	0	6	7	12	3	0	28
SSE	1	1	9	12	5	3	31
S	2	1	9	10	6	3	31
SSW	1	4	8	22	16	10	61
SW	1	6	9	14	8	6	44
WSW	2	8	12	15	3	9	49
W	2	7	7	17	10	14	57
WNW	1	6	12	14	18	4	55
NW	1	2	12	14	13	2	44
NNW	0	3	6	12	3	0	24
VARIABLE	0	0	0	0	0	0	0
TOTAL	19	69	162	257	112	53	672

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 58
 Hours of missing stability measurements in all stability classes: 0

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 2001

STABILITY CLASS - SLIGHTLY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	3	9	2	0	0	14
NNE	2	3	7	3	4	0	19
NE	0	3	4	2	0	0	9
ENE	1	1	2	7	1	0	12
E	0	4	19	14	0	1	38
ESE	0	3	8	16	7	0	34
SE	1	2	10	15	0	2	30
SSE	1	2	8	20	14	2	47
S	1	4	11	28	21	20	85
SSW	1	3	7	27	22	8	68
SW	0	5	8	28	13	2	56
WSW	1	0	6	10	1	1	19
W	2	1	13	7	1	0	24
WNW	0	2	7	9	0	0	18
NW	0	5	13	4	0	0	22
NNW	0	0	11	8	0	0	19
VARIABLE	0	0	0	0	0	0	0
TOTAL	10	41	143	200	84	36	514

Hours of calm in this stability class: 0
 Hours of missing wind measurements in this stability class: 66
 Hours of missing stability measurements in all stability classes: 0

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 2001

STABILITY CLASS - MODERATELY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	3	2	0	0	6
NNE	0	1	9	3	0	0	13
NE	0	3	2	1	1	0	7
ENE	0	1	4	0	0	0	5
E	0	0	3	0	0	0	3
ESE	0	1	0	6	0	0	7
SE	0	1	3	11	4	0	19
SSE	0	2	2	9	2	0	15
S	1	1	12	21	3	0	38
SSW	0	2	11	10	1	0	24
SW	1	2	2	8	0	0	13
WSW	0	2	3	4	0	0	9
W	0	4	1	3	0	0	8
WNW	2	1	1	1	0	0	5
NW	0	1	4	1	0	0	6
NNW	0	2	3	0	0	0	5
VARIABLE	0	0	0	0	0	0	0
TOTAL	4	25	63	80	11	0	183

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

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 2001

STABILITY CLASS - EXTREMELY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	1	0	0	0	2
NNE	0	1	0	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	0	1	0	0	0	0	1
E	1	0	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	1	0	0	0	0	1
SSE	0	1	0	1	0	0	2
S	1	0	4	2	1	0	8
SSW	0	3	5	1	0	0	9
SW	1	1	2	0	0	0	4
WSW	1	2	0	0	0	0	3
W	1	0	0	0	0	0	1
WNW	0	0	0	0	0	0	0
NW	2	0	0	1	0	0	3
NNW	1	0	0	0	0	0	1
VARIABLE	0	0	0	0	0	0	0
TOTAL	8	11	12	5	1	0	37

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: 0

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JULY-SEPTEMBER 2001

STABILITY CLASS - EXTREMELY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	3	18	4	0	0	25
NNE	0	2	6	11	0	0	19
NE	0	9	9	2	0	0	20
ENE	0	4	11	0	0	0	15
E	0	9	6	1	0	0	16
ESE	0	3	3	4	0	0	10
SE	0	7	6	5	0	0	18
SSE	1	8	12	1	0	0	22
S	0	2	20	19	0	1	42
SSW	0	8	16	6	1	1	32
SW	1	25	14	2	0	0	42
WSW	0	14	11	8	1	0	34
W	0	10	13	6	0	0	29
WNW	1	2	1	3	0	0	7
NW	0	12	6	10	0	0	28
NNW	0	5	14	5	0	0	24
VARIABLE	0	0	0	0	0	0	0
TOTAL	3	123	166	87	2	2	383

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 POWER STATION

PERIOD OF RECORD: JULY-SEPTEMBER 2001

STABILITY CLASS - MODERATELY UNSTABLE (DIFF TEMP 296-33 FT)
WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	3	4	3	0	0	10
NNE	0	3	0	2	0	0	5
NE	0	2	1	1	0	0	4
ENE	0	5	9	3	1	0	18
E	1	7	2	0	0	0	10
ESE	0	2	2	1	0	0	5
SE	0	3	3	1	1	0	8
SSE	1	3	4	0	0	0	8
S	1	2	3	0	0	0	6
SSW	1	10	3	0	2	0	16
SW	0	9	5	1	0	0	15
WSW	1	7	2	0	0	0	10
W	1	2	3	2	0	0	8
WNW	0	6	0	3	0	0	9
NW	0	3	1	2	0	0	6
NNW	0	4	3	1	0	0	8
VARIABLE	0	0	0	0	0	0	0
TOTAL	6	71	45	20	4	0	146

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 POWER STATION

PERIOD OF RECORD: JULY-SEPTEMBER 2001

STABILITY CLASS - SLIGHTLY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	1	1	5	1	0	0	8
NNE	0	2	3	0	0	0	5
NE	0	1	0	2	0	0	3
ENE	1	3	1	1	0	0	6
E	1	6	2	0	0	0	9
ESE	1	0	1	0	0	0	2
SE	0	6	1	2	0	0	9
SSE	0	4	2	1	1	0	8
S	2	4	7	3	1	0	17
SSW	0	4	5	0	2	0	11
SW	2	6	2	3	0	0	13
WSW	2	3	3	2	0	0	10
W	1	0	2	3	0	0	6
WNW	0	0	0	4	0	0	4
NW	0	1	2	5	0	0	8
NNW	0	0	4	0	2	0	6
VARIABLE	0	0	0	0	0	0	0
TOTAL	11	41	40	27	6	0	125

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 POWER STATION

PERIOD OF RECORD: JULY-SEPTEMBER 2001

STABILITY CLASS - NEUTRAL (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	1	8	8	13	8	0	38
NNE	0	4	7	7	4	0	22
NE	0	1	6	17	4	0	28
ENE	1	7	6	13	1	0	28
E	0	9	21	7	0	0	37
ESE	5	5	15	9	0	0	34
SE	1	5	4	10	2	0	22
SSE	0	8	8	5	1	0	22
S	2	11	15	7	1	1	37
SSW	1	6	9	9	0	0	25
SW	3	5	9	12	1	1	31
WSW	4	2	17	2	0	0	25
W	0	9	8	10	0	0	27
WNW	1	5	12	10	0	0	28
NW	1	5	9	17	5	0	37
NNW	1	3	10	8	3	2	27
VARIABLE	0	0	0	0	0	1	1
TOTAL	21	93	164	156	30	5	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: 2

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JULY-SEPTEMBER 2001

STABILITY CLASS - SLIGHTLY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	1	2	8	13	1	0	25
NNE	0	0	9	8	0	0	17
NE	0	4	8	5	2	0	19
ENE	0	5	8	17	1	0	31
E	0	8	26	8	0	0	42
ESE	2	4	13	22	0	0	41
SE	2	1	17	14	0	0	34
SSE	0	6	17	18	0	0	41
S	3	10	16	26	1	1	57
SSW	0	7	21	17	3	0	48
SW	1	11	32	13	0	0	57
WSW	0	8	16	10	0	0	34
W	2	4	12	16	0	0	34
WNW	0	6	18	11	0	0	35
NW	0	5	18	10	0	0	33
NNW	0	2	14	15	0	0	31
VARIABLE	0	0	0	0	0	0	0
TOTAL	11	83	253	223	8	1	579

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 POWER STATION

PERIOD OF RECORD: JULY-SEPTEMBER 2001

STABILITY CLASS - MODERATELY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	3	4	8	0	0	15
NNE	3	0	3	8	0	0	14
NE	1	4	6	6	0	0	17
ENE	1	4	5	1	0	0	11
E	3	10	4	2	0	0	19
ESE	2	2	10	8	1	0	23
SE	0	3	15	21	0	0	39
SSE	2	3	15	8	1	0	29
S	2	8	19	16	0	0	45
SSW	1	11	24	11	0	0	47
SW	2	7	15	0	0	0	24
WSW	0	4	10	2	0	0	16
W	2	3	4	5	0	0	14
WNW	0	2	4	8	1	0	15
NW	1	2	6	6	2	0	17
NNW	0	1	5	5	0	0	11
VARIABLE	0	0	0	0	0	0	0
TOTAL	20	67	149	115	5	0	356

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 POWER STATION

PERIOD OF RECORD: JULY-SEPTEMBER 2001

STABILITY CLASS - EXTREMELY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	1	2	2	0	0	0	5
NNE	1	4	1	0	0	0	6
NE	1	4	3	0	0	0	8
ENE	1	0	2	1	0	0	4
E	1	2	4	0	0	0	7
ESE	1	2	1	2	0	0	6
SE	0	0	3	4	0	0	7
SSE	1	4	9	10	0	0	24
S	0	5	4	2	0	0	11
SSW	1	4	10	6	0	0	21
SW	2	2	14	2	0	0	20
WSW	1	1	6	3	0	0	11
W	1	1	0	0	0	0	2
WNW	0	1	5	0	0	0	6
NW	2	0	1	4	0	0	7
NNW	0	1	1	1	0	0	3
VARIABLE	0	0	0	0	0	0	0
TOTAL	14	33	66	35	0	0	148

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 POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 2001

STABILITY CLASS - EXTREMELY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	0	1	1	0	2
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	4	0	0	0	4
SSE	0	0	1	1	0	0	2
S	0	0	7	5	6	4	22
SSW	0	0	10	6	4	0	20
SW	0	0	10	6	2	0	18
WSW	0	1	6	2	1	0	10
W	0	0	1	4	0	0	5
WNW	0	1	3	7	3	0	14
NW	0	1	0	2	1	0	4
NNW	0	1	1	2	3	0	7
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	4	43	36	21	4	108

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 POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 2001

STABILITY CLASS - MODERATELY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	3	2	1	0	7
NNE	0	2	0	0	0	0	2
NE	0	1	1	0	0	0	2
ENE	0	1	0	0	0	0	1
E	0	0	1	0	0	0	1
ESE	0	0	1	1	0	0	2
SE	0	3	2	0	0	0	5
SSE	0	1	1	0	0	1	3
S	0	1	3	3	1	1	9
SSW	0	2	3	5	1	0	11
SW	0	3	5	4	2	0	14
WSW	1	2	1	3	1	0	8
W	0	4	0	8	1	0	13
WNW	0	0	2	3	2	0	7
NW	0	1	0	4	4	0	9
NNW	0	0	1	0	3	0	4
VARIABLE	0	0	0	0	0	0	0
TOTAL	1	22	24	33	16	2	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: 1

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 2001

STABILITY CLASS - SLIGHTLY UNSTABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	1	1	1	1	0	4
NNE	0	0	1	0	0	0	1
NE	0	0	1	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	1	1	0	0	0	2
ESE	0	2	2	0	0	0	4
SE	1	1	3	4	0	0	9
SSE	0	1	1	5	1	1	9
S	0	0	3	3	0	0	6
SSW	0	3	1	6	2	0	12
SW	0	4	1	4	0	0	9
WSW	0	0	5	4	2	0	11
W	0	0	3	9	2	0	14
WNW	0	1	2	10	7	0	20
NW	0	1	2	2	5	0	10
NNW	0	3	1	2	1	0	7
VARIABLE	0	0	0	0	0	0	0
TOTAL	1	18	28	50	21	1	119

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 POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 2001

STABILITY CLASS - NEUTRAL (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	3	5	12	12	3	0	35
NNE	3	6	8	2	0	1	20
NE	2	5	1	7	2	0	17
ENE	2	9	3	3	0	1	18
E	1	4	4	3	5	0	17
ESE	2	4	6	6	6	3	27
SE	0	5	6	23	10	0	44
SSE	1	6	6	19	7	1	40
S	5	3	9	13	21	18	69
SSW	2	4	6	17	15	11	55
SW	1	7	12	28	15	2	65
WSW	7	8	21	42	5	0	83
W	4	5	25	77	20	29	160
WNW	2	5	25	82	29	19	162
NW	1	7	14	57	23	5	107
NNW	2	5	8	22	6	4	47
VARIABLE	0	0	0	0	0	0	0
TOTAL	38	88	166	413	167	94	966

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

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 2001

STABILITY CLASS - SLIGHTLY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	3	11	7	0	0	21
NNE	0	3	5	0	0	0	8
NE	1	2	2	2	0	0	7
ENE	0	1	7	12	0	0	20
E	0	4	7	7	0	0	18
ESE	1	3	8	5	2	0	19
SE	0	3	9	12	12	0	36
SSE	0	3	12	10	5	0	30
S	0	1	6	36	35	5	83
SSW	1	3	8	52	22	7	93
SW	0	6	19	38	22	1	86
WSW	1	1	14	10	4	0	30
W	0	2	19	24	1	0	46
WNW	0	7	8	12	2	0	29
NW	0	8	15	14	1	0	38
NNW	0	2	15	11	0	0	28
VARIABLE	0	0	0	0	0	0	0
TOTAL	4	52	165	252	106	13	592

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: 1

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 2001

STABILITY CLASS - MODERATELY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	2	4	2	0	0	8
NNE	0	1	6	1	0	0	8
NE	0	0	4	0	1	0	5
ENE	0	1	2	1	0	0	4
E	0	5	0	0	0	0	5
ESE	0	2	1	2	2	0	7
SE	0	0	5	2	0	0	7
SSE	1	0	9	8	1	0	19
S	1	2	4	18	1	0	26
SSW	0	1	19	28	0	0	48
SW	0	1	7	4	0	0	12
WSW	0	2	7	2	0	0	11
W	1	4	10	7	0	0	22
WNW	1	0	8	5	0	0	14
NW	0	2	1	8	0	0	11
NNW	2	2	6	5	0	0	15
VARIABLE	0	0	0	0	0	0	0
TOTAL	6	25	93	93	5	0	222

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 POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 2001

STABILITY CLASS - EXTREMELY STABLE (DIFF TEMP 296-33 FT)
 WINDS MEASURED AT 296 FEET

WIND DIRECTION	WIND SPEED (in mph)						TOTAL
	0.9-3	4-7	8-12	13-18	19-24	> 24	
N	0	0	1	1	0	0	2
NNE	0	0	0	0	0	0	0
NE	0	1	1	0	0	0	2
ENE	0	2	4	0	0	0	6
E	0	2	1	0	0	0	3
ESE	0	0	1	0	0	0	1
SE	0	0	2	0	0	0	2
SSE	0	0	6	3	0	0	9
S	0	0	15	11	3	0	29
SSW	0	0	1	15	0	0	16
SW	0	0	2	1	0	0	3
WSW	0	1	2	2	0	0	5
W	0	1	2	2	0	0	5
WNW	0	2	4	2	0	0	8
NW	0	0	2	1	0	0	3
NNW	0	0	4	1	0	0	5
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	9	48	39	3	0	99

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

2001 REMP SAMPLE RESULTS

QUAD CITIES

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QUAD CITIES

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QUAD CITIES

1.0 INTRODUCTION

The following constitutes the current 2001 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 2001.

QUAD CITIES

2.0 LISTING OF MISSED SAMPLES

Sample Type	Location Code	Expected Collection Date	Reason
SW	Q-33	01-05-01	No sample; water frozen.
SW	Q-34	01-05-01	No sample; water frozen.
SW	Q-33	01-12-01	No sample; water frozen.
SW	Q-34	01-12-01	No sample; water frozen.
SW	Q-33	01-20-01	No sample; water frozen.
SW	Q-34	01-20-01	No sample; water frozen.
SW	Q-33	01-27-01	No sample; water frozen.
SW	Q-34	01-27-01	No sample; water frozen.
SW	Q-33	02-02-01	No sample; water frozen.
SW	Q-34	02-02-01	No sample; water frozen.
SW	Q-33	02-09-01	No sample; water frozen.
SW	Q-34	02-09-01	No sample; water frozen.
SW	Q-33	02-17-01	No sample; water frozen.
SW	Q-34	02-17-01	No sample; water frozen.
SW	Q-33	02-23-01	No sample; water frozen.
SW	Q-34	02-23-01	No sample; water frozen.
AI	Q-03	03-02-01	No sample; pump found not running; collector reset pump. Charcoal volume based on one week plus 49 hours running time.
SW	Q-33	03-03-01	No sample; water frozen.
SW	Q-34	03-03-01	No sample; water frozen.
SW	Q-33	03-10-01	No sample; water frozen.
SW	Q-34	03-10-01	No sample; water frozen.
SW	Q-33	03-17-01	No sample; water frozen.
SW	Q-34	03-17-01	No sample; water frozen.
SW	Q-33	03-24-01	No sample; water frozen.
SW	Q-34	03-24-01	No sample; water frozen.

QUAD CITIES

2.0 LISTING OF MISSED SAMPLES

Sample Type	Location Code	Expected Collection Date	Reason
A	Q-01	05-04-01	<u>All</u> air particulates and <u>paperwork</u> lost in transit. Paperwork recreated by Program Coordinator through phone calls to collectors. Illinois side collector had no copy of readings; verified information he could be sure of.
MI	Q-26	05-04-01	One gallon of milk lost in transit; analyses done on gallon received. Milk collection time on recreated paperwork taken from sample container.
SW	Q-33	12-28-01	No sample; water frozen.
SW	Q-34	12-28-01	No sample; water frozen.

QUAD CITIES

3.0 LISTING OF SAMPLE ANOMALIES

Sample Type	Location Code	Collection Date	Reason
BS	Q-39	05-25-01	Collector unable to obtain sediment in May due to flooding on Mississippi River. Will collect when water recedes.
BS	Q-39	06-01-01	Sediment could not be collected due to flooding on Mississippi; collector will attempt to obtain next collection period.
BS	Q-39	06-08-01	Sediment could not be collected due to flooding on Mississippi.
BS	Q-39	06-15-01	Unable to collect sediment due to flooding on Mississippi.
BS	Q-39	06-22-01	Unable to collect sediment due to flooding on Mississippi.
BS	Q-39	06-29-01	Unable to collect sediment due to flooding on Mississippi.
BS	Q-39	07-06-01	Collector unable to collect sediment due to flooding on Mississippi River; will attempt to obtain next collection period.

NOTE: Sediment collected on 07-13-01.

