

Commonwealth Edison Company  
Quad Cities Generating Station  
22710 206th Avenue North  
Cordova, IL 61242-9740  
Tel 309-654-2241

**ComEd**

LWP-96-039

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U.S. Nuclear Regulatory Commission  
Mail Station P1-137  
Washington, D.C. 20555

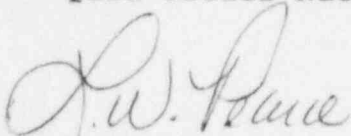
Attention: Document Control Desk

Enclosed is the Quad Cities Station Annual Radiological Environmental Operating Report, Docket Numbers 50-254 and 50-265. This report contains the results of the Radiological Environmental and Meteorological Monitoring Programs for the 1995 calendar year. The Radioactive Effluent Release Report(s) were submitted under separate cover.

Two copies of the report are provided for your use. Two copies will be forwarded to Region III and one copy to the Resident Inspector.

Respectfully,

ComEd  
Quad-Cities Nuclear Power Station



L. W. Pearce  
Station Manager

LWP/mdh

Enclosure

cc: H. J. Miller, Regional Administrator - Region III  
C. Miller, Senior Resident Inspector - Quad Cities  
R.A. Assa, Project Manager - NRR

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QUAD CITIES STATION  
ANNUAL RADIOLOGICAL  
ENVIRONMENTAL OPERATING  
REPORT

1995

APRIL 1996

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## INTRODUCTION

Units 1 and 2 of the Quad Cities Station located near Cordova, Illinois next to the Mississippi River, are 2511 MW<sub>th</sub> boiling water reactors, similar in design to Dresden Units 2 and 3. The station has been designed to keep releases to the environment at levels below those specified in the regulations.

Liquid effluents from Quad Cities are released to the Mississippi River in controlled batches after radioassay of each batch. Gaseous effluents are released to the atmosphere after delay to permit decay of short-lived (noble) gases. Releases to the atmosphere are calculated on the basis of analyses of grab samples of noble gases as well as continuously collected composite samples of iodine and particulate activity sampled during the course of the year. The results of effluent analyses are summarized on a monthly basis and reported to the Nuclear Regulatory Commission as required per Technical Specifications. Airborne concentrations of noble gases, I-131, and particulate radioactivity in offsite areas are calculated using isotopic composition of effluent and meteorological data.

Environmental monitoring is conducted by sampling at indicator and control (background) locations in the vicinity of the Quad Cities station to measure changes in radiation or radioactivity levels that may be attributable to station operations. If significant changes attributable to Quad Cities 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.

ComEd is in the process of implementing a Uniform Radiological Environmental Monitoring Program, referred to as UREMP, among the ComEd nuclear stations. This program includes generic requirements pertaining to environmental sampling and analysis, an annual land use census, an interlaboratory comparison program and environmental reports.

## SUMMARY

Gaseous and liquid effluents for the period contributed to only a small fraction of the Quad Cities Technical Specification limits. Calculations of environmental concentrations based on effluent, and meteorological data for the period indicate that consumption by the public of radionuclides attributable to Quad Cities Station does not exceed the regulatory limits. Radiation exposure from radionuclides released to the atmosphere represented the critical pathway for the period with a maximum individual dose estimated to be  $8.56E-04$  mrem for the year, when a shielding and occupancy factor of 0.7 is assumed. The assessment of radiation doses are performed in accordance with the ComEd Offsite Dose Calculation Manual (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 5.54E+01 curies of fission and activation gases was released with a maximum quarterly average release rate of 2.06  $\mu\text{Ci}/\text{sec}$ .

A total of 1.88E-03 curies of I-131 was released during the year, with a maximum quarterly average release rate of 8.14E-04  $\mu\text{Ci}/\text{sec}$ .

A total of 2.07E-02 curies of beta-gamma emitters was released as airborne particulate matter with a maximum quarterly average release rate of 1.42E-03  $\mu\text{Ci}/\text{sec}$ . A total of 1.46E-05 curies of alpha emitters was released during the year. Gross alpha values for second and fourth quarters are estimates based on values from the previous six months.

A total of 3.12E+01 curies of tritium was released, with a maximum quarterly average release rate of 1.35  $\mu\text{Ci}/\text{sec}$ .

### 1.2 Liquids Released to the Mississippi River

A total of 7.36E+06 liters of radioactive liquid waste (prior to dilution) containing 6.26E-02 curies (excluding tritium, noble gases, and alpha) was discharged from the station. These wastes were released at a maximum quarterly average concentration of 7.03E-09  $\mu\text{Ci}/\text{ml}$ . No alpha radioactivity was detected in the liquid waste. A total of 2.25E+01 curies of tritium was released at a quarterly average concentration of 7.37E-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 (CNSI); Oak Ridge, Tennessee (AERC, American Ecology, SEG); and Wampum, Pennsylvania (Alaron). The record of waste shipments is summarized in Table 2.0-1.

## 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. 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  $8.56E-04$  mrem for the year, with an occupancy or shielding factor of 0.7 included and based on measured effluents and concurrent meteorological data would be  $6.76E-03$  mrem. The maximum gamma air dose was  $1.14E-03$  mrad and  $9.66E-04$  mrad based on concurrent meteorological data.

#### 3.1.1.2 Beta Air and Skin Dose Rates

The range of beta particles in air is relatively small (on the order of a few meters or less); consequently, plumes of gaseous effluents may be considered "infinite" for purpose of calculating the dose from beta radiation incident on the skin. However, the actual dose to sensitive skin tissues is difficult to calculate due to the effect of the beta particle energies, thickness of inert skin and clothing covering sensitive tissues. For purposes of this report the skin is taken to have a thickness of  $7.0 \text{ mg/cm}^2$  and an occupancy factor of 1.0 is used. The skin dose from beta and gamma radiation for the year was  $9.40E-04$  mrem.

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  $9.60E-05$  mrad.

### 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 by an infant.

#### 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  $2.40E-04 \text{ pCi/m}^3$  for the year.

#### 3.1.2.2 Dose to Infant's Thyroid

The hypothetical thyroid dose to an infant 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 infant's thyroid dose was  $3.51E-02$  mrem during the year (Table 3.1-1).

### 3.1.3 Concentrations of Particulates in Air

Concentration contours of radioactive airborne particulates are shown in Figure 3.1-4. The maximum offsite average level is estimated to be  $3.13E-04 \text{ pCi/m}^3$ .



### 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 walking on the shoreline. Not all of these pathways are significant or applicable at a given time or station 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 4.74E-04 mrem and no organ dose exceeded 9.64E-04 mrem (Table 3.2-1).

### 3.3 Assessment of Dose to Member of Public

During the period January to December, 1995, Quad Cites Station did not exceed the following limits as shown in Table 3.1-1 and Table 3.2-1 (based on yearly average meteorological data), as shown in Figure 3.1-1 (based on concurrent meteorological data), and as shown in Table 3.3-1:

- The RETS limits on dose or dose commitment to an individual due to radioactive materials in liquid effluents from each reactor unit (3 mrem to the whole body or 10 mrem to any organ during any calendar quarter; 6 mrem to the whole body or 20 mrem to any organ during any calendar year).
- The RETS limits on air dose in noble gases released in gaseous effluents to a member of the public from each reactor unit (5 mrad for gamma radiation or 10 mrad for beta radiation during any calendar quarter; 10 mrad for gamma radiation or 20 mrad for beta radiation during any calendar year).
- The RETS limits on dose to any individual due to iodine-131, iodine-133, tritium, and radionuclides in particulate form with half-lives greater than eight days in gaseous effluents released from each reactor unit (7.5 mrem to any organ during any calendar quarter; 15 mrem to any organ during any calendar year).
- The RETS 40CFR190 limits for total body dose or any organ (except thyroid) is less than 25 mrem annually for radioactive liquid and gaseous effluents. The thyroid is limited to 75 mrem over 12 consecutive months.
- The 10CFR20 limit on Total Effective Dose Equivalent to individual members of the public (100 mrem).

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



#### 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 about 99.1% for 1995.

#### 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. This program went into effect in November 1977 and differs from previous programs in the number and types of analyses performed. Tables 5.0-3 to 5.0-6 summarize data for the year. Tabulated results of these analyses are not included in the annual report. All data tables are available for inspection at the Station or in Corporate Office.