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/m³ for Gross Beta and 0.07 pCi/m³ for I-131
 Units: 10⁻² pCi/m³

Q-01 Onsite No. 1							
Date Collected	Volume (m ³)	Gross Beta	I-131 ^a	Date Collected	Volume (m ³)	Gross Beta	I-131 ^a
01-05-01	286	3.3 ± 0.4; 0.7	-0.2 ± 0.5; 0.5	07-06-01	285	2.1 ± 0.4; 0.5	0.6 ± 0.4; 0.4
01-13-01	319	2.7 ± 0.3; 0.6	-	07-12-01	247	2.7 ± 0.4; 0.6	-
01-20-01	287	3.4 ± 0.4; 0.6	-0.3 ± 0.3; 0.3	07-20-01	321	2.6 ± 0.4; 0.6	1.0 ± 0.4; 0.4
01-27-01	285	3.3 ± 0.4; 0.7	-	07-27-01	279	2.6 ± 0.4; 0.6	-
02-02-01	241	2.2 ± 0.4; 0.6	-0.5 ± 0.5; 0.5	08-03-01	286	2.7 ± 0.4; 0.6	-0.2 ± 0.4; 0.4
02-10-01	328	2.1 ± 0.3; 0.5	-	08-10-01	287	3.4 ± 0.4; 0.7	-
02-17-01	285	3.5 ± 0.4; 0.8	-0.9 ± 0.4; 0.4	08-17-01	283	2.5 ± 0.3; 0.5	-0.1 ± 0.4; 0.4
02-23-01	241	3.2 ± 0.4; 0.7	-	08-24-01	285	2.4 ± 0.3; 0.5	-
03-02-01	284	2.7 ± 0.4; 0.6	0.2 ± 0.5; 0.5	08-31-01	285	3.1 ± 0.3; 0.7	-0.3 ± 0.4; 0.4
03-10-01	328	2.2 ± 0.3; 0.5	-	09-07-01	284	2.0 ± 0.3; 0.5	-
03-17-01	285	1.9 ± 0.3; 0.5	0.6 ± 0.4; 0.4	09-14-01	285	2.0 ± 0.3; 0.5	-0.7 ± 0.5; 0.5
03-24-01	285	1.9 ± 0.4; 0.5	-	09-21-01	285	3.0 ± 0.4; 0.7	-
03-31-01	286	2.1 ± 0.3; 0.5	-0.3 ± 0.4; 0.4	09-28-01	290	2.2 ± 0.3; 0.5	0.7 ± 0.5; 0.5
1st Qtr. Mean±s.d.		2.7 ± 0.6	-0.2 ± 0.5	3rd Qtr. Mean±s.d.		2.6 ± 0.4	0.1 ± 0.6
04-07-01	282	2.2 ± 0.3; 0.5	-	10-05-01	286	2.8 ± 0.3; 0.6	-
04-13-01	248	1.3 ± 0.3; 0.4	-0.0 ± 0.5; 0.5	10-13-01	321	2.6 ± 0.4; 0.6	0.8 ± 0.4; 0.4
04-21-01	321	2.3 ± 0.3; 0.5	-	10-21-01	331	2.4 ± 0.3; 0.6	-
04-28-01	286	2.1 ± 0.4; 0.5	0.3 ± 0.4; 0.4	10-26-01	200	2.6 ± 0.4; 0.6	-0.6 ± 0.4; 0.4
05-04-01	NS ^b	-	-	11-02-01	289	2.4 ± 0.4; 0.6	-
05-12-01	323	2.1 ± 0.3; 0.5	1.1 ± 0.3; 0.3	11-09-01	279	2.7 ± 0.3; 0.6	-0.3 ± 0.5; 0.5
05-18-01	244	1.6 ± 0.4; 0.5	-	11-16-01	287	4.6 ± 0.4; 0.9	-
05-25-01	290	1.1 ± 0.3; 0.4	-0.5 ± 0.5; 0.5	11-23-01	292	4.1 ± 0.4; 0.9	-0.1 ± 0.4; 0.4
06-01-01	291	1.1 ± 0.3; 0.4	-	11-30-01	275	2.1 ± 0.3; 0.5	-
06-08-01	284	0.5 ± 0.2; 0.2	-0.8 ± 0.4; 0.4	12-07-01	287	4.0 ± 0.4; 0.8	-0.6 ± 0.5; 0.5
06-15-01	285	2.4 ± 0.3; 0.5	-	12-14-01	284	3.7 ± 0.4; 0.8	-
06-22-01	285	2.2 ± 0.4; 0.5	-0.4 ± 0.4; 0.4	12-21-01	286	3.1 ± 0.3; 0.7	0.2 ± 0.4; 0.4
06-29-01	288	2.6 ± 0.4; 0.6	-	12-28-01	287	3.8 ± 0.4; 0.8	-
2nd Qtr. Mean±s.d.		1.8 ± 0.6	-0.1 ± 0.7	4th Qtr. Mean±s.d.		3.1 ± 0.8	-0.1 ± 0.5

^a Volume based on a two week collection period.

^b "NS" = No sample; sample lost in transit.

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/m³ for Gross Beta and 0.07 pCi/m³ for I-131
 Units: 10⁻² pCi/m³

Q-02 Onsite No. 2							
Date Collected	Volume (m ³)	Gross Beta	I-131 ^a	Date Collected	Volume (m ³)	Gross Beta	I-131 ^a
01-05-01	286	2.9 ± 0.4; 0.7	0.7 ± 0.5; 0.5	07-06-01	285	2.1 ± 0.4; 0.5	-0.2 ± 0.5; 0.5
01-13-01	319	2.9 ± 0.3; 0.6	-	07-12-01	247	2.4 ± 0.4; 0.6	-
01-20-01	287	3.5 ± 0.4; 0.6	0.0 ± 0.4; 0.4	07-20-01	316	2.4 ± 0.4; 0.6	-0.3 ± 0.4; 0.4
01-27-01	285	3.4 ± 0.4; 0.7	-	07-27-01	274	2.6 ± 0.4; 0.6	-
02-02-01	241	2.4 ± 0.4; 0.6	1.2 ± 0.5; 0.5	08-03-01	286	2.5 ± 0.4; 0.6	-0.4 ± 0.5; 0.5
02-10-01	328	2.0 ± 0.3; 0.5	-	08-10-01	288	3.9 ± 0.4; 0.8	-
02-17-01	285	3.8 ± 0.4; 0.8	-0.5 ± 0.4; 0.4	08-17-01	283	2.3 ± 0.3; 0.5	0.2 ± 0.4; 0.4
02-23-01	242	2.7 ± 0.4; 0.6	-	08-24-01	285	2.4 ± 0.3; 0.5	-
03-02-01	280	2.8 ± 0.4; 0.6	0.3 ± 0.5; 0.5	08-31-01	285	3.1 ± 0.3; 0.7	-0.7 ± 0.5; 0.6
03-10-01	328	2.5 ± 0.3; 0.5	-	09-07-01	284	2.0 ± 0.3; 0.5	-
03-17-01	285	1.9 ± 0.3; 0.5	-0.2 ± 0.4; 0.4	09-14-01	285	2.7 ± 0.3; 0.6	-0.2 ± 0.5; 0.5
03-24-01	285	2.1 ± 0.4; 0.5	-	09-21-01	284	3.1 ± 0.4; 0.7	-
03-31-01	286	2.2 ± 0.3; 0.5	-0.1 ± 0.5; 0.5	09-28-01	290	2.2 ± 0.3; 0.5	0.1 ± 0.5; 0.5
1st Qtr. Mean±s.d.		2.7 ± 0.6	0.2 ± 0.6	3rd Qtr. Mean±s.d.		2.6 ± 0.5	-0.2 ± 0.3
04-07-01	282	2.3 ± 0.3; 0.5	-	10-05-01	287	3.0 ± 0.3; 0.6	-
04-13-01	248	1.8 ± 0.4; 0.5	0.3 ± 0.4; 0.5	10-13-01	321	2.9 ± 0.4; 0.6	-0.1 ± 0.4; 0.4
04-21-01	322	2.4 ± 0.3; 0.5	-	10-21-01	331	2.4 ± 0.3; 0.6	-
04-28-01	285	2.2 ± 0.4; 0.5	0.4 ± 0.5; 0.5	10-26-01	200	2.3 ± 0.4; 0.6	0.1 ± 0.5; 0.5
05-04-01	NS ^b	-	-	11-02-01	285	2.5 ± 0.4; 0.6	-
05-12-01	323	0.8 ± 0.2; 0.3	-1.1 ± 0.3; 0.3	11-09-01	279	2.5 ± 0.3; 0.6	0.2 ± 0.5; 0.5
05-18-01	240	1.6 ± 0.4; 0.5	-	11-16-01	288	4.5 ± 0.4; 0.9	-
05-25-01	290	1.1 ± 0.3; 0.4	0.1 ± 0.4; 0.4	11-23-01	292	3.5 ± 0.4; 0.8	-0.2 ± 0.4; 0.4
06-01-01	291	1.2 ± 0.3; 0.4	-	11-30-01	275	2.0 ± 0.3; 0.5	-
06-08-01	284	0.6 ± 0.2; 0.3	-0.1 ± 0.4; 0.4	12-07-01	287	3.1 ± 0.4; 0.7	-0.1 ± 0.5; 0.5
06-15-01	285	2.0 ± 0.3; 0.5	-	12-14-01	284	3.5 ± 0.4; 0.8	-
06-22-01	285	2.0 ± 0.3; 0.5	-0.0 ± 0.6; 0.6	12-21-01	286	3.3 ± 0.4; 0.7	-1.0 ± 0.5; 0.5
06-29-01	287	2.5 ± 0.4; 0.6	-	12-28-01	287	4.4 ± 0.5; 0.9	-
2nd Qtr. Mean±s.d.		1.7 ± 0.6	-0.1 ± 0.5	4th Qtr. Mean±s.d.		3.1 ± 0.8	-0.2 ± 0.4

^a Volume based on a two week collection period.

^b "NS" = No sample; sample lost in transit.

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/m³ for Gross Beta and 0.07 pCi/m³ for I-131
 Units: 10⁻² pCi/m³

Q-03 Onsite No. 3							
Date Collected	Volume (m ³)	Gross Beta	I-131 ^a	Date Collected	Volume (m ³)	Gross Beta	I-131 ^a
01-05-01	286	3.4 ± 0.4; 0.7	0.1 ± 0.4; 0.4	07-06-01	285	1.8 ± 0.3; 0.5	-1.0 ± 0.5; 0.6
01-13-01	319	3.2 ± 0.3; 0.7	-	07-13-01	283	2.8 ± 0.4; 0.6	-
01-20-01	287	3.8 ± 0.4; 0.7	0.0 ± 0.4; 0.4	07-20-01	286	3.0 ± 0.4; 0.7	0.3 ± 0.4; 0.4
01-27-01	285	3.6 ± 0.4; 0.7	-	07-27-01	274	2.6 ± 0.4; 0.6	-
02-02-01	241	1.9 ± 0.4; 0.5	0.2 ± 0.5; 0.5	08-03-01	286	1.8 ± 0.3; 0.5	0.6 ± 0.4; 0.4
02-10-01	328	2.3 ± 0.3; 0.5	-	08-10-01	288	3.6 ± 0.4; 0.8	-
02-17-01	285	3.4 ± 0.4; 0.7	-0.6 ± 0.4; 0.4	08-17-01	283	2.2 ± 0.3; 0.5	0.5 ± 0.5; 0.5
02-23-01	242	3.0 ± 0.4; 0.7	-	08-24-01	285	2.6 ± 0.3; 0.6	-
03-02-01	NS ^b	-	1.7 ± 0.6; 0.7	08-31-01	285	3.1 ± 0.3; 0.7	-0.2 ± 0.4; 0.4
03-10-01	328	2.0 ± 0.3; 0.4	-	09-07-01	284	2.1 ± 0.3; 0.5	-
03-17-01	285	1.8 ± 0.3; 0.5	0.0 ± 0.4; 0.4	09-14-01	286	2.3 ± 0.3; 0.5	0.1 ± 0.5; 0.5
03-24-01	285	1.5 ± 0.3; 0.4	-	09-21-01	285	3.1 ± 0.4; 0.7	-
03-31-01	286	2.1 ± 0.3; 0.5	0.1 ± 0.5; 0.5	09-28-01	290	2.6 ± 0.3; 0.6	-0.1 ± 0.5; 0.5
1st Qtr. Mean±s.d.		2.7 ± 0.8	0.2 ± 0.7	3rd Qtr. Mean±s.d.		2.6 ± 0.5	0.0 ± 0.5
04-07-01	282	2.3 ± 0.3; 0.5	-	10-05-01	287	2.8 ± 0.3; 0.6	-
04-13-01	248	1.5 ± 0.3; 0.4	-0.4 ± 0.6; 0.6	10-13-01	321	2.8 ± 0.4; 0.6	-0.8 ± 0.4; 0.4
04-21-01	322	2.3 ± 0.3; 0.5	-	10-21-01	331	2.1 ± 0.3; 0.5	-
04-28-01	286	1.8 ± 0.3; 0.5	-0.4 ± 0.4; 0.4	10-26-01	200	2.3 ± 0.4; 0.6	0.6 ± 0.5; 0.5
05-04-01	NS ^c	-	-	11-02-01	289	2.6 ± 0.4; 0.6	-
05-12-01	323	2.3 ± 0.3; 0.5	-0.3 ± 0.3; 0.3	11-09-01	279	2.7 ± 0.3; 0.6	-0.1 ± 0.4; 0.4
05-18-01	244	1.8 ± 0.4; 0.5	-	11-16-01	287	4.2 ± 0.4; 0.9	-
05-25-01	290	1.1 ± 0.3; 0.4	0.1 ± 0.5; 0.5	11-23-01	292	3.6 ± 0.4; 0.8	-0.5 ± 0.5; 0.5
06-01-01	291	1.3 ± 0.3; 0.4	-	11-30-01	275	2.1 ± 0.3; 0.5	-
06-08-01	284	0.5 ± 0.2; 0.2	0.6 ± 0.5; 0.5	12-07-01	287	3.7 ± 0.4; 0.8	-0.2 ± 0.4; 0.4
06-15-01	285	2.6 ± 0.3; 0.6	-	12-14-01	284	3.4 ± 0.4; 0.7	-
06-22-01	285	1.9 ± 0.3; 0.5	-0.5 ± 0.4; 0.4	12-21-01	286	3.3 ± 0.4; 0.7	-0.4 ± 0.5; 0.5
06-29-01	287	2.9 ± 0.4; 0.6	-	12-28-01	287	3.4 ± 0.4; 0.7	-
2nd Qtr. Mean±s.d.		1.9 ± 0.7	-0.2 ± 0.4	4th Qtr. Mean±s.d.		3.0 ± 0.6	-0.2 ± 0.5

^a Volume based on a two week collection period.

^b "NS" = No sample for gross beta; pump found not running; collector reset pump. Charcoal volume = 291m³, based on one week plus 49 hours running time.

^c "NS" = No sample; sample lost in transit.

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/m³ for Gross Beta and 0.07 pCi/m³ for I-131
 Units: 10⁻² pCi/m³

Q-04 Nitrin							
Date Collected	Volume (m ³)	Gross Beta	I-131 ^a	Date Collected	Volume (m ³)	Gross Beta	I-131 ^a
01-05-01	286	3.0 ± 0.4; 0.7	-0.8 ± 0.4; 0.5	07-06-01	284	2.2 ± 0.4; 0.5	-0.4 ± 0.4; 0.4
01-13-01	319	3.0 ± 0.3; 0.6	-	07-13-01	282	2.3 ± 0.4; 0.5	-
01-20-01	287	3.7 ± 0.4; 0.6	-0.9 ± 0.4; 0.4	07-20-01	286	2.7 ± 0.4; 0.6	0.1 ± 0.4; 0.4
01-27-01	280	3.6 ± 0.4; 0.8	-	07-27-01	274	2.6 ± 0.4; 0.6	-
02-02-01	241	2.7 ± 0.4; 0.7	0.0 ± 0.5; 0.5	08-03-01	286	2.6 ± 0.4; 0.6	0.1 ± 0.5; 0.5
02-10-01	328	2.4 ± 0.3; 0.6	-	08-10-01	287	3.4 ± 0.4; 0.7	-
02-17-01	285	3.9 ± 0.4; 0.8	-0.3 ± 0.4; 0.4	08-17-01	283	2.5 ± 0.3; 0.5	-0.2 ± 0.4; 0.4
02-23-01	241	3.3 ± 0.4; 0.7	-	08-24-01	285	2.5 ± 0.3; 0.5	-
03-02-01	284	2.8 ± 0.4; 0.6	0.6 ± 0.5; 0.5	08-31-01	285	3.0 ± 0.3; 0.6	-0.1 ± 0.5; 0.5
03-10-01	328	2.5 ± 0.3; 0.5	-	09-07-01	284	2.4 ± 0.3; 0.5	-
03-17-01	285	2.1 ± 0.3; 0.5	-0.3 ± 0.5; 0.5	09-14-01	285	2.7 ± 0.3; 0.6	0.4 ± 0.4; 0.4
03-24-01	285	2.3 ± 0.4; 0.6	-	09-21-01	285	3.3 ± 0.4; 0.7	-
03-31-01	286	2.1 ± 0.3; 0.5	0.2 ± 0.4; 0.4	09-28-01	290	2.5 ± 0.3; 0.6	0.3 ± 0.4; 0.4
1st Qtr. Mean±s.d.		2.9 ± 0.6	-0.2 ± 0.5	3rd Qtr. Mean±s.d.		2.7 ± 0.4	0.0 ± 0.3
04-07-01	282	2.0 ± 0.3; 0.5	-	10-05-01	287	2.6 ± 0.3; 0.6	-
04-13-01	249	1.4 ± 0.3; 0.4	-0.2 ± 0.4; 0.4	10-13-01	321	3.2 ± 0.4; 0.7	-0.2 ± 0.4; 0.4
04-21-01	321	2.4 ± 0.3; 0.5	-	10-21-01	331	2.2 ± 0.3; 0.5	-
04-28-01	286	1.8 ± 0.3; 0.5	-0.7 ± 0.5; 0.5	10-26-01	200	2.4 ± 0.4; 0.6	-1.0 ± 0.4; 0.5
05-04-01	NS ^b	-	-	11-02-01	289	2.3 ± 0.4; 0.5	-
05-12-01	323	2.0 ± 0.3; 0.5	-0.5 ± 0.3; 0.3	11-09-01	279	3.2 ± 0.4; 0.7	-0.2 ± 0.4; 0.4
05-18-01	295	1.2 ± 0.3; 0.4	-	11-16-01	287	4.0 ± 0.4; 0.8	-
05-25-01	290	1.1 ± 0.3; 0.3	0.4 ± 0.5; 0.5	11-23-01	292	3.5 ± 0.4; 0.8	0.4 ± 0.4; 0.4
06-01-01	291	1.3 ± 0.3; 0.4	-	11-30-01	275	2.0 ± 0.3; 0.5	-
06-08-01	284	0.7 ± 0.2; 0.3	0.7 ± 0.5; 0.5	12-07-01	287	3.0 ± 0.4; 0.7	-0.8 ± 0.5; 0.5
06-15-01	285	2.8 ± 0.3; 0.6	-	12-14-01	284	3.7 ± 0.4; 0.8	-
06-22-01	285	2.0 ± 0.3; 0.5	0.2 ± 0.4; 0.4	12-21-01	286	3.7 ± 0.4; 0.8	0.3 ± 0.4; 0.4
06-29-01	288	2.9 ± 0.4; 0.7	-	12-28-01	287	3.6 ± 0.4; 0.8	-
2nd Qtr. Mean±s.d.		1.8 ± 0.7	-0.0 ± 0.5	4th Qtr. Mean±s.d.		3.0 ± 0.7	-0.2 ± 0.6

^a Volume based on a two week collection period.

^b "NS" = No sample; sample lost in transit.

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/m³ for Gross Beta and 0.07 pCi/m³ for I-131
 Units: 10⁻² pCi/m³

Q-07 (C) Clinton							
Date Collected	Volume (m ³)	Gross Beta	I-131 ^a	Date Collected	Volume (m ³)	Gross Beta	I-131 ^a
01-05-01	244	3.3 ± 0.5; 0.8	-1.1 ± 0.5; 0.5	07-06-01	289	2.4 ± 0.4; 0.6	-0.8 ± 0.5; 0.5
01-12-01	295	2.8 ± 0.3; 0.6	-	07-13-01	286	3.0 ± 0.4; 0.7	-
01-20-01	327	3.8 ± 0.4; 0.6	0.1 ± 0.4; 0.4	07-20-01	286	2.8 ± 0.4; 0.6	0.2 ± 0.5; 0.5
01-27-01	283	3.8 ± 0.4; 0.8	-	07-27-01	288	3.2 ± 0.4; 0.7	-
02-02-01	249	2.7 ± 0.4; 0.6	-0.1 ± 0.5; 0.5	08-03-01	285	3.0 ± 0.4; 0.7	-0.2 ± 0.5; 0.5
02-09-01	273	2.5 ± 0.4; 0.6	-	08-10-01	283	3.8 ± 0.4; 0.8	-
02-17-01	336	3.7 ± 0.4; 0.8	-0.2 ± 0.4; 0.4	08-17-01	283	2.4 ± 0.3; 0.5	0.0 ± 0.4; 0.4
02-23-01	247	3.1 ± 0.4; 0.7	-	08-25-01	337	2.7 ± 0.3; 0.6	-
03-03-01	318	3.3 ± 0.4; 0.7	-0.1 ± 0.5; 0.5	09-01-01	288	3.0 ± 0.3; 0.6	-1.1 ± 0.4; 0.5
03-10-01	285	1.8 ± 0.3; 0.4	-	09-08-01	282	2.6 ± 0.3; 0.6	-
03-17-01	285	2.2 ± 0.4; 0.5	-0.8 ± 0.5; 0.5	09-15-01	288	2.4 ± 0.3; 0.5	0.1 ± 0.5; 0.5
03-24-01	284	2.1 ± 0.4; 0.5	-	09-22-01	285	3.7 ± 0.4; 0.8	-
03-30-01	253	2.4 ± 0.4; 0.6	-0.2 ± 0.5; 0.5	09-29-01	288	2.0 ± 0.3; 0.5	-0.1 ± 0.5; 0.5
1st Qtr. Mean±s.d.		2.9 ± 0.7	-0.3 ± 0.4	3rd Qtr. Mean±s.d.		2.8 ± 0.5	-0.3 ± 0.5
04-06-01	284	2.2 ± 0.3; 0.5	-	10-06-01	272	3.1 ± 0.4; 0.7	-
04-13-01	275	1.6 ± 0.3; 0.4	-0.1 ± 0.5; 0.5	10-13-01	288	3.0 ± 0.4; 0.7	0.6 ± 0.4; 0.4
04-21-01	328	2.2 ± 0.3; 0.5	-	10-20-01	283	2.4 ± 0.4; 0.6	-
04-27-01	252	2.1 ± 0.4; 0.5	-0.0 ± 0.4; 0.4	10-26-01	250	2.9 ± 0.4; 0.6	-0.3 ± 0.4; 0.4
05-04-01	NS ^b	-	-	11-02-01	281	2.6 ± 0.4; 0.6	-
05-11-01	283	2.3 ± 0.3; 0.5	-0.4 ± 0.3; 0.3	11-09-01	293	3.1 ± 0.3; 0.7	0.6 ± 0.4; 0.4
05-18-01	297	1.7 ± 0.3; 0.5	-	11-16-01	282	4.8 ± 0.4; 1.0	-
05-25-01	283	1.2 ± 0.3; 0.4	0.7 ± 0.5; 0.5	11-23-01	286	4.3 ± 0.5; 0.9	0.6 ± 0.5; 0.5
06-01-01	284	1.2 ± 0.3; 0.4	-	11-30-01	289	2.5 ± 0.3; 0.6	-
06-08-01	284	1.1 ± 0.3; 0.3	1.1 ± 0.5; 0.5	12-08-01	325	4.5 ± 0.4; 0.9	-0.5 ± 0.5; 0.5
06-15-01	277	2.8 ± 0.3; 0.6	-	12-14-01	246	4.7 ± 0.5; 1.0	-
06-22-01	294	2.5 ± 0.4; 0.6	-0.6 ± 0.4; 0.4	12-22-01	318	4.0 ± 0.4; 0.8	-0.3 ± 0.5; 0.5
06-29-01	282	2.9 ± 0.4; 0.7	-	12-28-01	245	4.2 ± 0.5; 0.9	-
2nd Qtr. Mean±s.d.		2.0 ± 0.6	0.1 ± 0.7	4th Qtr. Mean±s.d.		3.5 ± 0.9	0.1 ± 0.5

^a Volume based on a two week collection period.

^b "NS" = No sample; sample lost in transit.

QUAD CITIES

Table 2. Airborne Particulates

Collection: Quarterly composites of weekly collections
 ODCM-
 Required LLDs: 0.01 pCi/m³
 Other LLDs:

Units: 10⁻⁴ pCi/m³

Sample Description and Concentration

<u>Q-01 Onsite No. 1</u>				
2001 Collection Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	QAP-3211	QAP-6623	QAP-9917	QAP-11968
Volume	3,747	3,432	3,709	3,710
Mn-54	1.1 ± 5.6; 5.6	1.2 ± 6.1; 6.1	1.5 ± 6.5; 6.5	1.0 ± 4.4; 4.4
Fe-59	-7.3 ± 14.8; 14.8	-3.1 ± 15.1; 15.1	-4.6 ± 6.0; 6.0	12.3 ± 7.4; 7.7
Co-58	1.3 ± 5.8; 5.8	-5.4 ± 6.7; 6.8	-5.8 ± 4.6; 4.8	1.3 ± 4.3; 4.3
Co-60	9.0 ± 8.5; 8.7	-6.3 ± 9.7; 9.8	2.4 ± 6.1; 6.1	7.7 ± 6.6; 6.8
Zn-65	-5.0 ± 12.6; 12.6	-3.3 ± 18.9; 18.9	-9.1 ± 11.7; 11.8	9.6 ± 12.3; 12.5
Zr/Nb-95	-11.1 ± 5.4; 5.8	13.8 ± 7.2; 7.6	-8.4 ± 11.8; 11.9	-22.1 ± 16.5; 16.9
Cs-134	-5.6 ± 6.7; 6.8	13.9 ± 7.5; 7.9	-4.9 ± 6.9; 7.0	-1.6 ± 7.4; 7.4
Cs-137	4.1 ± 6.9; 6.9	0.8 ± 6.8; 6.8	-5.1 ± 7.8; 7.9	1.7 ± 7.4; 7.4
Ba/La-140	-36.0 ± 4.7; 8.0	57.9 ± 6.4; 12.1	63.7 ± 5.9; 12.8	-110.8 ± 13.4; 23.8
<u>Q-02 Onsite No. 2</u>				
2001 Collection Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	QAP-3212	QAP-6624	QAP-9918	QAP-11969
Volume	3,742	3,428	3,699	3,706
Mn-54	-4.2 ± 7.5; 7.5	4.9 ± 6.0; 6.0	-8.8 ± 8.1; 8.2	1.5 ± 7.2; 7.2
Fe-59	-11.8 ± 14.0; 14.1	3.1 ± 11.5; 11.5	3.1 ± 10.6; 10.7	-5.3 ± 15.4; 15.4
Co-58	3.5 ± 5.5; 5.5	0.2 ± 6.9; 6.9	-10.3 ± 5.5; 5.8	-6.4 ± 6.2; 6.3
Co-60	0.3 ± 6.5; 6.5	1.4 ± 6.1; 6.1	8.8 ± 6.1; 6.3	2.5 ± 9.4; 9.4
Zn-65	-5.0 ± 16.9; 16.9	1.1 ± 15.4; 15.4	1.0 ± 14.2; 14.2	-2.7 ± 21.9; 21.9
Zr/Nb-95	9.1 ± 5.6; 5.8	-9.2 ± 6.8; 7.0	-1.5 ± 6.5; 6.5	6.8 ± 14.5; 14.5
Cs-134	-6.0 ± 8.6; 8.7	0.3 ± 7.1; 7.1	11.8 ± 8.2; 8.5	-1.0 ± 8.1; 8.1
Cs-137	-2.6 ± 6.2; 6.2	-0.6 ± 6.5; 6.5	7.1 ± 5.8; 6.0	-1.6 ± 7.6; 7.6
Ba/La-140	-85.6 ± 9.0; 17.7	34.9 ± 5.0; 8.0	12.8 ± 2.7; 3.5	-61.4 ± 11.6; 15.9

QUAD CITIES

Table 2. Airborne Particulates

Collection: Quarterly composites of weekly collections
 ODCM-
 Required LLDs: 0.01 pCi/m³
 Other LLDs:

Units: 10⁻⁴ pCi/m³

Sample Description and Concentration

Q-03 Onsite No. 3

2001 Collection Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	QAP-3213	QAP-6625	QAP-9919	QAP-11970
Volume	3,462	3,432	3,705	3,710
Mn-54	-4.5 ± 8.1; 8.1	-5.3 ± 8.0; 8.1	-4.6 ± 6.8; 6.8	1.0 ± 4.4; 4.4
Fe-59	-4.0 ± 11.3; 11.3	-23.6 ± 14.3; 14.9	4.6 ± 13.0; 13.0	10.3 ± 14.6; 14.8
Co-58	3.8 ± 5.9; 6.0	-1.8 ± 5.8; 5.8	-0.3 ± 4.0; 4.0	-3.9 ± 6.8; 6.9
Co-60	1.4 ± 7.3; 7.3	3.8 ± 6.9; 6.9	-3.9 ± 7.9; 7.9	3.3 ± 7.3; 7.3
Zn-65	-5.4 ± 13.6; 13.7	-15.2 ± 13.9; 14.2	12.2 ± 8.7; 8.9	9.6 ± 12.3; 12.5
Zr/Nb-95	-9.5 ± 11.2; 11.4	-1.0 ± 5.7; 5.7	0.2 ± 6.0; 6.0	3.7 ± 7.4; 7.4
Cs-134	5.6 ± 7.3; 7.4	5.0 ± 6.3; 6.4	4.5 ± 6.7; 6.8	-6.8 ± 7.6; 7.7
Cs-137	1.3 ± 8.0; 8.1	5.5 ± 5.7; 5.8	4.3 ± 5.8; 5.8	-4.1 ± 7.2; 7.2
Ba/La-140	-80.4 ± 10.2; 17.6	5.8 ± 12.9; 12.9	38.4 ± 4.6; 8.3	72.1 ± 7.8; 15.0

Q-04 Nitrin

2001 Collection Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	QAP-3214	QAP-6626	QAP-9920	QAP-11971
Volume	3,742	3,483	3,705	3,710
Mn-54	1.9 ± 5.8; 5.8	-7.3 ± 8.2; 8.3	1.8 ± 7.8; 7.8	-4.2 ± 7.3; 7.3
Fe-59	13.2 ± 8.2; 8.5	9.3 ± 5.8; 6.1	14.1 ± 11.4; 11.7	-12.8 ± 14.3; 14.5
Co-58	0.2 ± 6.3; 6.3	-2.1 ± 7.1; 7.1	4.3 ± 7.4; 7.4	1.0 ± 6.5; 6.5
Co-60	-1.9 ± 10.7; 10.7	2.5 ± 6.4; 6.5	-0.6 ± 8.4; 8.4	4.2 ± 9.7; 9.7
Zn-65	-13.0 ± 10.2; 10.5	2.1 ± 12.1; 12.1	8.3 ± 17.9; 17.9	-2.5 ± 15.8; 15.8
Zr/Nb-95	-5.3 ± 10.9; 10.9	-10.5 ± 6.6; 6.9	-7.8 ± 7.0; 7.2	-5.0 ± 6.9; 6.9
Cs-134	2.1 ± 5.2; 5.2	8.5 ± 6.2; 6.4	-0.3 ± 5.9; 5.9	-0.7 ± 7.7; 7.7
Cs-137	1.8 ± 4.4; 4.4	-2.8 ± 6.6; 6.6	-5.2 ± 7.1; 7.2	2.3 ± 8.0; 8.0
Ba/La-140	11.5 ± 2.7; 3.4	-38.3 ± 8.7; 11.1	-68.3 ± 8.9; 15.1	-21.5 ± 10.4; 11.1

QUAD CITIES

Table 2. Airborne Particulates

Collection: Quarterly composites of weekly collections
 ODCM-
 Required LLDs: 0.01 pCi/m³
 Other LLDs:

Units: 10⁻⁴ pCi/m³

Sample Description and Concentration

Q-07 (C) Clinton

2001 Collection Period	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Lab Code	QAP-3215	QAP-6627	QAP-9921	QAP-11972
Volume	3,685	3,428	3,775	3,664
Mn-54	3.1 ± 5.2; 5.3	2.1 ± 6.3; 6.3	2.5 ± 8.0; 8.0	0.4 ± 7.3; 7.3
Fe-59	18.2 ± 9.7; 10.2	3.1 ± 15.9; 15.9	-15.6 ± 14.8; 15.1	-10.7 ± 14.6; 14.7
Co-58	8.0 ± 4.7; 5.0	3.0 ± 3.9; 4.0	-0.6 ± 7.7; 7.7	-1.7 ± 6.8; 6.8
Co-60	7.0 ± 6.8; 6.9	3.8 ± 6.9; 6.9	-3.0 ± 8.9; 8.9	3.1 ± 8.1; 8.2
Zn-65	11.2 ± 11.6; 11.8	5.4 ± 16.3; 16.3	-13.5 ± 18.3; 18.5	8.4 ± 16.1; 16.2
Zr/Nb-95	6.3 ± 6.0; 6.1	8.4 ± 5.2; 5.4	2.4 ± 15.2; 15.2	-19.6 ± 8.7; 9.4
Cs-134	6.0 ± 7.7; 7.8	-5.1 ± 6.7; 6.8	1.3 ± 9.1; 9.1	0.5 ± 8.2; 8.2
Cs-137	-1.2 ± 5.9; 5.9	0.7 ± 7.3; 7.3	-2.1 ± 7.4; 7.4	0.7 ± 9.5; 9.5
Ba/La-140	-4.1 ± 9.5; 9.6	21.5 ± 8.3; 9.1	4.8 ± 8.5; 8.5	-49.4 ± 13.0; 15.7

QUAD CITIES

Table 3 . Milk	
Collection:	Biweekly (May - October) Monthly (November - April)
ODCM- Required LLDs:	I-131 = 0.5 pCi/L (May - October), I-131= 5 pCi/L (November - April), 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 Collected	01-05-01	02-02-01	03-02-01	04-07-01
Lab Code	QMI-76	QMI-792	QMI-1523,4	QMI-2573
I-131	0.04 ± 0.18; 0.18	0.06 ± 0.15; 0.15	-0.06 ± 0.21; 0.21	-0.16 ± 0.11; 0.11
Mn-54	-0.3 ± 5.0; 5.0	-0.2 ± 4.2; 4.2	0.7 ± 3.1; 3.1	1.7 ± 2.5; 2.5
Fe-59	-4.8 ± 7.1; 7.1	-3.9 ± 11.7; 11.7	-0.8 ± 6.7; 6.7	-5.4 ± 7.2; 7.3
Co-58	0.5 ± 4.8; 4.8	-0.3 ± 4.6; 4.6	1.8 ± 2.8; 2.8	0.5 ± 2.3; 2.3
Co-60	2.1 ± 4.6; 4.6	0.8 ± 5.4; 5.4	1.0 ± 3.3; 3.3	-0.4 ± 3.3; 3.3
Zn-65	-2.6 ± 8.4; 8.4	3.4 ± 11.7; 11.7	0.8 ± 6.9; 6.9	-5.4 ± 6.8; 6.9
Zr/Nb-95	0.2 ± 3.9; 3.9	-3.9 ± 6.1; 6.1	-2.1 ± 3.1; 3.1	-3.2 ± 6.5; 6.6
Cs-134	-1.2 ± 5.3; 5.3	-1.1 ± 5.6; 5.6	-1.5 ± 3.3; 3.3	0.7 ± 3.2; 3.2
Cs-137	2.8 ± 4.6; 4.6	1.3 ± 3.7; 3.7	0.6 ± 2.8; 2.8	-0.1 ± 2.9; 2.9
Ba/La-140	5.0 ± 4.4; 4.4	-11.5 ± 6.1; 6.3	-0.2 ± 3.1; 3.1	1.4 ± 2.6; 2.6
Date Collected	05-04-01	05-18-01	06-01-01	06-15-01
Lab Code	QMI-3639	QMI-4042	QMI-4473	QMI-4942
I-131	-0.04 ± 0.17; 0.17	-0.13 ± 0.16; 0.16	-0.27 ± 0.20; 0.20	-0.11 ± 0.18; 0.18
Mn-54	1.8 ± 4.0; 4.0	0.7 ± 4.1; 4.1	0.6 ± 2.3; 2.3	0.6 ± 3.4; 3.4
Fe-59	3.5 ± 9.9; 9.9	-10.7 ± 9.7; 9.8	1.7 ± 5.2; 5.2	-7.1 ± 8.6; 8.7
Co-58	-0.6 ± 4.3; 4.3	-0.3 ± 3.5; 3.5	1.1 ± 2.3; 2.4	-1.9 ± 3.4; 3.4
Co-60	0.3 ± 6.3; 6.3	1.3 ± 5.6; 5.6	0.2 ± 2.5; 2.5	-0.5 ± 4.7; 4.7
Zn-65	-10.8 ± 12.8; 12.8	5.4 ± 9.7; 9.7	1.3 ± 5.2; 5.2	4.2 ± 11.4; 11.4
Zr/Nb-95	3.3 ± 4.5; 4.5	-2.2 ± 4.7; 4.7	-2.3 ± 2.4; 2.5	-1.4 ± 3.2; 3.2
Cs-134	1.0 ± 4.5; 4.5	-4.5 ± 4.5; 4.5	-0.2 ± 2.7; 2.7	2.0 ± 4.4; 4.4
Cs-137	0.3 ± 4.0; 4.0	-4.0 ± 4.2; 4.2	0.5 ± 2.5; 2.5	3.2 ± 3.8; 3.8
Ba/La-140	2.2 ± 5.5; 5.5	2.0 ± 2.9; 2.9	-1.1 ± 2.2; 2.2	6.2 ± 4.8; 4.9

QUAD CITIES

Table 3 .	Milk	
	Collection:	Biweekly (May - October) Monthly (November - April)
	ODCM- Required LLDs:	I-131 = 0.5 pCi/L (May - October), I-131= 5 pCi/L (November - April), 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 Collected	06-29-01	07-13-01	07-27-01	08-10-01
Lab Code	QMI-5440	QMI-6008	QMI-6639	QMI-7029,30
I-131	0.02 ± 0.17; 0.17	-0.18 ± 0.18; 0.18	-0.18 ± 0.20; 0.20	-0.18 ± 0.20; 0.20
Mn-54	2.6 ± 2.1; 2.1	1.8 ± 2.6; 2.6	0.2 ± 2.8; 2.8	1.5 ± 3.0; 3.0
Fe-59	-1.4 ± 5.9; 5.9	-0.4 ± 4.6; 4.6	-0.7 ± 6.5; 6.5	1.6 ± 6.6; 6.6
Co-58	1.6 ± 2.2; 2.2	2.2 ± 2.5; 2.5	0.4 ± 2.9; 2.9	-1.7 ± 3.1; 3.1
Co-60	-2.0 ± 2.7; 2.7	3.7 ± 2.7; 2.7	1.6 ± 3.0; 3.0	0.8 ± 3.6; 3.6
Zn-65	0.2 ± 6.6; 6.6	-2.4 ± 6.3; 6.3	1.9 ± 5.4; 5.4	7.7 ± 8.0; 8.1
Zr/Nb-95	0.6 ± 2.4; 2.4	-0.9 ± 2.5; 2.5	1.3 ± 2.5; 2.5	1.2 ± 3.1; 3.1
Cs-134	-0.0 ± 2.8; 2.8	-1.7 ± 2.4; 2.4	0.8 ± 3.0; 3.0	-1.9 ± 3.9; 3.9
Cs-137	5.0 ± 2.7; 2.8	1.0 ± 3.0; 3.0	0.6 ± 3.2; 3.2	-0.3 ± 3.3; 3.3
Ba/La-140	-0.2 ± 2.4; 2.4	-8.0 ± 2.7; 2.9	0.6 ± 2.8; 2.8	8.3 ± 3.1; 3.3

Date Collected	08-24-01	09-07-01	09-21-01	10-05-01
Lab Code	QMI-7358	QMI-7845	QMI-8221	QMI-8871,2
I-131	-0.17 ± 0.16; 0.16	-0.00 ± 0.19; 0.19	0.02 ± 0.18; 0.18	-0.01 ± 0.19; 0.19
Mn-54	-0.8 ± 4.4; 4.4	-1.2 ± 2.3; 2.3	4.0 ± 3.9; 4.0	-0.3 ± 1.3; 1.3
Fe-59	-9.3 ± 9.9; 10.0	0.2 ± 3.7; 3.7	1.8 ± 8.4; 8.4	-0.9 ± 2.8; 2.8
Co-58	0.5 ± 5.2; 5.2	-1.7 ± 2.2; 2.2	1.8 ± 5.0; 5.0	0.1 ± 1.5; 1.5
Co-60	-2.7 ± 5.1; 5.2	0.3 ± 2.5; 2.5	0.1 ± 5.6; 5.6	-0.3 ± 1.5; 1.5
Zn-65	0.7 ± 13.5; 13.5	3.5 ± 4.7; 4.8	10.0 ± 13.7; 13.8	-0.7 ± 3.5; 3.5
Zr/Nb-95	-4.8 ± 4.4; 4.5	-0.4 ± 2.4; 2.4	-0.9 ± 4.6; 4.6	0.6 ± 1.5; 1.5
Cs-134	3.1 ± 4.0; 4.0	-0.4 ± 2.5; 2.5	0.3 ± 4.8; 4.8	-0.4 ± 1.6; 1.6
Cs-137	0.9 ± 5.4; 5.4	0.8 ± 2.8; 2.8	1.9 ± 5.2; 5.2	2.8 ± 1.7; 1.7
Ba/La-140	1.2 ± 5.0; 5.0	-8.5 ± 3.2; 3.4	-5.2 ± 6.0; 6.1	-9.2 ± 1.5; 2.0