##### 5.1 Gamma Radiation

External radiation dose from onsite sources and noble gases released to the atmosphere was measured using  $\text{CaSO}_4:\text{Tm}$  thermoluminescent dosimeters (TLDs). A comparison of the TLD results for control stations with onsite and offsite indicator stations is included in Table 5.1-1. The quarterly average external radiation dose for the year was 14.5 mR at the indicator locations and 14.5 at the control locations. TLD results are listed in Table 5.1-1 and locations are shown in Figures 5.0-1 and 5.0-2.

Quarterly average of external radiation dose (including background) at sixteen air sampling locations averaged  $15.0 \pm 1.4$  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) and 1994 (14.1 mR). The differences are not statistically significant.

##### 5.2 Airborne I-131 and Particulate Radioactivity

Locations of the air samplers are shown in Figure 5.0-2. Airborne I-131 remained below the LLD of  $0.10 \text{ pCi/m}^3$  throughout the year.

Gross beta concentrations ranged from  $0.010$  to  $0.044 \text{ pCi/m}^3$  and averaged  $0.022 \text{ pCi/m}^3$  and was similar to overall average levels in 1985 ( $0.024 \text{ pCi/m}^3$ ), 1986 ( $0.025 \text{ pCi/m}^3$ ), except for the period from May 17 through June 7 when it was influenced by the nuclear reactor accident at Chernobyl), 1987 ( $0.023 \text{ pCi/m}^3$ ), 1988 ( $0.030 \text{ pCi/m}^3$ ), 1989 ( $0.028 \text{ pCi/m}^3$ ), 1990 ( $0.020 \text{ pCi/m}^3$ ), 1991 ( $0.022 \text{ pCi/m}^3$ ), 1992 ( $0.021 \text{ pCi/m}^3$ ), 1993 ( $0.021 \text{ pCi/m}^3$ ) and 1994 ( $0.022 \text{ pCi/m}^3$ ).

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

##### 5.3 Aquatic Radioactivity

Water samples were collected daily and composited for analysis weekly from the Station's Intake and Discharge Canal. These cooling water samples were analyzed

weekly for gross beta concentrations. Annual mean gross beta concentration in the intake and discharge canal water samples averaged 4.0 and 5.7 pCi/L, respectively. The results were similar to those obtained in 1986 (4.7 and 5.1 pCi/L), 1987 (3.5 and 3.5 pCi/L), 1988 (3.6 and 3.4 pCi/L), 1989 (3.9 and 3.7 pCi/L), 1990 (4.1 and 3.8 pCi/L), 1991 (4.0 and 4.3 pCi/L), 1992 (3.9 and 3.4 pCi/L), 1993 (3.9 and 3.5 pCi/L) and 1994 (3.9 and 5.5 pCi/L).

Composite samples collected weekly from Discharge Canal during the months of March and April showed an increase in gross beta analysis results. A maximum gross beta result of 27.5 pCi/L was seen from the April 6, 1995, sample. The increase in gross beta analyses results was due to an increase in the activity of normal station releases.

Samples were collected weekly from the East Moline Water Works and Davenport Water Works. These samples were composited monthly for each location and analyzed for gamma emitters. All samples analyzed were below the limits of detection for the program indicating no measurable amount of radioactivity was found due to station operation.

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 upstream and one downstream sediment sample were 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 were collected monthly from November through April and weekly from May through October and analyzed for I-131. Sampled locations were the Musal Dairy, located 6.0 miles west southwest of the station, Bill Stanley Farm located 3.0 miles east northeast of the station, and Dean Havill Farm located 9.7 miles southwest of the station.

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 Sample Collections

All samples were collected as scheduled except those listed in the Listing of Missed Samples, Appendix III. Sample collection anomalies are also included in the Listing of Missed Samples.

#### 5.6 Listing of Missed Samples

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

## 5.7 Program Modifications

Added Dean Havill Farm (Q-32) for milk sampling during September. The farm went out of business in October. No replacement dairy was found.

## 6.0 ANALYTICAL PROCEDURES

Analytical procedures used for analyzing and reporting radioactivity in environmental samples have remained essentially 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 surveys were conducted on August 28 and 29, 1995.

Milch animal and nearest cattle census results are presented in Appendix IV.

## 8.0 NEAREST RESIDENT CENSUS

A census of the nearest residences within a five (5) mile radius was conducted on August 28 and 29, 1995 by G. Kreuder.

The nearest residence census results are presented in Appendix IV.

## 9.0 INTERLABORATORY COMPARISON PROGRAM RESULTS

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

ComEd's Thermoluminescent Dosimeter (TLD) Program is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) which requires biennial review and evaluation. In addition to the biennial ANSI tested requirement, ComEd also tests to the ANSI standard during the non-NVLAP visitation year. ComEd additionally has an internal irradiation program that tests each of the six nuclear station TLD processors once per quarter. The results of all TLD performance tests are retained by ComEd's Corporate Health Physics Support Department.

## 10.0 ERRATA DATA

In January, 1996, while turnover was being conducted between two computer programmers on the ODCM computer program, 5 of the 6 pathways used in the calculation of organ dose to verify compliance with 10CFR50 dose limits were found to be turned "off". It was determined that these pathways were "off" since January 1, 1994, when the computer program was updated to comply with the revision to 10CFR20. The pathway switches were immediately turned on and the organ doses for 1994 and 1995 were recalculated. Appendix VI contains the corrected organ dose data for 1994.

APPENDIX I

DATA TABLES AND FIGURES

TABLE 1.1-1

QCCP 100-16  
UNIT 1(2)  
REVISION C

## ATTACHMENT A (Page 1 of 5)

## EFFLUENT &amp; WASTE DISPOSABLE SEMI-ANNUAL REPORT

## GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

Period: January through June

1995

A. FISSION & ACTIVATION GASES	UNIT	FIRST QUARTER	SECOND QUARTER	Est.Total Error %
1. Total Release	ci	1.39E+01	1.21E+01	12.4
2. Average release rate for the period	µCi/sec	1.79E00	1.54E00	
3. *Percent of ODCM limit Chimney & Stack	%	<u>5.52E-03</u> 2.49E-04	<u>4.82E-03</u> 2.06E-04	

B. IODINE	UNIT	FIRST QUARTER	SECOND QUARTER	Est.Total Error %
1. Total Iodine-131	ci	1.11E-04	2.07E-04	40.0
2. Average release rate for the period	µCi/sec	1.44E-05	2.63E-05	

C. PARTICULATES	UNIT	FIRST QUARTER	SECOND QUARTER	Est.Total Error %
1. Particulates with half-lives >8 days	ci	1.24E-03	3.07E-03	39.1
2. Average release rate for the period	µCi/sec	1.59E-04	3.91E-04	
3. Gross alpha radioactivity	ci	1.31E-06	4.23E-06**	

D. TRITIUM	UNIT	FIRST QUARTER	SECOND QUARTER	Est.Total Error %
1. Total Release	ci	3.57E00	6.21E00	6.2
2. Average release rate for the period	µCi/sec	4.59E-01	7.90E-01	

E. Iodine 131 & 133, Tritium & Particulate	UNIT	FIRST QUARTER	SECOND QUARTER	Est.Total Error %
1. Percent of ODCM limit Chimney & Stack	%	4.23E-02	1.67E-01	

\* NOBLE GAS GAMMA/NOBLE GAS BETA DOSE LIMITS

\*\* BASED ON PREVIOUS SIX MONTHS AVAILABLE DATA



TABLE 1.1-1 (continued)

CGE  
QCCP 100-16  
UNIT 1(2)  
REVISION 0

ATTACHMENT A (Page 1 of 5)

**EFFLUENT & WASTE DISPOSABLE SEMI-ANNUAL REPORT**

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

Period: July through December

1995

A. FISSION & ACTIVATION GASES	UNIT	THIRD QUARTER	FOURTH QUARTER	Est. Total Error %
1. Total Release	Ci	1.30E+1	1.64E+01	12.4
2. Average release rate for the period	μCi/sec	1.64E00	2.06E00	
3. *Percent of ODCM limit Chimney & Stack	%	5.05E-03	6.72E-03	
		2.21E-04	2.84E-04	

B. IODINE				
1. Total Iodine-131	Ci	7.47E-04	8.14E-04	40.0
2. Average release rate for the period	μCi/sec	9.40E-05	1.02E-04	

C. PARTICULATES				
1. Particulates with half-lives >8 days	Ci	5.07E-03	1.13E-02	39.1
2. Average release rate for the period	μCi/sec	6.38E-04	1.42E-03	
3. Gross alpha radioactivity	Ci	2.66E-06	6.35E-06**	

D. TRITIUM				
1. Total Release	Ci	1.07E+01	1.07E+01	6.2
2. Average release rate for the period	μCi/sec	1.35E00	1.35E00	

E. Iodine 131 & 133, Tritium & Particulate				
1. Percent of ODCM limit Chimney & Stack	%	2.54E-01	1.80E-01	

\* NOBLE GAS GAMMA/NOBLE GAS BETA DOSE LIMITS  
\*\* BASED ON PREVIOUS SIX MONTHS AVAILABLE DATA.