QUAD CITIES

Table 3.	Milk	
	Collection:	Biweekly (May - October) Monthly (November - April)
	ODCM- Required LLDs:	I-131 = 0.5 pCi/L (May - October), I-131= 5 pCi/L (November - April), 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 Collected	10-21-01	11-02-01	11-30-01
Lab Code	QMI-9509	QMI-10123	QMI-10716
I-131	0.07 ± 0.15; 0.15	0.02 ± 0.19; 0.19	-0.01 ± 0.18; 0.18
Mn-54	-0.5 ± 3.4; 3.4	1.8 ± 1.9; 2.0	0.8 ± 2.5; 2.5
Fe-59	-2.8 ± 7.3; 7.3	-2.7 ± 4.4; 4.5	-0.7 ± 5.9; 5.9
Co-58	-0.3 ± 3.0; 3.0	1.4 ± 1.9; 1.9	-2.2 ± 2.5; 2.5
Co-60	-0.3 ± 3.6; 3.6	-0.9 ± 2.0; 2.0	-1.3 ± 3.1; 3.1
Zn-65	-10.1 ± 8.4; 8.5	6.3 ± 4.7; 4.8	-1.1 ± 7.1; 7.1
Zr/Nb-95	-10.2 ± 6.3; 6.5	-4.8 ± 4.6; 4.6	-1.9 ± 2.8; 2.8
Cs-134	0.2 ± 3.4; 3.4	-0.6 ± 2.4; 2.4	1.4 ± 3.0; 3.0
Cs-137	2.8 ± 3.2; 3.3	-0.9 ± 2.4; 2.4	-1.1 ± 2.9; 2.9
Ba/La-140	-22.7 ± 3.6; 4.7	7.4 ± 1.6; 1.9	-0.8 ± 2.6; 2.6

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	05-23-01	05-23-01	05-23-01	05-23-01
Lab Code	QF-4093,4	QF-4095	QF-4096	QF-4097
Type	Freshwater Drum	Carp	River Carpsucker	Walleye
Mn-54	0.0 ± 0.6; 0.6	-0.1 ± 0.7; 0.7	0.1 ± 0.8; 0.8	0.1 ± 1.0; 1.0
Fe-59	-0.5 ± 1.4; 1.4	-1.7 ± 1.8; 1.8	1.2 ± 1.4; 1.4	1.1 ± 2.0; 2.0
Co-58	-0.5 ± 0.5; 0.5	0.2 ± 0.7; 0.7	0.1 ± 0.7; 0.7	-0.1 ± 0.8; 0.8
Co-60	0.8 ± 0.6; 0.6	0.4 ± 0.7; 0.7	-0.3 ± 0.9; 0.9	-0.2 ± 1.1; 1.1
Zn-65	-0.8 ± 1.5; 1.5	1.9 ± 1.8; 1.8	1.8 ± 2.1; 2.1	-1.2 ± 2.2; 2.2
Zr/Nb-95	-0.6 ± 0.5; 0.5	0.2 ± 0.7; 0.7	-0.6 ± 0.8; 0.8	-0.1 ± 0.9; 0.9
Cs-134	0.7 ± 0.6; 0.6	-1.1 ± 0.8; 0.8	-0.3 ± 0.8; 0.8	-0.2 ± 0.9; 0.9
Cs-137	0.2 ± 0.6; 0.6	0.4 ± 0.6; 0.6	0.1 ± 0.7; 0.7	-0.1 ± 0.9; 0.9
Ba/La-140	0.3 ± 0.6; 0.6	-0.7 ± 0.7; 0.7	0.5 ± 0.9; 0.9	-0.6 ± 0.9; 0.9
Date Collected	05-23-01	10-17-01	10-17-01	10-17-01
Lab Code	QF-4098	QF-9385	QF-9386	QF-9387,8
Type	Largemouth Bass	River Carpsucker	Carp	Freshwater Drum
Mn-54	-0.9 ± 1.5; 1.5	-0.8 ± 0.6; 0.6	-0.3 ± 0.8; 0.8	0.1 ± 0.6; 0.6
Fe-59	1.2 ± 2.8; 2.8	-1.0 ± 1.6; 1.6	1.2 ± 1.7; 1.8	-0.1 ± 1.3; 1.3
Co-58	-0.5 ± 1.4; 1.4	0.2 ± 0.6; 0.6	0.3 ± 0.6; 0.6	-0.5 ± 0.6; 0.6
Co-60	0.6 ± 1.4; 1.4	0.1 ± 0.8; 0.8	1.1 ± 1.0; 1.0	0.0 ± 0.8; 0.8
Zn-65	-3.0 ± 3.1; 3.2	1.6 ± 1.5; 1.5	-1.4 ± 2.2; 2.2	1.3 ± 1.5; 1.5
Zr/Nb-95	-0.3 ± 1.2; 1.2	-0.4 ± 1.3; 1.3	-0.6 ± 1.4; 1.4	0.3 ± 0.6; 0.6
Cs-134	0.1 ± 1.3; 1.3	0.2 ± 0.8; 0.8	0.4 ± 0.8; 0.8	-0.2 ± 0.6; 0.6
Cs-137	-0.0 ± 1.1; 1.1	0.2 ± 0.7; 0.7	0.2 ± 0.8; 0.8	0.1 ± 0.5; 0.5
Ba/La-140	0.2 ± 1.6; 1.6	-0.0 ± 0.7; 0.7	-0.7 ± 1.1; 1.1	-0.1 ± 0.5; 0.5

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	10-17-01	10-17-01
Lab Code	QF-9389	QF-9390
Type	Largemouth Bass	Bigmouth Buffalo
Mn-54	0.2 ± 0.6; 0.6	0.1 ± 0.7; 0.7
Fe-59	-0.5 ± 1.3; 1.3	-2.0 ± 1.9; 2.0
Co-58	-0.4 ± 0.7; 0.7	-0.1 ± 0.8; 0.8
Co-60	-0.1 ± 1.0; 1.0	-0.2 ± 1.0; 1.0
Zn-65	-2.2 ± 1.7; 1.8	-1.6 ± 2.4; 2.4
Zr/Nb-95	-0.6 ± 0.6; 0.6	-0.1 ± 1.8; 1.8
Cs-134	-0.8 ± 0.9; 0.9	0.2 ± 0.8; 0.8
Cs-137	-0.1 ± 0.6; 0.6	0.1 ± 0.8; 0.8
Ba/La-140	1.5 ± 0.9; 1.0	-2.6 ± 0.9; 1.0

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	05-23-01	05-23-01	05-23-01	05-23-01
Lab Code	QF-4099	QF-4100	QF-4101	QF-4102
Type	Freshwater Drum	Bigmouth Buffalo	River Carpsucker	Shorthead Redhorse
Mn-54	0.4 ± 0.9; 0.9	0.2 ± 0.6; 0.6	0.3 ± 0.9; 0.9	-0.0 ± 0.9; 0.9
Fe-59	1.4 ± 2.4; 2.4	-0.6 ± 1.7; 1.7	0.4 ± 2.3; 2.3	-0.4 ± 1.9; 1.9
Co-58	-0.5 ± 0.8; 0.8	0.5 ± 0.8; 0.8	-1.2 ± 1.0; 1.0	-0.2 ± 0.7; 0.7
Co-60	0.5 ± 1.1; 1.1	0.3 ± 0.9; 0.9	0.1 ± 1.0; 1.0	-0.1 ± 1.3; 1.3
Zn-65	0.6 ± 2.3; 2.3	0.7 ± 1.8; 1.8	1.3 ± 2.4; 2.4	-2.7 ± 2.2; 2.2
Zr/Nb-95	0.3 ± 0.9; 0.9	-0.1 ± 0.7; 0.7	-0.7 ± 0.8; 0.8	-0.1 ± 0.8; 0.8
Cs-134	0.5 ± 1.1; 1.1	-0.6 ± 0.9; 0.9	-0.3 ± 1.0; 1.0	-0.5 ± 1.0; 1.0
Cs-137	-0.1 ± 0.8; 0.8	0.7 ± 1.1; 1.1	-0.2 ± 0.9; 0.9	0.6 ± 0.9; 0.9
Ba/La-140	-0.5 ± 1.3; 1.3	0.2 ± 0.7; 0.7	0.4 ± 1.0; 1.0	0.9 ± 1.1; 1.1
Date Collected	05-23-01	10-18-01	10-18-01	10-18-01
Lab Code	QF-4103	QF-9380	QF-9381	QF-9382
Type	Carp	Carp	Largemouth Bass	River Carpsucker
Mn-54	-0.2 ± 0.7; 0.7	0.7 ± 0.7; 0.7	0.1 ± 0.7; 0.7	0.7 ± 0.7; 0.8
Fe-59	0.3 ± 1.5; 1.5	1.6 ± 2.1; 2.1	0.1 ± 1.3; 1.3	-1.5 ± 2.1; 2.1
Co-58	-0.1 ± 0.6; 0.6	-0.2 ± 0.7; 0.7	-0.8 ± 0.7; 0.7	0.3 ± 0.7; 0.7
Co-60	-0.2 ± 0.7; 0.7	1.2 ± 0.9; 0.9	0.4 ± 1.0; 1.0	-0.3 ± 1.0; 1.0
Zn-65	-0.5 ± 1.6; 1.6	0.5 ± 2.0; 2.0	0.5 ± 1.4; 1.4	0.5 ± 1.9; 1.9
Zr/Nb-95	0.4 ± 0.7; 0.7	0.6 ± 1.6; 1.6	-0.7 ± 0.7; 0.7	-1.2 ± 0.7; 0.7
Cs-134	-0.6 ± 0.8; 0.8	-0.5 ± 0.8; 0.8	-0.3 ± 0.8; 0.8	0.3 ± 0.7; 0.7
Cs-137	0.3 ± 0.6; 0.6	-0.1 ± 0.6; 0.6	0.2 ± 0.8; 0.8	-0.4 ± 0.8; 0.8
Ba/La-140	-0.4 ± 0.6; 0.6	2.5 ± 0.8; 0.9	-0.5 ± 0.7; 0.7	0.7 ± 0.6; 0.6

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	10-18-01	10-18-01
Lab Code	QF-9383	QF-9384
Type	Bigmouth Buffalo	Bluegill
Mn-54	-0.6 ± 1.3; 1.3	1.3 ± 0.9; 0.9
Fe-59	-2.4 ± 3.0; 3.0	1.9 ± 1.8; 1.8
Co-58	-0.3 ± 1.1; 1.1	-0.3 ± 0.6; 0.6
Co-60	-1.0 ± 1.7; 1.7	0.9 ± 0.9; 0.9
Zn-65	-0.8 ± 3.1; 3.1	-1.3 ± 2.0; 2.0
Zr/Nb-95	-0.3 ± 1.3; 1.3	0.1 ± 0.7; 0.7
Cs-134	0.0 ± 1.2; 1.2	0.5 ± 0.7; 0.7
Cs-137	1.7 ± 1.2; 1.2	0.1 ± 0.7; 0.7
Ba/La-140	-0.8 ± 1.6; 1.6	2.3 ± 1.0; 1.0

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-50 = 0.60; Co-58, Co-60 = 0.10; Zn-65 = 0.60; Zr/Nb-95 = 0.20;
 Ba/La = 0.60
 Units: 10^{-2} pCi/g dry weight

Sample Description and Concentration

Q-39 Downstream on Mississippi River

Date Collected	07-13-01	10-13-01
Lab Code	QBS-6009 ^a	QBS-9214
Mn-54	-0.2 ± 1.5; 1.5	0.8 ± 1.4; 1.4
Fe-59	-2.6 ± 3.3; 3.3	3.7 ± 3.1; 3.2
Co-58	-0.5 ± 1.4; 1.4	0.7 ± 1.2; 1.2
Co-60	1.1 ± 1.9; 1.9	1.1 ± 1.5; 1.5
Zn-65	-0.5 ± 3.7; 3.7	-3.3 ± 3.9; 3.9
Zr/Nb-95	-5.2 ± 1.8; 1.9	-4.6 ± 1.4; 1.6
Cs-134	2.8 ± 1.9; 1.9	1.9 ± 1.7; 1.7
Cs-137	8.2 ± 2.3; 2.6	5.1 ± 2.2; 2.3
Ba/La-140	-3.8 ± 1.7; 1.8	-1.2 ± 1.7; 1.8

^a Sediment due in May; not available due to flooding. Entered in report as soon as data became available.

QUAD CITIES

Table 6. Vegetation

Collection: Annually
 ODCM-
 Required LLDs: I-131 = 0.06, Cs-134 = 0.06, Cs-137 = 0.08 pCi/g wet weight
 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-Control (C) Charles Leavens

Date Collected	08-22-01	08-22-01
Lab Code	QVE-7321	QVE-7322
Type	Rhubarb leaves	Squash
Mn-54	-0.3 ± 0.9; 0.9	0.1 ± 0.9; 0.9
Fe-59	-2.7 ± 2.0; 2.0	-0.9 ± 2.2; 2.2
Co-58	0.6 ± 0.8; 0.8	0.1 ± 1.0; 1.0
Co-60	0.2 ± 1.1; 1.1	0.4 ± 1.1; 1.1
Zn-65	1.2 ± 2.2; 2.2	1.1 ± 2.3; 2.3
Zr/Nb-95	1.1 ± 0.9; 0.9	0.4 ± 0.7; 0.7
I-131	-0.2 ± 0.7; 0.7	1.3 ± 0.8; 0.8
Cs-134	-0.0 ± 1.0; 1.0	-0.1 ± 1.2; 1.2
Cs-137	0.0 ± 0.9; 0.9	-0.4 ± 1.2; 1.2
Ba/La-140	-1.2 ± 1.2; 1.2	2.2 ± 1.0; 1.0
Date Collected	08-22-01	
Lab Code	QVE-7323	
Type	Cucumbers	
Mn-54	-0.8 ± 1.0; 1.0	
Fe-59	0.1 ± 1.9; 1.9	
Co-58	-0.4 ± 0.9; 0.9	
Co-60	-0.4 ± 1.2; 1.2	
Zn-65	-0.8 ± 2.5; 2.5	
Zr/Nb-95	0.3 ± 0.8; 0.8	
I-131	-0.8 ± 0.7; 0.7	
Cs-134	0.1 ± 1.2; 1.2	
Cs-137	0.6 ± 0.9; 0.9	
Ba/La-140	-1.3 ± 0.9; 1.0	

QUAD CITIES

Table 6. Vegetation
 Collection: Annually
 ODCM-
 Required LLDs: I-131 = 0.06, Cs-134 = 0.06, Cs-137 = 0.08 pCi/g wet weight
 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 1 Robert Ziegler

Date Collected	08-21-01	08-21-01
Lab Code	QVE-7324	QVE-7325
Type	Onions	Rhubarb leaves
Mn-54	-1.2 ± 1.1; 1.1	-0.1 ± 1.0; 1.0
Fe-59	-0.7 ± 2.0; 2.0	-0.4 ± 2.0; 2.0
Co-58	0.3 ± 1.0; 1.0	0.5 ± 1.1; 1.1
Co-60	0.5 ± 1.2; 1.2	-0.4 ± 1.6; 1.6
Zn-65	-1.6 ± 2.8; 2.9	-0.3 ± 2.9; 2.9
Zr/Nb-95	-1.4 ± 1.0; 1.0	-0.5 ± 1.2; 1.2
I-131	-0.9 ± 0.7; 0.7	-0.0 ± 1.0; 1.0
Cs-134	0.1 ± 1.2; 1.2	-0.1 ± 1.2; 1.2
Cs-137	-0.1 ± 1.1; 1.1	1.7 ± 1.5; 1.5
Ba/La-140	-3.2 ± 1.4; 1.5	-2.9 ± 1.5; 1.6

Q-Quad 2 Dale Nimmic

Date Collected	08-21-01	08-21-01
Lab Code	QVE-7263	QVE-7264
Type	Okra	Rhubarb leaves
Mn-54	-0.2 ± 1.3; 1.3	-0.0 ± 0.8; 0.8
Fe-59	2.6 ± 3.1; 3.1	-0.2 ± 1.8; 1.8
Co-58	1.9 ± 1.6; 1.7	-0.2 ± 0.7; 0.7
Co-60	1.6 ± 2.0; 2.0	-1.0 ± 0.8; 0.8
Zn-65	1.9 ± 3.5; 3.5	-0.5 ± 2.1; 2.1
Zr/Nb-95	-2.3 ± 3.5; 3.5	0.3 ± 0.7; 0.7
I-131	-0.5 ± 1.4; 1.4	0.1 ± 0.9; 0.9
Cs-134	-0.7 ± 1.7; 1.7	1.0 ± 0.9; 0.9
Cs-137	0.6 ± 1.9; 1.9	0.2 ± 1.0; 1.0
Ba/La-140	0.6 ± 1.8; 1.8	-0.9 ± 0.7; 0.8

QUAD CITIES

Table 6. Vegetation

Collection: Annually
 ODCM-
 Required LLDs: I-131 = 0.06, Cs-134 = 0.06, Cs-137 = 0.08 pCi/g wet weight
 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

Date Collected 08-21-01
 Lab Code QVE-7265
 Type Potatoes

Mn-54 0.3 ± 1.3 ; 1.3
 Fe-59 0.4 ± 3.0 ; 3.0
 Co-58 0.9 ± 1.2 ; 1.2
 Co-60 -1.3 ± 1.5 ; 1.6
 Zn-65 -2.2 ± 3.3 ; 3.3
 Zr/Nb-95 -0.1 ± 1.1 ; 1.1
 I-131 -2.0 ± 0.9 ; 0.9
 Cs-134 0.0 ± 1.4 ; 1.4
 Cs-137 -0.9 ± 1.3 ; 1.3
 Ba/La-140 -3.2 ± 1.9 ; 1.9

Q-Quad 3 Amy Johnston

Date Collected	08-21-01	08-21-01
Lab Code	QVE-7266	QVE-7267
Type	Cabbage	Beets
Mn-54	0.2 ± 1.1 ; 1.1	0.6 ± 1.2 ; 1.2
Fe-59	-0.9 ± 1.9 ; 1.9	0.2 ± 2.3 ; 2.3
Co-58	0.2 ± 1.0 ; 1.0	-0.1 ± 0.9 ; 0.9
Co-60	-0.5 ± 1.2 ; 1.2	1.1 ± 1.4 ; 1.4
Zn-65	-2.6 ± 2.8 ; 2.9	-0.8 ± 3.2 ; 3.2
Zr/Nb-95	0.2 ± 1.1 ; 1.1	0.2 ± 1.0 ; 1.0
I-131	1.6 ± 0.9 ; 1.0	0.1 ± 1.0 ; 1.0
Cs-134	-0.3 ± 1.2 ; 1.2	-0.2 ± 1.3 ; 1.3
Cs-137	0.7 ± 1.3 ; 1.3	0.3 ± 1.1 ; 1.1
Ba/La-140	0.1 ± 1.2 ; 1.2	0.1 ± 0.8 ; 0.8

QUAD CITIES

Table 6. Vegetation

Collection: Annually

ODCM-

Required LLDs: I-131 = 0.06, Cs-134 = 0.06, Cs-137 = 0.08 pCi/g wet weight

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	08-22-01	08-22-01
Lab Code	QVE-7268	QVE-7269,70
Type	Cabbage	Potatoes
Mn-54	0.1 ± 0.9; 0.9	0.3 ± 0.6; 0.6
Fe-59	1.8 ± 2.0; 2.0	-0.1 ± 1.4; 1.4
Co-58	0.8 ± 0.8; 0.8	0.6 ± 0.6; 0.6
Co-60	0.6 ± 0.9; 0.9	-0.8 ± 0.9; 0.9
Zn-65	0.2 ± 2.3; 2.3	0.5 ± 1.8; 1.8
Zr/Nb-95	-0.4 ± 0.9; 0.9	-0.6 ± 0.6; 0.6
I-131	-0.2 ± 0.6; 0.6	0.7 ± 0.5; 0.5
Cs-134	-0.0 ± 1.0; 1.0	0.1 ± 0.7; 0.7
Cs-137	-0.4 ± 0.9; 0.9	-0.3 ± 0.6; 0.6
Ba/La-140	-0.5 ± 1.0; 1.0	-0.9 ± 0.7; 0.7

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

2001 Collection Period	January	February	March
Lab Code	NS ^a	NS ^a	QSW-2351 ^b
Gross Beta	-	-	4.0 ± 1.5; 1.6
Mn-54	-	-	-0.1 ± 2.9; 2.9
Fe-59	-	-	13.4 ± 5.3; 5.6
Co-58	-	-	0.6 ± 2.7; 2.7
Co-60	-	-	-1.6 ± 3.0; 3.0
Zn-65	-	-	-19.1 ± 6.7; 7.3
Zr/Nb-95	-	-	-3.8 ± 3.2; 3.2
Cs-134	-	-	-0.2 ± 3.0; 3.0
Cs-137	-	-	-2.7 ± 2.8; 2.9
Ba/La-140	-	-	0.3 ± 3.2; 3.2
2001 Collection Period	April	May	June
Lab Code	QSW-3626	QSW-4576 ^c	QSW-5634
Gross Beta	2.7 ± 1.5; 1.6	10.1 ± 2.0; 2.5	4.1 ± 1.1; 1.3
Mn-54	0.2 ± 1.3; 1.3	-0.7 ± 0.9; 0.9	-0.1 ± 1.7; 1.7
Fe-59	1.6 ± 2.6; 2.6	0.6 ± 1.7; 1.7	-0.7 ± 3.8; 3.8
Co-58	0.2 ± 1.2; 1.2	0.6 ± 0.9; 0.9	-0.4 ± 1.7; 1.7
Co-60	0.1 ± 1.4; 1.4	0.9 ± 0.9; 0.9	-0.3 ± 2.1; 2.1
Zn-65	0.9 ± 2.8; 2.9	-1.0 ± 2.1; 2.1	0.5 ± 4.4; 4.4
Zr/Nb-95	-0.8 ± 1.5; 1.5	-1.2 ± 0.9; 1.0	-3.0 ± 1.9; 2.0
Cs-134	-1.2 ± 1.5; 1.5	-0.1 ± 1.1; 1.1	-3.2 ± 2.2; 2.2
Cs-137	-0.5 ± 1.4; 1.4	0.2 ± 1.0; 1.0	0.1 ± 2.1; 2.1
Ba/La-140	-3.3 ± 1.4; 1.5	-0.8 ± 1.1; 1.1	-2.0 ± 2.9; 2.9

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			
2001 Collection Period	July	August	September
Lab Code	QSW-6734	QSW-7796	QSW-8664
Gross Beta	4.6 ± 0.9 ; 1.2	5.1 ± 1.0 ; 1.3	3.9 ± 1.4 ; 1.5
Mn-54	-0.8 ± 0.7 ; 0.7	-0.5 ± 1.7 ; 1.7	2.4 ± 3.2 ; 3.2
Fe-59	-0.2 ± 1.5 ; 1.5	-0.6 ± 3.4 ; 3.4	3.2 ± 5.7 ; 5.7
Co-58	0.5 ± 0.7 ; 0.7	-2.6 ± 1.8 ; 1.9	3.6 ± 3.0 ; 3.0
Co-60	0.5 ± 0.8 ; 0.8	1.7 ± 1.9 ; 1.9	-0.6 ± 3.7 ; 3.7
Zn-65	-1.2 ± 1.5 ; 1.6	-0.4 ± 3.5 ; 3.5	-0.4 ± 6.2 ; 6.2
Zr/Nb-95	-1.0 ± 0.7 ; 0.7	-2.2 ± 1.9 ; 1.9	-3.6 ± 5.9 ; 5.9
Cs-134	0.3 ± 0.8 ; 0.8	-0.2 ± 2.0 ; 2.0	-1.4 ± 3.8 ; 3.8
Cs-137	0.5 ± 0.8 ; 0.8	1.5 ± 1.8 ; 1.8	-1.2 ± 3.6 ; 3.6
Ba/La-140	-3.8 ± 0.9 ; 1.0	2.0 ± 2.2 ; 2.2	0.8 ± 3.9 ; 3.9
2001 Collection Period	October	November	December
Lab Code	QSW-9885	QSW-10942	QSW-11616 ^d
Gross Beta	2.9 ± 1.3 ; 1.4	3.0 ± 0.7 ; 0.9	3.3 ± 1.0 ; 1.1
Mn-54	-0.6 ± 1.4 ; 1.4	-0.1 ± 1.3 ; 1.3	3.5 ± 5.0 ; 5.0
Fe-59	-1.9 ± 3.0 ; 3.0	-1.1 ± 2.4 ; 2.4	7.5 ± 9.4 ; 9.4
Co-58	-0.2 ± 1.4 ; 1.4	0.0 ± 1.1 ; 1.1	-0.4 ± 4.3 ; 4.3
Co-60	0.9 ± 1.6 ; 1.6	-0.2 ± 1.5 ; 1.5	0.7 ± 5.0 ; 5.0
Zn-65	4.1 ± 3.3 ; 3.4	1.2 ± 2.5 ; 2.5	-6.8 ± 10.8 ; 10.8
Zr/Nb-95	-4.3 ± 3.3 ; 3.3	-2.3 ± 1.3 ; 1.4	-5.2 ± 7.9 ; 7.9
Cs-134	-0.6 ± 1.7 ; 1.7	0.5 ± 1.5 ; 1.5	2.8 ± 3.9 ; 3.9
Cs-137	0.5 ± 1.6 ; 1.6	-0.3 ± 1.5 ; 1.5	0.1 ± 4.2 ; 4.2
Ba/La-140	-2.7 ± 2.1 ; 2.1	-0.6 ± 1.2 ; 1.2	-5.7 ± 6.0 ; 6.1

^a No samples for month; water frozen.

^b Results reflect one sample for month (03-30-01); water frozen.

^c Gross beta repeated with a result of 10.0±2.5 pCi.L.

^d No sample collected on 12-28-01; water frozen.

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

2001 Collection Period	January	February	March
Lab Code	NS ^a	NS ^a	QSW-2352 ^b
Gross Beta	-	-	2.2 ± 1.4; 1.4
Mn-54	-	-	-2.7 ± 4.1; 4.1
Fe-59	-	-	-1.6 ± 10.0; 10.0
Co-58	-	-	-1.7 ± 3.6; 3.7
Co-60	-	-	-6.0 ± 4.6; 4.7
Zn-65	-	-	-19.0 ± 10.7; 11.0
Zr/Nb-95	-	-	-11.1 ± 4.8; 5.1
Cs-134	-	-	-0.3 ± 4.5; 4.5
Cs-137	-	-	1.4 ± 4.1; 4.1
Ba/La-140	-	-	4.2 ± 4.3; 4.4
2001 Collection Period	April	May	June
Lab Code	QSW-3627	QSW-4577	QSW-5635
Gross Beta	3.5 ± 1.4; 1.5	3.5 ± 1.0; 1.1	5.0 ± 1.1; 1.3
Mn-54	-1.0 ± 1.1; 1.1	-0.8 ± 3.8; 3.8	0.5 ± 1.7; 1.7
Fe-59	-0.6 ± 2.0; 2.1	3.0 ± 7.4; 7.4	10.2 ± 3.5; 3.8
Co-58	0.2 ± 1.1; 1.1	0.4 ± 3.9; 3.9	0.1 ± 1.5; 1.5
Co-60	-0.5 ± 1.2; 1.2	-2.6 ± 4.6; 4.6	0.8 ± 1.9; 1.9
Zn-65	-4.0 ± 2.5; 2.6	-4.3 ± 7.2; 7.2	5.1 ± 3.2; 3.3
Zr/Nb-95	-1.9 ± 1.2; 1.2	1.2 ± 4.3; 4.3	-7.5 ± 4.2; 4.3
Cs-134	0.6 ± 1.1; 1.1	-2.6 ± 4.0; 4.0	0.7 ± 2.1; 2.1
Cs-137	1.3 ± 1.2; 1.2	3.7 ± 5.1; 5.1	1.4 ± 2.2; 2.2
Ba/La-140	0.0 ± 1.4; 1.4	3.8 ± 4.7; 4.8	0.6 ± 1.5; 1.5

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				
<u>Q-34 (C) Camanche</u>				
2001 Collection Period	July	August	September	
Lab Code	QSW-6735	QSW-7797	QSW-8665	
Gross Beta	4.3 ± 0.9; 1.2	4.9 ± 1.0; 1.3	3.9 ± 1.3; 1.4	
Mn-54	-0.2 ± 0.7; 0.7	-1.6 ± 1.8; 1.8	0.5 ± 3.1; 3.1	
Fe-59	0.7 ± 1.2; 1.2	1.7 ± 2.8; 2.8	7.2 ± 5.8; 5.9	
Co-58	0.1 ± 0.6; 0.6	0.4 ± 1.6; 1.6	0.8 ± 3.2; 3.2	
Co-60	-0.3 ± 0.7; 0.7	0.5 ± 1.9; 1.9	0.4 ± 2.8; 2.8	
Zn-65	0.7 ± 1.2; 1.2	1.0 ± 3.6; 3.6	5.9 ± 6.1; 6.1	
Zr/Nb-95	-2.1 ± 0.7; 0.7	-1.7 ± 2.2; 2.2	-2.8 ± 3.4; 3.5	
Cs-134	0.2 ± 0.8; 0.8	1.3 ± 1.9; 1.9	0.1 ± 3.0; 3.0	
Cs-137	0.5 ± 0.8; 0.8	-0.5 ± 2.0; 2.0	-2.8 ± 3.7; 3.8	
Ba/La-140	-4.4 ± 0.8; 1.0	-0.9 ± 2.1; 2.2	3.1 ± 3.3; 3.3	
2001 Collection Period	October	November	December	
Lab Code	QSW-9886,7	QSW-10943	QSW-11617 ^c	
Gross Beta	3.3 ± 1.0; 1.1	3.8 ± 0.9; 1.0	3.7 ± 1.1; 1.3	
Mn-54	0.7 ± 1.0; 1.0	1.7 ± 1.8; 1.8	0.6 ± 4.8; 4.8	
Fe-59	-0.1 ± 1.9; 1.9	7.5 ± 4.0; 4.2	9.0 ± 9.7; 9.7	
Co-58	-1.2 ± 0.9; 0.9	-0.6 ± 1.6; 1.6	-1.6 ± 4.5; 4.5	
Co-60	0.6 ± 1.1; 1.1	0.3 ± 2.2; 2.2	4.0 ± 6.2; 6.3	
Zn-65	0.4 ± 1.9; 1.9	-3.7 ± 4.1; 4.1	9.3 ± 11.1; 11.2	
Zr/Nb-95	-0.4 ± 0.9; 0.9	1.2 ± 1.8; 1.8	-6.3 ± 4.0; 4.1	
Cs-134	-0.6 ± 1.0; 1.0	-1.6 ± 2.7; 2.7	0.4 ± 4.6; 4.6	
Cs-137	0.8 ± 1.0; 1.0	-2.0 ± 2.6; 2.6	6.4 ± 4.0; 4.1	
Ba/La-140	-3.2 ± 1.2; 1.3	-2.2 ± 2.6; 2.7	-3.4 ± 5.3; 5.3	

^a No samples for month; water frozen.

^b Results reflect one sample for month (03-30-01); water frozen.

^c No sample collected on 12-28-01; water frozen.

QUAD CITIES

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

2001 Collection Period	<u>Sample Description and Concentration</u> Lab Code	Tritium
	<u>Q-33 Cordova</u>	
1st Quarter	QSW- 2351 ^a	28 ± 99; 99
2nd Quarter	QSW- 5642	135 ± 92; 94
3rd Quarter	QSW- 8666	19 ± 81; 81
4th Quarter	QSW- 11618 ^b	44 ± 81; 82
	<u>Q-34 (C) Camanche</u>	
1st Quarter	QSW- 2352 ^a	115 ± 102; 104
2nd Quarter	QSW- 5643	102 ± 90; 91
3rd Quarter	QSW- 8667	96 ± 85; 86
4th Quarter	QSW- 11619 ^b	126 ± 85; 87

^a Results reflect one sample for quarter (03-30-01); water frozen.

^b No sample collected on 12-28-01; water frozen.

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	01-12-01	04-13-01	07-13-01	10-13-01
Lab Code	QWW-238	QWW-2885,6	QWW-6006	QWW-9212
H-3	60 ± 83; 84	122 ± 60; 48	37 ± 75; 75	-52 ± 81; 81
Mn-54	-0.8 ± 1.7; 1.7	1.1 ± 2.0; 2.0	0.4 ± 0.7; 0.7	2.7 ± 2.8; 2.8
Fe-59	-1.4 ± 3.8; 3.8	2.1 ± 4.2; 4.2	2.3 ± 1.3; 1.4	-3.3 ± 5.5; 5.5
Co-58	0.5 ± 1.8; 1.8	3.0 ± 1.9; 2.0	-0.8 ± 0.6; 0.6	1.5 ± 3.0; 3.0
Co-60	0.8 ± 1.8; 1.8	0.7 ± 2.5; 2.5	0.8 ± 0.7; 0.7	2.1 ± 3.3; 3.3
Zn-65	-4.8 ± 4.0; 4.1	-3.8 ± 5.0; 5.0	-2.8 ± 1.5; 1.6	0.7 ± 4.2; 4.2
Zr/Nb-95	-0.8 ± 1.9; 1.9	-2.7 ± 2.2; 2.2	-0.1 ± 0.7; 0.7	0.2 ± 3.0; 3.0
Cs-134	-0.7 ± 2.2; 2.2	-0.3 ± 2.7; 2.7	0.5 ± 0.8; 0.8	-1.9 ± 3.1; 3.1
Cs-137	-0.3 ± 2.2; 2.2	1.8 ± 1.8; 1.8	-0.5 ± 0.8; 0.8	-3.1 ± 3.6; 3.6
Ba/La-140	-4.2 ± 2.4; 2.5	-5.3 ± 2.3; 2.4	4.1 ± 0.8; 1.0	5.6 ± 2.9; 3.0
<u>Q-36 Cordova Well</u>				
Date Collected	01-12-01	04-12-01	07-13-01	10-13-01
Lab Code	QWW-239	QWW-2887	QWW-6007	QWW-9213
H-3	-11 ± 80; 80	39 ± 82; 82	5 ± 73; 73	-48 ± 81; 82
Mn-54	-0.4 ± 1.6; 1.6	-0.7 ± 2.2; 2.2	-0.1 ± 1.3; 1.3	1.8 ± 0.9; 0.9
Fe-59	-1.2 ± 2.8; 2.8	-5.7 ± 5.1; 5.2	2.1 ± 2.9; 3.0	0.1 ± 1.8; 1.8
Co-58	0.7 ± 1.6; 1.6	0.2 ± 2.4; 2.4	0.9 ± 1.4; 1.4	-0.5 ± 1.0; 1.0
Co-60	-0.6 ± 1.8; 1.8	-2.0 ± 2.0; 2.1	-0.2 ± 1.6; 1.6	-0.2 ± 1.1; 1.1
Zn-65	-0.0 ± 3.2; 3.2	0.8 ± 4.8; 4.8	-3.6 ± 3.6; 3.6	-2.7 ± 1.9; 1.9
Zr/Nb-95	-2.2 ± 1.5; 1.5	1.3 ± 2.6; 2.6	-2.1 ± 1.7; 1.7	0.2 ± 1.1; 1.1
Cs-134	-0.6 ± 1.7; 1.7	0.9 ± 2.5; 2.5	-0.2 ± 1.8; 1.8	0.3 ± 1.1; 1.1
Cs-137	0.5 ± 1.7; 1.7	1.4 ± 2.3; 2.3	-0.1 ± 1.6; 1.6	0.4 ± 1.1; 1.1
Ba/La-140	-4.0 ± 1.8; 1.9	1.6 ± 2.5; 2.5	-10.3 ± 1.7; 2.3	-3.2 ± 1.2; 1.3

QUAD CITIES

MILCH ANIMALS, NEAREST LIVESTOCK, AND
NEAREST RESIDENCES CENSUS

QUAD CITIES

MILCH ANIMALS CENSUS, 2001

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 2, 2001

QUAD CITIES

NEAREST LIVESTOCK CENSUS, 2001

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	None
C	NE	None
D	ENE	3.0 miles
E	E	2.0 miles
F	ESE	3.2 miles
G	SE	5.0 miles
H	SSE	5.5 miles
J	S	4.0 miles
K	SSW	None
L	SW	3.5 miles
M	WSW	4.8 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 2, 2001

QUAD CITIES

NEAREST RESIDENCE CENSUS, 2001

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 2, 2001

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 2001	Quarter 2 2001	Quarter 3 2001	Quarter 4 2001
I. INDICATOR LOCATIONS					
a. Air Samplers					
Q-01-1	ONSITE NO. 1	18.0	21.0	16.0	24.0
Q-01-2	ONSITE NO. 1	18.0	20.0	18.0	21.0
Q-02-1	ONSITE NO. 2	18.0	21.0	20.0	22.0
Q-02-2	ONSITE NO. 2	18.0	21.0	17.0	24.0
Q-03-1	ONSITE NO. 3	18.0	21.0	16.0	19.0
Q-03-2	ONSITE NO. 3	18.0	23.0	19.0	21.0
Q-04-1	NITRIN	18.0	24.0	16.0	21.0
Q-04-2	NITRIN	18.0	20.0	19.0	19.0
Q-13-1	PRINCETON	22.0	21.0	19.0	22.0
Q-13-2	PRINCETON	18.0	25.0	17.0	22.0
Q-16-1	LOW MOOR	18.0	25.0	16.0	21.0
Q-16-2	LOW MOOR	17.0	24.0	19.0	19.0
Q-37-1	MEREDOSIA ROAD	18.0	24.0	17.0	22.0
Q-37-2	MEREDOSIA ROAD	18.0	24.0	19.0	24.0
Q-38-1	FULLER ROAD	17.0	25.0	19.0	22.0
Q-38-2	FULLER ROAD	18.0	24.0	19.0	19.0
	Air Sampler Mean ± S. D.	18.1 ±1.1	22.7 ±1.9	17.9 ±1.4	21.4 ±1.7
	Annual Air Sampler Mean ± S.D.				20.0 ±2.6
b. Inner Ring (100 Series)					
Q-101-1		17.0	24.0	18.0	21.0
Q-101-2		16.0	24.0	19.0	23.0
Q-102-1		18.0	26.0	21.0	23.0
Q-102-3		18.0	25.0	20.0	22.0
Q-103-1		17.0	22.0	17.0	20.0
Q-103-2		17.0	23.0	18.0	22.0
Q-104-1		18.0	23.0	19.0	23.0
Q-104-2		18.0	23.0	16.0	21.0
Q-105-1		17.0	22.0	18.0	23.0
Q-105-2		17.0	22.0	18.0	20.0
Q-106-2		18.0	23.0	19.0	23.0
Q-106-3		17.0	20.0	19.0	20.0
Q-107-2		17.0	22.0	18.0	22.0
Q-107-3		17.0	20.0	19.0	22.0
Q-108-1		18.0	18.0	17.0	20.0
Q-108-2		17.0	19.0	17.0	19.0
Q-109-1		18.0	20.0	19.0	22.0
Q-109-2		16.0	23.0	19.0	21.0
Q-111-1		17.0	22.0	18.0	20.0
Q-111-2		18.0	23.0	18.0	22.0

Exelon Nuclear
Environmental Site Report for Quad Cities

Site	Description	Gamma Radiation Measured in mR by TLDs			
		Quarter 1 2001	Quarter 2 2001	Quarter 3 2001	Quarter 4 2001
b. Inner Ring (100 Series)					
Q-112-1		18.0	22.0	19.0	22.0
Q-112-2		18.0	24.0	19.0	24.0
Q-113-1		18.0	22.0	18.0	23.0
Q-113-2		18.0	21.0	19.0	20.0
Q-114-1		16.0	20.0	18.0	20.0
Q-114-2		18.0	24.0	17.0	24.0
Q-115-1		18.0	23.0	18.0	22.0
Q-115-2		18.0	26.0	17.0	22.0
Q-116-1		18.0	25.0	20.0	22.0
Q-116-3		21.0	23.0	19.0	19.0
	Inner Ring Mean ± S.D.	17.6 ±0.9	22.5 ±1.9	18.4 ±1.1	21.6 ±1.4
	Annual Inner Ring Mean ± S.D.				20.0 ±2.5
c. Outer Ring (200 Series)					
Q-201-1		22.0	27.0	21.0	24.0
Q-201-2		22.0	26.0	18.0	22.0
Q-202-1		20.0	22.0	18.0	19.0
Q-202-2		20.0	23.0	19.0	21.0
Q-203-1		21.0	25.0	17.0	20.0
Q-203-2		24.0	26.0	19.0	23.0
Q-204-1		24.0	23.0	18.0	20.0
Q-204-2		24.0	23.0	18.0	23.0
Q-205-1		23.0	22.0	19.0	26.0
Q-205-4		23.0	25.0	18.0	24.0
Q-206-1		21.0	21.0	17.0	19.0
Q-206-2		19.0	20.0	17.0	19.0
Q-207-1		17.0	24.0	18.0	25.0
Q-207-4		17.0	20.0	17.0	18.0
Q-208-1		18.0	21.0	17.0	18.0
Q-208-2		22.0	21.0	18.0	27.0
Q-209-1		20.0	21.0	18.0	20.0
Q-209-4		18.0	21.0	18.0	22.0
Q-210-1		17.0	21.0	17.0	24.0
Q-210-4		18.0	20.0	17.0	23.0
Q-211-1		21.0	23.0	20.0	25.0
Q-211-2		21.0	23.0	21.0	25.0
Q-212-1		17.0	21.0	19.0	20.0
Q-212-2		20.0	20.0	15.0	23.0
Q-213-1		16.0	20.0	21.0	23.0
Q-213-2		20.0	19.0	15.0	21.0
Q-214-1		22.0	21.0	18.0	24.0
Q-214-2		21.0	23.0	18.0	23.0

Exelon Nuclear
Environmental Site Report for Quad Cities

Gamma Radiation Measured in mR by TLDs					
Site	Description	Quarter 1 2001	Quarter 2 2001	Quarter 3 2001	Quarter 4 2001
Outer Ring (200 Series)					
Q-215-1		21.0	22.0	18.0	20.0
Q-215-2		24.0	24.0	20.0	27.0
Q-216-1		22.0	21.0	18.0	24.0
Q-216-2		23.0	23.0	19.0	26.0
	Outer Ring Mean ± S.D.	20.6 ±2.4	22.3 ±2.0	18.2 ±1.4	22.4 ±2.6
	Annual Outer Ring Mean ± S.D.				20.9 ±2.7
	INDICATOR LOCATION MEAN ± S.D.	18.9 ±2.2	22.4 ±1.9	18.2 ±1.3	21.9 ±2.6
	Annual INDICATOR MEAN ± S.D.				20.3 ±2.6

II. CONTROL LOCATIONS

Q-07-1	CLINTON	19.0	20.0	16.0	19.0
Q-07-2	CLINTON	19.0	21.0	17.0	22.0
	CONTROL LOCATION MEAN ± S.D.	19.0 ±0.0	20.5 ±0.7	16.5 ±0.7	20.5 ±2.1
	Annual CONTROL LOCATION MEAN ± S.D.				19.1 ±2.0

QUAD CITIES

5.0 GRAPHS OF DATA TRENDS

Air Particulates - Gross Beta

Q-01 Onsite No. 1

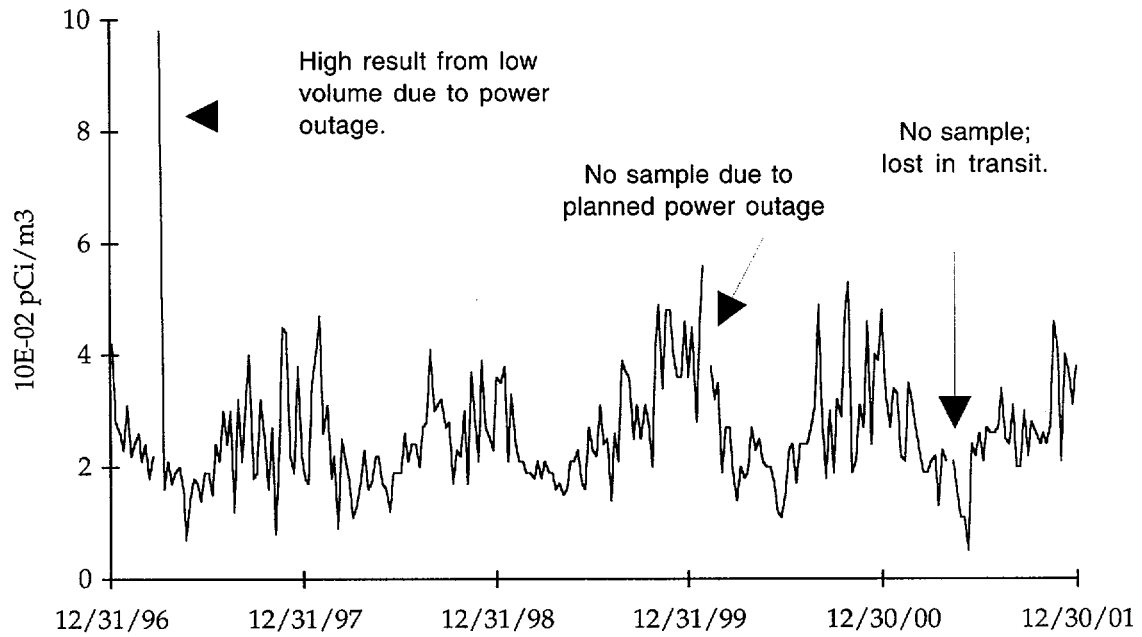


Figure 1. Continuous collection with weekly exchange of particulate filter.

Q-02 Onsite No. 2

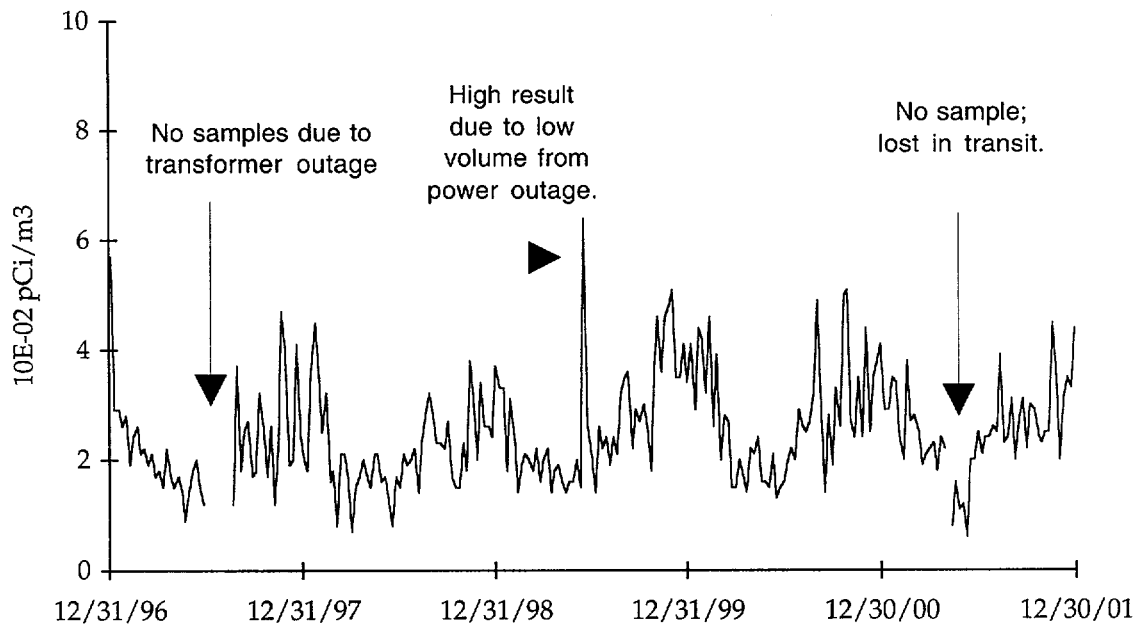


Figure 2. Continuous collection with weekly exchange of particulate filter.

Air Particulates - Gross Beta

Q-03 Onsite No. 3

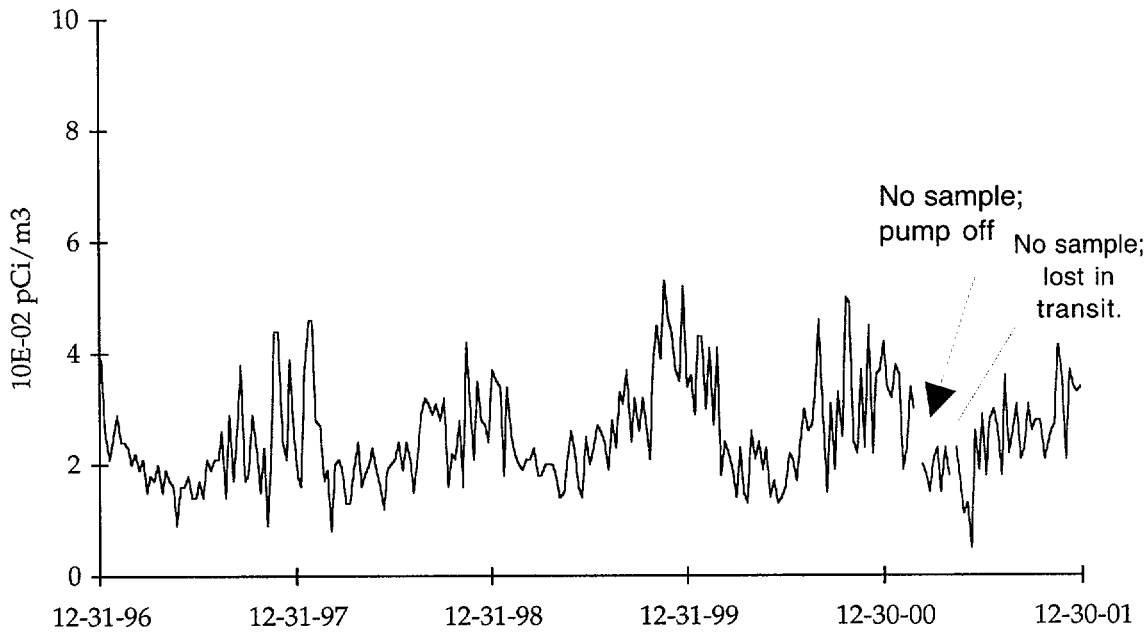


Figure 3. Continuous collection with weekly exchange of particulate filter.

Q-04 Nitrin

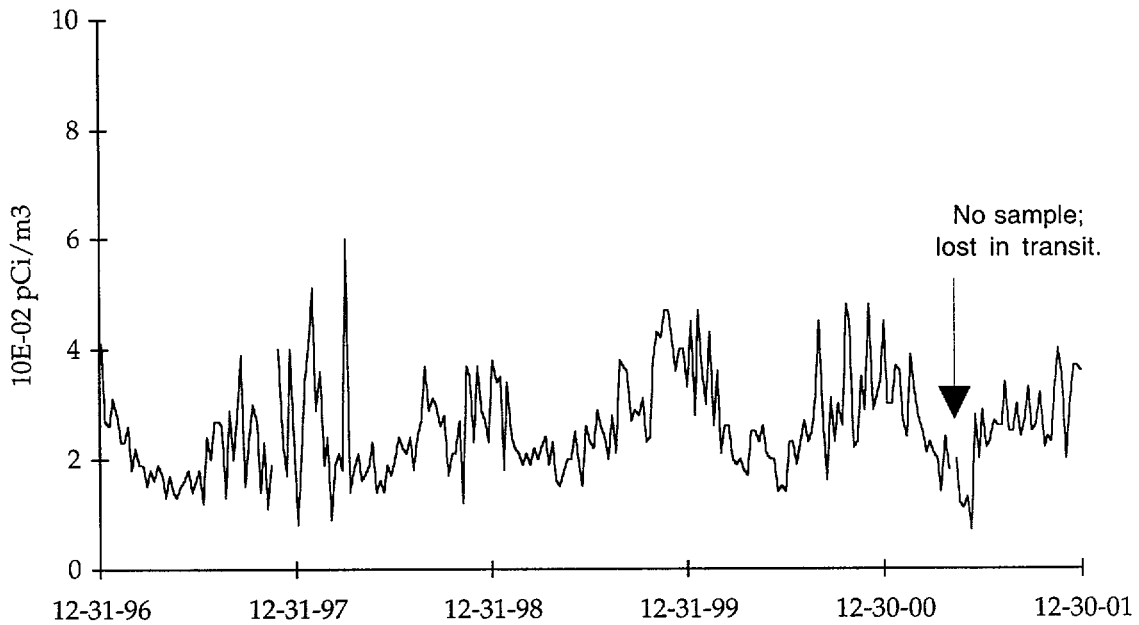


Figure 4. Continuous collection with weekly exchange of particulate filter.

Air Particulates - Gross Beta

Q-07 (C) Clinton

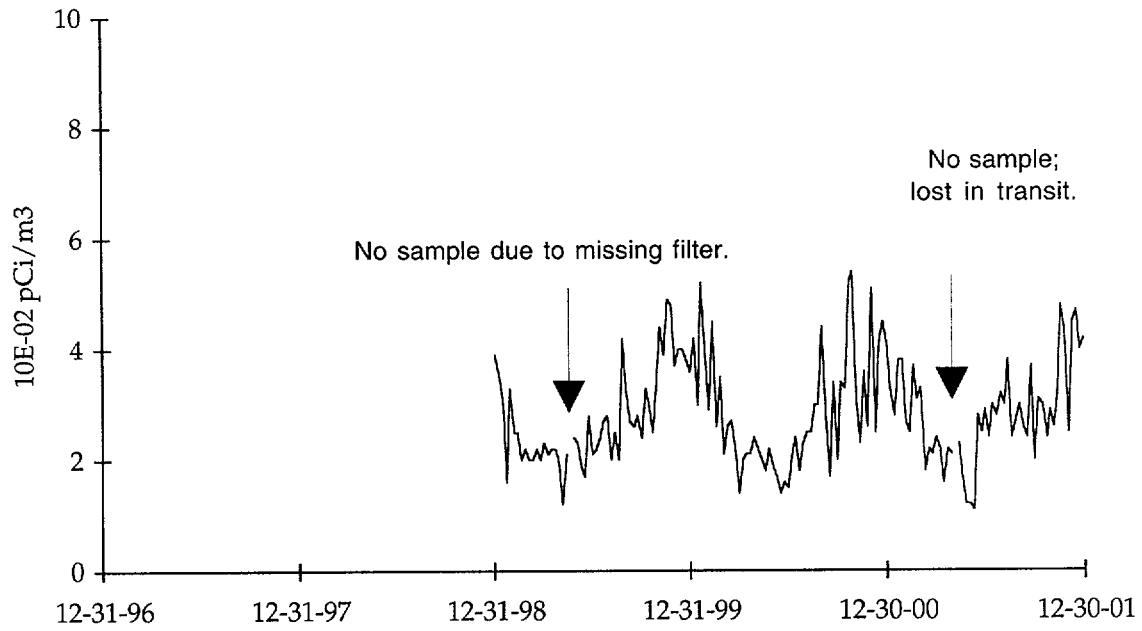


Figure 5. Continuous collection with weekly exchange of particulate filter.

Surface Water-Gross Beta

Q-33 Cordova

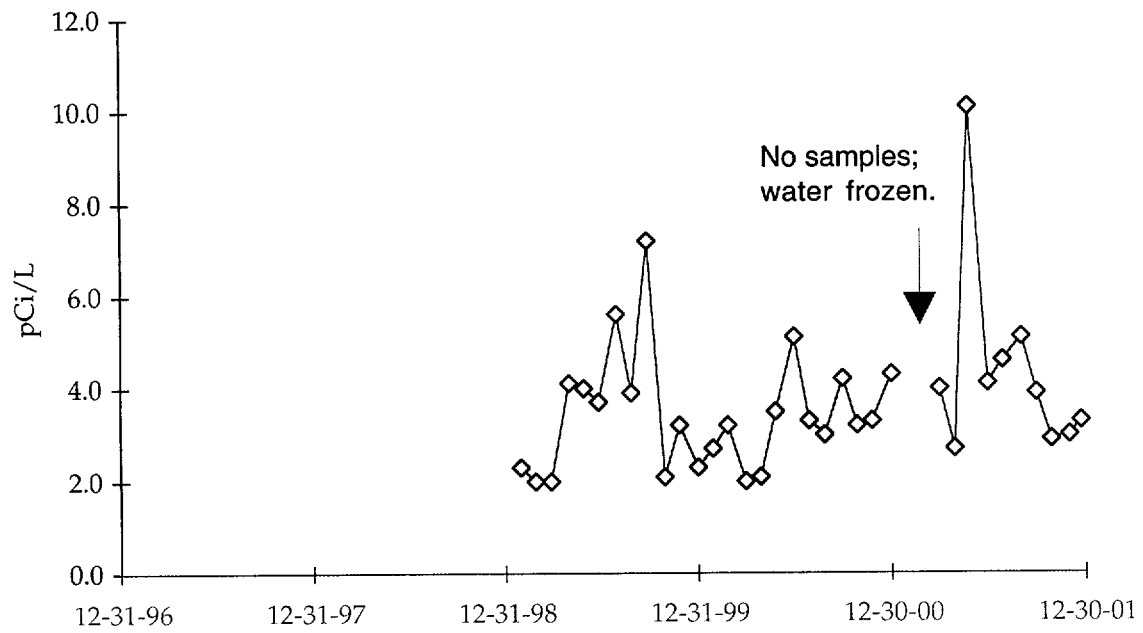


Figure 7. Monthly composites of weekly collections

Q-34 (C) Camanche

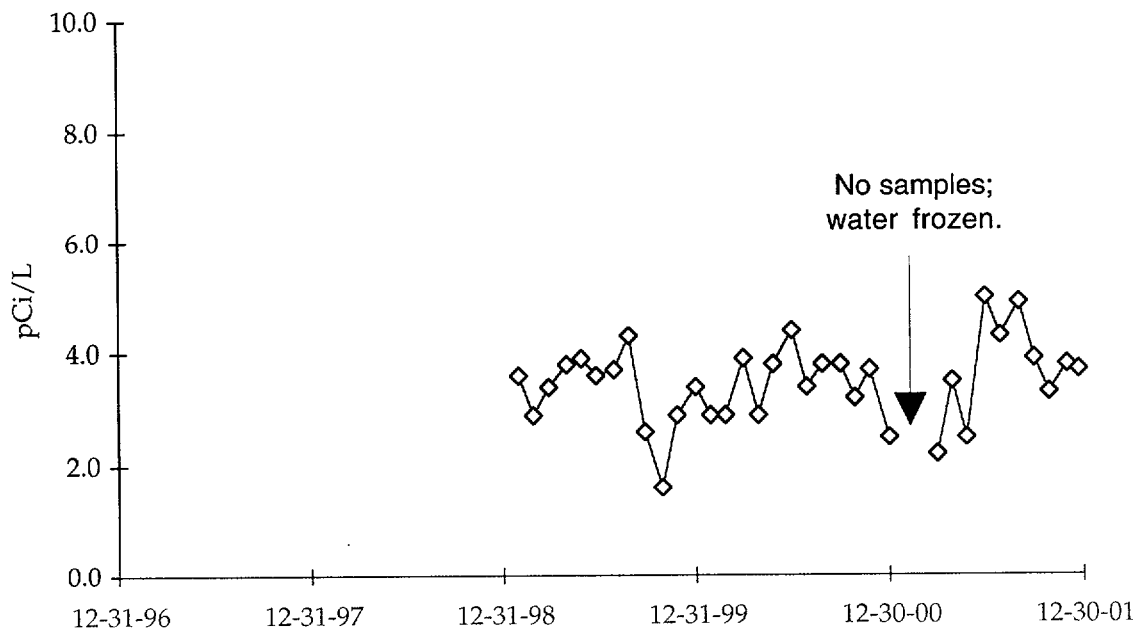


Figure 8. Monthly composites of weekly collections.

Surface Water-Tritium

Q-33 Cordova

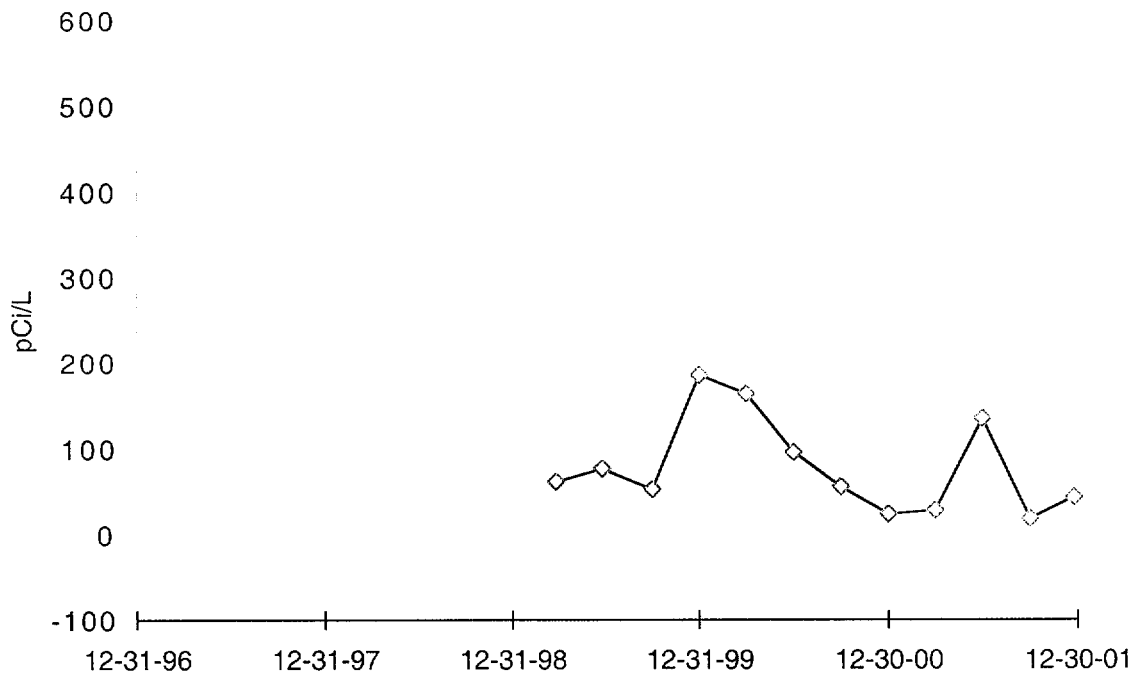


Figure 8. Quarterly composites of weekly collections.

Q-34 (C) Camanche

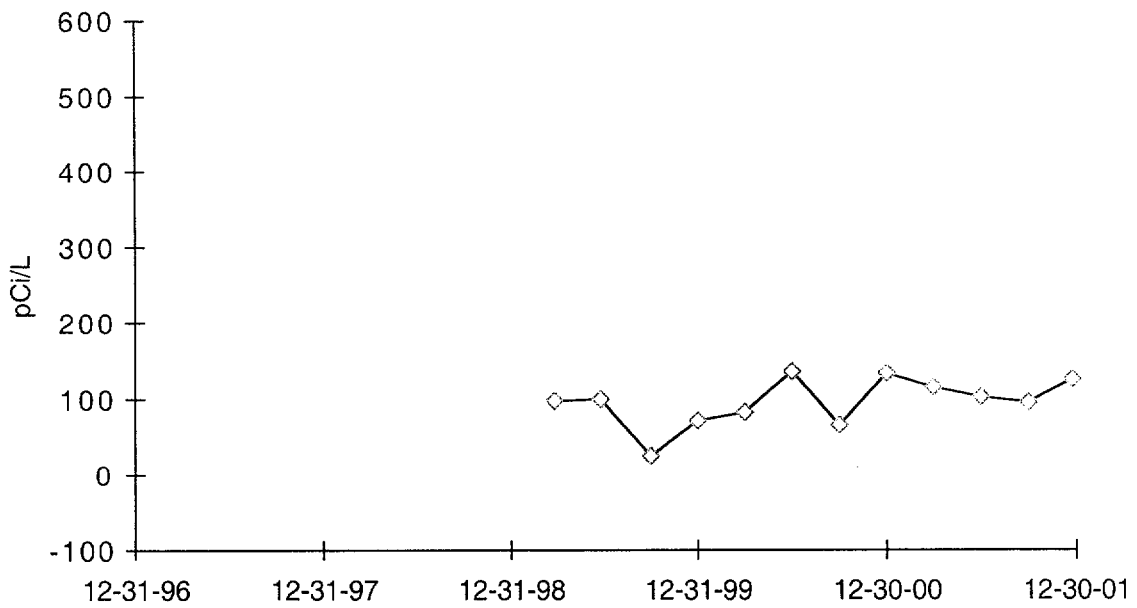


Figure 9. Quarterly composites of weekly collections.

Well Water-Tritium

Q-35 McMillan Well

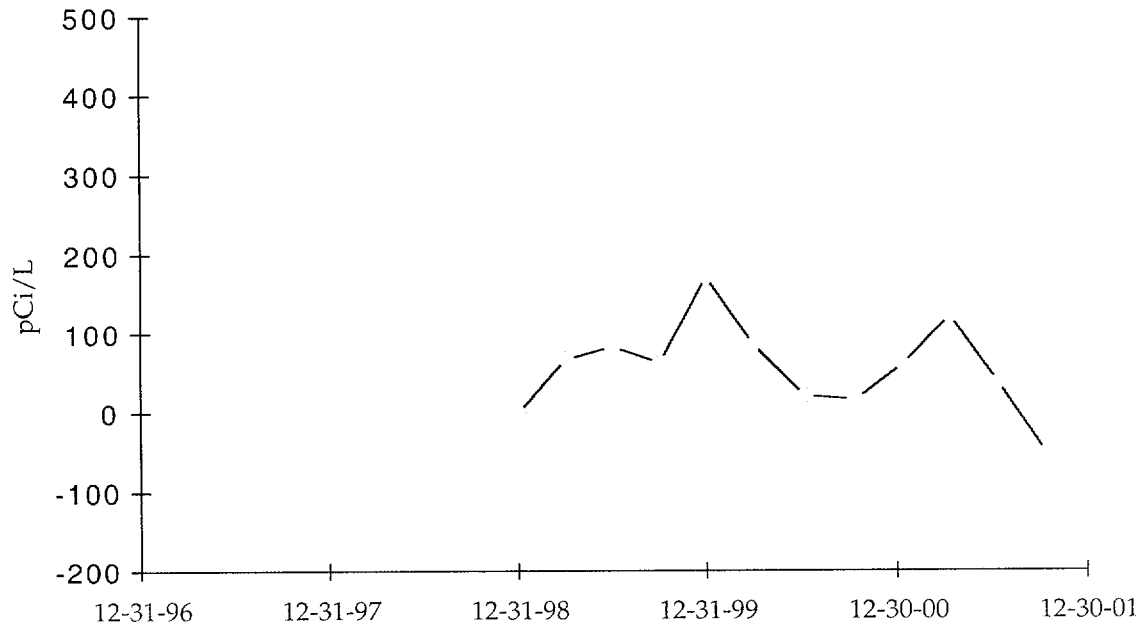


Figure 10. Quarterly collections.

Q-36 Cordova Well

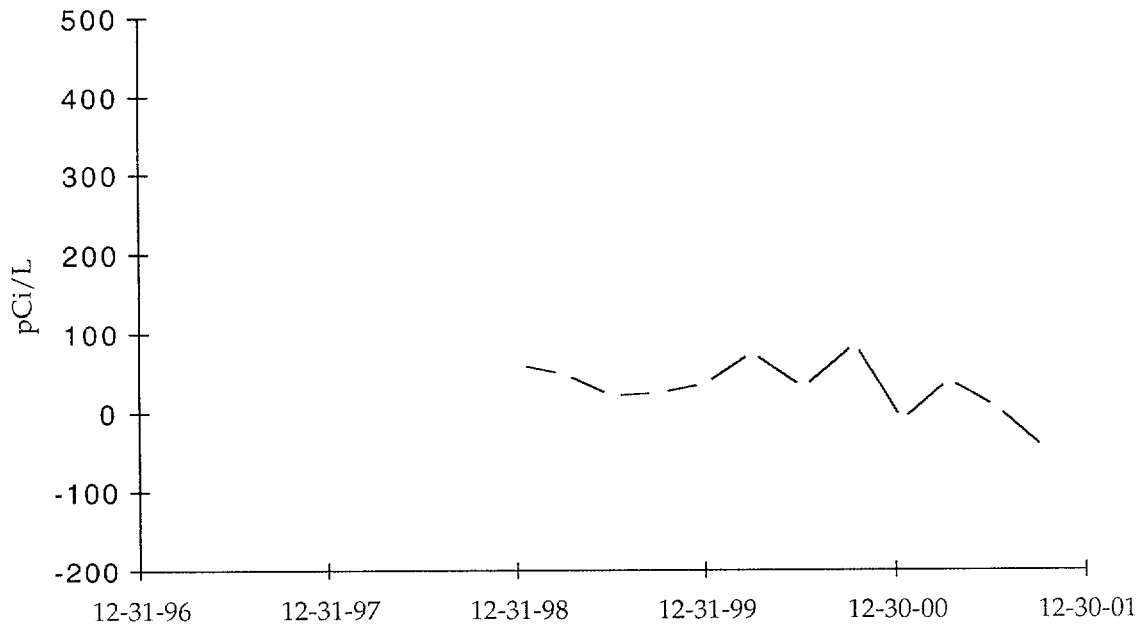


Figure 11. Quarterly collections.

APPENDIX IV

INTERLABORATORY COMPARISON PROGRAM RESULTS

NOTE: Environmental Incorporated Midwest Laboratory participates in intercomparison studies administered by Environmental Resource Associates which serve as a replacement for studies previously conducted by the U.S. EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada. The results are reported annually in Appendix IV. Also reported are results of mixed analyte and Environmental Measurements Laboratory performance evaluation programs.

January, 2001 through December, 2001

Appendix IV

Interlaboratory Comparison Program Results

Environmental Incorporated 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 (e.g., milk or water) 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 the laboratory's analytical procedures and to alert it to 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.

The results in Table IV-1 were obtained through participation in the environmental sample crosscheck program for milk, water, air filters, and food samples through December 31, 2001. This program was conducted by Environmental Resource Associates and serves to replace studies formerly conducted by the U.S. Environmental Protection Agency Office of Research and Development, National Exposure Research Laboratory Characterization Research Division-Las Vegas, Nevada.

Table IV-2 lists results of the mixed analyte performance evaluation program.

Table IV-3 lists results of the Environmental Measurement Laboratory Quality Assessment Program.

Table IV-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA), comparison of ERA and Environmental, Inc. Midwest Laboratory results.^a

Lab Code	Sample Type	Date Collected	Analysis	Concentration in pCi/L ^b		
				ERA Result ^c	Control Limits	Laboratory results ^d
STW-897	Water	Jan, 2001	Gr. Alpha	45.7±11.4	25.9 - 65.5	31.9±2.1;4.4
STW-897	Water	Jan, 2001	Gr. Beta	16.7±5.0	8.0 - 25.4	25.3±2.7;4.7
STW-900	Water	Feb, 2001	I-131	28.3±3.0	23.1 - 33.5	27.2±0.8;2.8
STW-902	Water	Feb, 2001	Ra-226	4.7±0.7	3.4 - 5.9	4.0±0.1;0.4
STW-902	Water	Feb, 2001	Ra-228	14.4±3.6	8.2 - 20.6	13.8±0.4;1.4
STW-902	Water	Feb, 2001	Uranium	20.4±3.0	15.2 - 25.6	17.0±0.3;1.7
STW-903	Water	Mar, 2001	H-3	17800.0±1780.0	14700.0 - 20900.0	17400.0±69.7;2367.4
STW-917	Water	Apr, 2001	Gr. Alpha	56.0±14.0	31.8 - 80.2	57.4±3.5;7.8
STW-917	Water	Apr, 2001	Ra-226	17.7±2.7	13.1 - 22.3	13.5±0.4;1.4
STW-917	Water	Apr, 2001	Ra-228	8.1±2.0	4.6 - 11.6	10.1±0.6;1.2
STW-917	Water	Apr, 2001	Uranium	15.6±3.0	10.4 - 20.8	14.2±0.2;1.4
STW-918	Water	Apr, 2001	Co-60	26.4±5.0	17.7 - 35.1	27.9±1.4;4.2
STW-918	Water	Apr, 2001	Cs-134	16.9±5.0	8.2 - 25.6	16.0±0.4;2.3
STW-918	Water	Apr, 2001	Cs-137	186.0±9.3	170.0 - 202.0	195.4±1.5;28.2
STW-918	Water	Apr, 2001	Gr. Beta	340.0±51.0	252.0 - 428.0	343.0±1.7;52.9
STW-918	Water	Apr, 2001	Sr-89	64.1±5.0	55.5 - 72.8	62.8±5.7;8.5
STW-918	Water	Apr, 2001	Sr-90	33.8±5.0	25.1 - 42.5	34.2±1.6;3.8
STW-919	Water	Jun, 2001	Ba-133	36.0±5.0	27.3 - 44.7	37.8±1.2;5.6
STW-919	Water	Jun, 2001	Co-60	46.8±5.0	38.1 - 55.5	49.9±0.7;7.2
STW-919	Water	Jun, 2001	Cs-134	15.9±5.0	7.2 - 24.6	16.0±1.4;2.7
STW-919	Water	Jun, 2001	Cs-137	197.0±9.9	180.0 - 214.0	208.0±1.7;30.0
STW-919	Water	Jun, 2001	Zn-65	36.2±5.0	27.5 - 44.9	37.8±0.7;5.5
STW-920	Water	Jun, 2001	Ra-226	15.4±2.3	11.4 - 19.4	14.6±0.4;1.5
STW-920	Water	Jun, 2001	Ra-228	4.5±1.1	2.6 - 6.5	6.2±0.2;0.7
STW-920	Water	Jun, 2001	Uranium	55.7±5.6	46.1 - 65.3	49.0±1.0;5.0

Table IV-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA), comparison of ERA and Environmental, Inc. Midwest Laboratory results.^a

Lab Code	Sample Type	Date Collected	Analysis	Concentration in pCi/L ^b		
				ERA Result ^c	Control Limits	Laboratory results ^d
STW-921	Water	Jul, 2001	Sr-89	31.2±5.0	22.5 - 39.9	19.8±1.5;2.5
Delay in processing may have attributed to deviation. Result of reanalysis; Sr-89, 35.3 ± 4.4 pCi/L. Sr-90, 25.0 ± 2.8 pCi/L.						
STW-921	Water	Jul, 2001	Sr-90	25.9±5.0	17.2 - 34.6	26.3±1.1;2.9
STW-922	Water	Jul, 2001	Gr. Alpha	17.8±5.0	9.1 - 26.5	23.3±1.9;3.4
STW-922	Water	Jul, 2001	Gr. Beta	53.0±10.0	35.7 - 70.3	48.5±4.6;8.8
STW-924	Water	Aug, 2001	H-3	2730.0±356.0	2110.0 - 3350.0	2680.0±41.9;366.9
STW-931	Water	Sep, 2001	Ra-226	10.8±1.6	8.0 - 13.6	10.9±0.2;1.1
STW-931	Water	Sep, 2001	Ra-228	9.0±2.2	5.1 - 12.8	9.7±1.1;1.5
STW-931	Water	Sep, 2001	Uranium	13.1±3.0	7.9 - 18.3	11.2±0.1;1.1
STW-932	Water	Oct, 2001	I-131	7.7±2.0	4.2 - 11.2	7.7±0.3;0.8
STW-933	Water	Oct, 2001	Gr. Alpha	97.5±24.4	55.3 - 140.0	82.2±4.0;10.8
STW-933	Water	Oct, 2001	Ra-226	10.8±1.6	8.0 - 13.6	9.5±1.2;1.5
STW-933	Water	Oct, 2001	Ra-228	15.6±3.9	8.9 - 22.4	17.0±0.8;1.9
STW-933	Water	Oct, 2001	Uranium	37.2±3.7	30.7 - 43.6	32.2±1.4;3.5
STW-934	Water	Oct, 2001	Co-60	78.4±5.0	69.7 - 87.1	82.4±0.9;11.9
STW-934	Water	Oct, 2001	Cs-134	54.1±5.0	45.4 - 62.8	52.2±1.3;7.6
STW-934	Water	Oct, 2001	Cs-137	37.9±5.0	26.3 - 43.7	39.4±0.6;5.7
STW-934	Water	Oct, 2001	Gr. Beta	192.0±28.8	142.0 - 242.0	166.0±7.1;26.5
STW-934	Water	Oct, 2001	Sr-89	16.7±5.0	8.0 - 25.4	12.8±0.8;1.5
STW-934	Water	Oct, 2001	Sr-90	7.7±5.0	-1.0 - 16.4	6.8±0.7;0.9
STW-935	Water	Oct, 2001	Gr. Alpha	64.0±16.0	36.5 - 91.5	63.5±2.5;8.1
STW-935	Water	Oct, 2001	Gr. Beta	21.5±5.0	12.8 - 30.2	26.0±1.2;4.2
STW-938	Water	Nov, 2001	Ba-133	69.3±6.9	57.5 - 81.1	66.7±1.2;9.7
STW-938	Water	Nov, 2001	Co-60	59.7±5.0	51.0 - 68.4	59.3±0.6;8.6
STW-938	Water	Nov, 2001	Cs-134	93.9±5.0	85.2 - 103.0	86.7±1.5;12.6
STW-938	Water	Nov, 2001	Cs-137	42.0±5.0	33.3 - 50.7	45.0±1.0;6.6

Table IV-1. Interlaboratory Comparison Crosscheck program, Environmental Resource Associates (ERA), comparison of ERA and Environmental, Inc. Midwest Laboratory results.^a

Lab Code	Sample Type	Date Collected	Analysis	Concentration in pCi/L ^b		
				ERA Result ^c	Control Limits	Laboratory results ^d
STW-938	Water	Nov, 2001	Zn-65	77.3±7.7	63.9 - 90.7	80.7±0.6;11.6

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

^b All results are in pCi/L, except for elemental potassium (K) data in milk, which are in mg/L; air filter samples, which are in pCi/Filter.

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

^d Unless otherwise indicated, the result is given as the mean ± standard deviation for three determinations. The number after the semi-colon reflect Total Propagated Uncertainty for the result.

Table IV-2. Department of Energy's Mixed Analyte Performance Evaluation Program (MAPEP) ^a.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in Bq/kg ^b		
				MAPEP Result ^d 1s, N=1	Control Limits	Laboratory results ± Standard Deviation ^c
STSO-923	SOIL	Jan, 2001	Am-241		0.0 - 2.6	
Included in the testing series as a "false positive". No activity expected. Result of analysis; < 0.8 Bq/L.						
STSO-923	SOIL	Jan, 2001	Co-57	103.0 ± 10.3	72.1 - 133.9	100.2 ± 3.5; 10.6
STSO-923	SOIL	Jan, 2001	Co-60	1,270.0 ± 127.0	889.0 - 1,651.0	1,285.1 ± 5.3; 128.6
STSO-923	SOIL	Jan, 2001	Cs-134	91.1 ± 9.1	63.8 - 118.4	81.1 ± 1.8; 8.3
STSO-923	SOIL	Jan, 2001	Cs-137	1,240.0 ± 124.0	868.0 - 1,612.0	1,210.6 ± 6.6; 121.2
STSO-923	SOIL	Jan, 2001	K-40	652.0 ± 65.2	456.4 - 847.6	732.6 ± 21.2; 76.3
STSO-923	SOIL	Jan, 2001	Mn-54	203.0 ± 20.3	142.1 - 263.9	212.6 ± 6.7; 22.3
STSO-923	SOIL	Jan, 2001	Pu-238	115.0 ± 11.5	80.5 - 149.5	110.7 ± 7.2; 13.2
STSO-923	SOIL	Jan, 2001	Pu-239/40	83.4 ± 8.3	58.4 - 108.4	79.6 ± 5.9; 9.9
STSO-923	SOIL	Jan, 2001	Sr-90	209.0 ± 20.9	146.3 - 271.7	159.8 ± 9.5; 18.6
STSO-923	SOIL	Jan, 2001	U-233/4	60.0 ± 6.0	42.0 - 78.0	45.0 ± 3.9; 6.0
STSO-923	SOIL	Jan, 2001	U-238	191.0 ± 19.1	133.7 - 248.3	165.6 ± 7.4; 18.1
STSO-923	SOIL	Jan, 2001	Zn-65	382.0 ± 38.2	267.4 - 496.6	428.5 ± 10.9; 44.2

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

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

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

Table IV-3. Environmental Measurements Laboratory Quality Assessment Program (EML)^a.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in Bq/L ^b		Control Limits ^c
				Laboratory Result ^c	EML Result ^d	
STSO-904	Soil	Mar, 2001	Ac-228	45.6±4.0; 6.1	42.7±1.7	0.8 - 1.5
STSO-904	Soil	Mar, 2001	Am-241	14.4±0.5; 1.5	14.8±0.5	0.6 - 2.6
STSO-904	Soil	Mar, 2001	Bi-212	53.2±3.1; 6.2	42.0±4.1	0.5 - 1.2
Naturally-occurring radium and thorium daughters are present in the shield background, and a probable cause of the higher bias seen for isotopes of lead and bismuth.						
STSO-904	Soil	Mar, 2001	Bi-214	42.1±7.7; 8.8	32.6±1.4	0.8 - 1.5
STSO-904	Soil	Mar, 2001	Cs-137	1,772.6±79.8; 194.4	1,740.0±90.0	0.8 - 1.3
STSO-904	Soil	Mar, 2001	K-40	583.8±52.6; 78.6	468.0±25.0	0.8 - 1.4
STSO-904	Soil	Mar, 2001	Pb-212	46.6±8.5; 9.7	41.5±2.2	0.7 - 1.4
STSO-904	Soil	Mar, 2001	Pb-214	45.3±8.6; 9.7	34.3±1.6	0.8 - 1.5
STSO-904	Soil	Mar, 2001	Pu-239/40	26.0±0.8; 2.7	25.6±0.7	0.7 - 1.3
STSO-904	Soil	Mar, 2001	Sr-90	55.6±2.2; 6.0	69.0±5.7	0.6 - 3.9
STW-905	Water	Mar, 2001	Am-241	2.2±0.1; 0.3	1.7±0.1	0.8 - 1.5
STW-905	Water	Mar, 2001	Co-60	97.0±0.8; 14.0	98.2±3.6	0.8 - 1.2
STW-905	Water	Mar, 2001	Cs-137	70.1±4.0; 10.9	73.0±3.7	0.8 - 1.2
STW-905	Water	Mar, 2001	H-3	76.5±5.5; 11.8	79.3±2.0	0.7 - 2.3
STW-905	Water	Mar, 2001	Pu-238	1.7±0.1; 0.2	1.6±0.1	0.7 - 1.2
STW-905	Water	Mar, 2001	Pu-239/40	1.7±0.1; 0.2	1.6±0.1	0.8 - 1.3
STW-905	Water	Mar, 2001	Sr-90	3.9±0.1; 0.4	4.4±0.2	0.6 - 1.5
STW-905	Water	Mar, 2001	U-233/4	0.9±0.1; 0.1	1.0±0.1	0.8 - 1.4
STW-905	Water	Mar, 2001	U-238	0.9±0.1; 0.1	1.0±0.0	0.8 - 1.3
STW-906	Water	Mar, 2001	Gr. Alpha	1,724.6±141.7; 253.7	1,900.0±190.0	0.6 - 1.3
STW-906	Water	Mar, 2001	Gr. Beta	1,246.4±31.1; 194.4	1,297.0±100.0	0.6 - 1.5
STAP-907	Air Filter	Mar, 2001	Am-241	0.5±0.0; 0.1	0.5±0.0	0.7 - 2.4
STAP-907	Air Filter	Mar, 2001	Co-60	20.1±0.2; 2.0	19.4±0.5	0.8 - 1.3
STAP-907	Air Filter	Mar, 2001	Cs-134	2.7±0.2; 0.3	2.8±0.2	0.7 - 1.2
STAP-907	Air Filter	Mar, 2001	Cs-137	9.9±0.2; 1.0	8.8±0.3	0.8 - 1.4
STAP-907	Air Filter	Mar, 2001	Mn-54	7.3±0.2; 0.8	6.5±0.3	0.8 - 1.4
STAP-907	Air Filter	Mar, 2001	Pu-238	0.2±0.0; 0.0	0.2±0.0	0.7 - 1.4
STAP-907	Air Filter	Mar, 2001	Pu-239/40	0.1±0.0; 0.0	0.1±0.0	0.7 - 1.3
STAP-907	Air Filter	Mar, 2001	Sr-90	7.4±0.2; 0.8	7.1±0.2	0.6 - 2.1
STAP-907	Air Filter	Mar, 2001	U-233/4	0.1±0.0; 0.0	0.0±0.0	0.8 - 1.9
STAP-907	Air Filter	Mar, 2001	U-238	0.1±0.0; 0.0	0.0±0.0	0.8 - 1.6
STAP-908	Air Filter	Mar, 2001	Gr. Alpha	2.7±0.0; 0.3	4.0±0.3	0.6 - 1.5
STAP-908	Air Filter	Mar, 2001	Gr. Beta	2.3±0.0; 0.2	2.6±0.2	0.8 - 1.5

Table IV-3. Environmental Measurements Laboratory Quality Assessment Program (EML)^a.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in Bq/L ^b		Control Limits ^c
				Laboratory Result ^e	EML Result ^d	
STVE-909	Vegetation	Mar, 2001	Am-241	6.1 ± 0.2; 0.6	6.2 ± 0.3	0.7 - 2.3
STVE-909	Vegetation	Mar, 2001	Cm-244	3.5 ± 0.5; 0.6	3.7 ± 0.3	0.6 - 1.6
STVE-909	Vegetation	Mar, 2001	Co-60	28.5 ± 2.1; 4.4	30.4 ± 1.2	0.8 - 1.5
STVE-909	Vegetation	Mar, 2001	Cs-137	795.5 ± 76.4; 132.4	842.0 ± 42.0	0.8 - 1.4
STVE-909	Vegetation	Mar, 2001	K-40	592.6 ± 42.5; 72.9	603.0 ± 32.0	0.8 - 1.4
STVE-909	Vegetation	Mar, 2001	Pu-239/40	8.5 ± 0.6; 1.0	9.6 ± 1.3	0.7 - 1.5
STVE-909	Vegetation	Mar, 2001	Sr-90	1,239.6 ± 130.0; 179.6	1,330.0 ± 70.0	0.5 - 1.2
STW-925	Water	Sep, 2001	Am-241	0.7 ± 0.1; 0.1	0.8 ± 0.0	0.8 - 1.5
STW-925	Water	Sep, 2001	Co-60	206.7 ± 4.7; 30.1	209.0 ± 7.6	0.8 - 1.2
STW-925	Water	Sep, 2001	Cs-137	46.6 ± 0.8; 6.8	45.1 ± 2.5	0.8 - 1.2
STW-925	Water	Sep, 2001	H-3	254.1 ± 3.6; 34.7	207.0 ± 2.7	0.7 - 2.3
STW-925	Water	Sep, 2001	Ni-63	50.9 ± 3.0; 5.9	45.3 ± 4.5	0.7 - 1.3
STW-925	Water	Sep, 2001	Pu-238	1.1 ± 0.1; 0.1	1.1 ± 0.1	0.7 - 1.2
STW-925	Water	Sep, 2001	Pu-239/40	1.6 ± 0.1; 0.2	1.6 ± 0.1	0.8 - 1.3
STW-925	Water	Sep, 2001	Sr-90	4.1 ± 0.3; 0.5	3.7 ± 0.4	0.6 - 1.5
STW-925	Water	Sep, 2001	Uranium	2.2 ± 0.2; 0.3	2.4 ± 0.1	0.7 - 1.4
STW-926	Water	Sep, 2001	Gr. Alpha	1,220.0 ± 32.0; 152.2	1,150.0 ± 115.0	0.6 - 1.3
STW-926	Water	Sep, 2001	Gr. Beta	8,461.0 ± 206.0; 1,319.2	7,970.0 ± 800.0	0.6 - 1.5
STSO-927	Soil	Sep, 2001	Ac-228	68.1 ± 1.4; 7.0	59.6 ± 2.1	0.8 - 1.5
STSO-927	Soil	Sep, 2001	Am-241	5.2 ± 1.3; 1.4	4.4 ± 0.3	0.6 - 2.6
STSO-927	Soil	Sep, 2001	Bi-212	65.1 ± 1.6; 6.7	62.1 ± 5.2	0.5 - 1.2
STSO-927	Soil	Sep, 2001	Bi-214	47.3 ± 4.7; 6.7	36.9 ± 1.5	0.8 - 1.5
STSO-927	Soil	Sep, 2001	Cs-137	659.2 ± 10.8; 66.8	612.3 ± 30.6	0.8 - 1.3
STSO-927	Soil	Sep, 2001	K-40	737.7 ± 16.6; 75.6	623.3 ± 33.0	0.8 - 1.4
STSO-927	Soil	Sep, 2001	Pb-212	64.7 ± 3.8; 7.5	58.3 ± 3.1	0.7 - 1.4
STSO-927	Soil	Sep, 2001	Pb-214	53.7 ± 7.7; 9.4	39.7 ± 1.7	0.8 - 1.5
STSO-927	Soil	Sep, 2001	Pu-239/40	9.3 ± 2.9; 3.0	8.9 ± 0.3	0.7 - 1.3
STSO-927	Soil	Sep, 2001	Sr-90	27.4 ± 6.3; 6.9	30.6 ± 1.1	0.6 - 3.9
STSO-927	Soil	Sep, 2001	Uranium	155.6 ± 7.8; 17.4	194.2 ± 3.8	0.6 - 1.4
STVE-928	Vegetation	Sep, 2001	Am-241	7.0 ± 0.3; 0.8	6.9 ± 0.4	0.7 - 2.3
STVE-928	Vegetation	Sep, 2001	Cm-244	4.3 ± 0.8; 0.9	4.3 ± 1.0	0.6 - 1.6
STVE-928	Vegetation	Sep, 2001	Co-60	40.2 ± 0.9; 5.5	35.3 ± 1.4	0.8 - 1.5
STVE-928	Vegetation	Sep, 2001	Cs-137	1,184.0 ± 2.8; 161.0	1,030.0 ± 51.8	0.8 - 1.4
STVE-928	Vegetation	Sep, 2001	K-40	1,023.0 ± 44.1; 111.4	898.7 ± 48.2	0.8 - 1.4
STVE-928	Vegetation	Sep, 2001	Pu-239/40	8.9 ± 1.4; 1.7	11.0 ± 0.4	0.7 - 1.5

Table IV-3. Environmental Measurements Laboratory Quality Assessment Program (EML)^a.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in Bq/L ^b		Control Limits ^e
				Laboratory Result ^c	EML Result ^d	
STVE-928	Vegetation	Sep, 2001	Sr-90	1,364.0 ± 18.4; 137.6	1,612.8 ± 48.6	0.5 - 1.2
STAP-929	Air Filter	Sep, 2001	Am-241	0.1 ± 30.0; 30.0	0.1 ± 0.0	0.7 - 2.4
STAP-929	Air Filter	Sep, 2001	Co-60	16.9 ± 0.3; 1.7	17.5 ± 0.5	0.8 - 1.3
STAP-929	Air Filter	Sep, 2001	Cs-134	11.8 ± 0.2; 1.2	13.0 ± 0.4	0.7 - 1.2
STAP-929	Air Filter	Sep, 2001	Cs-137	18.3 ± 0.3; 1.9	17.1 ± 0.6	0.8 - 1.4
STAP-929	Air Filter	Sep, 2001	Mn-54	85.4 ± 1.3; 8.6	81.2 ± 4.8	0.8 - 1.4
STAP-929	Air Filter	Sep, 2001	Pu-238	0.1 ± 0.0; 0.0	0.1 ± 0.0	0.7 - 1.4
STAP-929	Air Filter	Sep, 2001	Pu-239/40	0.2 ± 0.0; 0.0	0.2 ± 0.0	0.7 - 1.3
STAP-929	Air Filter	Sep, 2001	Sr-90	3.1 ± 0.1; 0.3	3.5 ± 0.2	0.6 - 2.1
STAP-929	Air Filter	Sep, 2001	Uranium	0.2 ± 0.1; 0.1	0.2 ± 0.0	0.8 - 2.5
STAP-930	Air Filter	Sep, 2001	Gr. Alpha	6.3 ± 0.1; 0.6	5.4 ± 0.5	0.6 - 1.5
STAP-930	Air Filter	Sep, 2001	Gr. Beta	13.8 ± 0.1; 1.4	12.8 ± 1.3	0.8 - 1.5

^a The Environmental Measurements Laboratory provides the following nuclear species : Air Filters, Soil, Vegetation and Water.

^b Results are reported in Bq/L with the following exceptions: Air Filter results are reported in Bq/Filter, Soil results are reported in Bq/Kg, Vegetation results are reported in Bq/Kg.

^c The EML result listed is the mean of replicate determinations for each nuclide ± the standard error of the mean.

^d The control limits are reported by EML as the ratio of Reported Value / EML value and are established from percentiles of historic data distributions (1982-1992). The evaluation of this historic data and the development of the control limits is presented in DOE report EML-564.

APPENDIX V

ERRATA DATA

From the 2000 Annual Operating Report:

Page 3 of 1.2 “Liquids Released to the Mississippi River”: The “maximum quarterly average concentration of 8.81E-07 μCi ” should read 8.11E-07 μCi .

Page 5 of 3.3 “Assessment of Dose to Member of Public”: “During the period January to December 1999” should read 2000.

Page 8 of 5.4 “Milk”: Dairy Farm (Q-26) is located 3.5 miles East-Southeast of the Quad Cities Nuclear Station vice the East-Northeast as written.

Page 8 of 5.3 “Aquatic Radioactivity”: States “One upstream and one downstream sediment sample sediment sample was analyzed by gamma spectroscopy”. Actually there is only a downstream sediment sample location.

Page 9 of 7.0 “Milch Animals and Nearest Livestock Census”: The Milch animal and Cattle census is found on pages 32 and 33 vice 36 and 37 as written.

Page 9 of 8.0 “Nearest Residence Census”: Census results are found on page 34 vice page 38 as written.

Page I-44 of Table 5.0-4: The “Highest Mean Range” should be (0.011-0.027) vice (0.014-0.026) as written.

Page III-21 of Table 5 “Bottom Sediments”: Q-39 should be listed as “Cordova, Downstream on Mississippi” vice Albany, Upstream on Mississippi as written.

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 $1.77\text{E}+02$ curies of fission and activation gases was released with a maximum quarterly average release rate of $6.39\text{E}+00$ $\mu\text{Ci}/\text{sec}$.

A total of $5.21\text{E}-03$ curies of I-131 was released during the year with a maximum quarterly average release rate of $1.92\text{E}-04$ $\mu\text{Ci}/\text{sec}$.

A total of $1.06\text{E}-02$ curies of beta-gamma emitters was released as airborne particulate matter with a maximum quarterly average release rate of $6.10\text{E}-04$ $\mu\text{Ci}/\text{sec}$. A total of $2.72\text{E}-05$ curies of alpha-emitting radionuclides was released.

A total of $1.12\text{E}+02$ curies of tritium was released with a maximum quarterly average release rate of $4.25\text{E}+00$ $\mu\text{Ci}/\text{sec}$.

1.2 Liquids Released to the Mississippi River

A total of $7.80\text{E}+06$ liters of radioactive liquid waste (prior to dilution) containing $6.78\text{E}-03$ curies (excluding tritium, noble gases, and alpha) was discharged from the station. These wastes were released at a maximum quarterly average concentration of $2.05\text{E}-10$ $\mu\text{Ci}/\text{ml}$. No alpha radioactivity was detected in the liquid waste. A total of $3.54\text{E}+01$ curies of tritium was released at a maximum quarterly average concentration of $8.11\text{E}-07$ $\mu\text{Ci}/\text{ml}$. Quarterly release estimates and principal radionuclides in liquid effluents are given in Table 1.2-1.

2.0 SOLID RADIOACTIVE WASTE

Solid radioactive wastes were shipped to Barnwell, South Carolina; Erwin, Tennessee, Oak Ridge, Tennessee, Gainsville, Florida and Richland, WA. For further detail, refer to the Quad Cities 2000 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.

3.1.2.1 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 $1.88\text{E-}04$ pCi/m³ 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 thyroid dose was $9.37\text{E-}02$ mrem (child) (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 $5.40\text{E-}04$ pCi/m³ (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 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 $2.07\text{E-}04$ mrem and no organ dose exceeded $2.96\text{E-}04$ mrem (Table 3.2-1 [child]).

3.3 Assessment of Dose to Member of Public

During the period January to December, 2000, 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;

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

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 of 5.0 pCi/L during the non-grazing period (November through April) and 0.5 pCi/L during 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.

5.7 Program Modifications

There were no changes to the program in 2000.

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 2, 2000.

Milch animal and nearest cattle census results are presented on pages 32 and 33 of Appendix III.

8.0 NEAREST RESIDENCE CENSUS

A census of the nearest residences within a 6.2-mile radius was conducted on August 2, 2000 by G. Kreuder.

The nearest residence census results are presented on page 34 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 2000.

Table 5.0-4

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility: Quad Cities Nuclear Power StationDocket No. 50-254, 50-2654Location of Facility: Rock Island, IllinoisReporting Period: 2nd Quarter 2000

(County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean ^a Range	Location with Highest Quarterly Mean	Highest Mean ^a Range	Control Locations Mean ^a Range	Number of Non-routine Results		
Air Particulates (pCi/m ³)	Gross Beta	65	0.01	0.019 (52/52) (0.011-0.027)	Q-04, Nitrin 1.7 mi. NE, Sector C	0.020 (13/13) (0.011-0.027)	0.019 (13/13) (0.014-0.024)	0	
	Gamma Spec.	5							
	Cs-134		0.01	<LLD		-	-	<LLD	0
	Cs-137		0.01	<LLD		-	-	<LLD	0
	Other Gammas		0.01-0.04	<LLD	-	-	<LLD	0	
Airborne Iodine (pCi/m ³)	I-131	30	0.07	<LLD	-	-	<LLD	0	
Milk (pCi/L)	I-131	6	0.5/5 ^b	<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		15-30	<LLD	-	-	None	0	
Fish (pCi/g wet)	Gamma Spec.	9							
	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	
Sediments (pCi/g wet)	Gamma Spec.	1							
	Cs-134		0.15	<LLD	-	-	None	0	
	Cs-137		0.18	<LLD	-	-	None	0	
	Other Gammas		0.10-0.60	<LLD	-	-	None	0	
Surface Water (pCi/L)	Gross Beta	6	4	5.1 (1/3)	Q-33, Cordova, 3.3 mi. SSW, Sector K	5.1 (1/3)	4.4 (1/3)	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	

^a Mean and range based on detectable measurements only. Fractions indicated in parentheses.^b 0.5 pCi/L (May-October); 5.0 pCi/L (November-April).

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 = 0.10; Fe-59 = 0.60; Co-58, Co-60 = 0.10; Zn-65 = 0.60; Zr/Nb-95 = 0.20;
Ba/La-140 = 0.60 pCi/g dry weight

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

Sample Description and Concentration

Q-39 Cordova, Downstream on Mississippi

Date Collected	05-12-00	10-21-00
Lab Code	QBS-3369	QBS-8184
Mn-54	0.8 ± 1.1; 1.1	1.0 ± 1.1; 1.1
Fe-59	0.4 ± 2.3; 2.3	2.0 ± 2.4; 2.4
Co-58	0.6 ± 0.9; 0.9	0.7 ± 1.0; 1.0
Co-60	0.3 ± 0.9; 0.9	-0.1 ± 1.4; 1.4
Zn-65	1.1 ± 2.7; 2.7	-1.0 ± 3.0; 3.0
Zr/Nb-95	-3.8 ± 2.0; 2.0	-2.4 ± 1.2; 1.3
Cs-134	2.3 ± 1.3; 1.4	0.3 ± 1.5; 1.5
Cs-137	1.8 ± 1.2; 1.2	4.5 ± 2.1; 2.2
Ba/La-140	0.7 ± 0.9; 0.9	-5.3 ± 1.3; 1.5