TABLE 1.2-1

QCCP 100-16  
UNIT 1(2)  
REVISION 0

## ATTACHMENT A (Page 4 of 5)

## EFFLUENT &amp; 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	3.55E-02	2.07E-02	5.6
2. Average diluted concentration during batch discharges for the period	µCi/mL	7.03E-09	2.30E-09	
3. Percent of applicable limit*	%	1.57E-02 7.10E-03	1.22E-02 5.38E-03	
4. Maximum diluted concentration during batch discharges	µCi/mL	1.58E-08	1.42E-08	
<b>B. TRITIUM</b>				
1. Total Release	Ci	5.44E00	6.38E00	4.0
2. Average diluted concentration during batch discharges for the period	µCi/mL	1.08E-06	7.09E-07	
3. Percent of applicable limit	%	3.59E-02	2.36E-02	
<b>C. DISSOLVED &amp; ENTRAINED GASES</b>				
1. Total Release	Ci	<LLD	7.76E-04	5.6
2. Average diluted concentration during batch discharges for the period	µCi/mL	<LLD	8.64E-11	
3. Percent of applicable limit	%	N/A	4.32E-05	
<b>D. GROSS ALPHA ACTIVITY</b>				
1. Total Release	Ci	<LLD	<LLD	14.5
2. Average diluted concentration during batch discharges for the period	µCi/mL	<LLD	<LLD	
<b>E. VOLUME OF WASTE RELEASED (prior to dilution)</b>				
	Liters	2.12E+06	2.51E+06	
<b>F. VOLUME OF DILUTION WATER USED DURING BATCH DISCHARGES</b>				
	Liters	5.05E+09	9.00E+09	
<b>G. TOTAL VOLUME OF DILUTION WATER USED DURING PERIOD (quarter)</b>				
	Liters	2.69E+11	2.31E+11	

\* Whole Body/Organ (ODCM)

TABLE 1.2-1 (continued)

CGE  
QCCP 100-16  
UNIT 1(2)  
REVISION 0

## ATTACHMENT A (Page 4 of 5)

## EFFLUENT &amp; 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	2.53E-03	3.91E-03	5.5
2. Average diluted concentration during batch discharges for the period	µCi/mL	2.50E-10	4.61E-10	
3. Percent of applicable limit*	%	1.25E-03	1.43E-03	
		5.22E-04	7.84E-04	
4. Maximum diluted concentration during batch discharges	µCi/mL	4.47E-10	8.65E-10	
<b>B. TRITIUM</b>				
1. Total Release	Ci	5.56E00	5.16E00	4.0
2. Average diluted concentration during batch discharges for the period	µCi/mL	5.50E-07	6.08E-07	
3. Percent of applicable limit	%	1.83E-02	2.03E-02	
<b>C. DISSOLVED &amp; ENTRAINED GASES</b>				
1. Total Release	Ci	3.23E-05	4.49E-04	5.5
2. Average diluted concentration during batch discharges for the period	µCi/mL	3.20E-12	5.29E-11	
3. Percent of applicable limit	%	1.60E-06	2.64E-05	
<b>D. GROSS ALPHA ACTIVITY</b>				
1. Total Release	Ci	<LLD	<LLD	14.5
2. Average diluted concentration during batch discharges for the period	µCi/mL	<LLD	<LLD	
<b>E. VOLUME OF WASTE RELEASED (prior to dilution)</b>				
F. VOLUME OF DILUTION WATER USED DURING BATCH DISCHARGES	Liters	1.01E+10	8.49E+09	
G. TOTAL VOLUME OF DILUTION WATER USED DURING PERIOD (quarter)	Liters	3.78E+11	3.60E+11	

\* Whole Body/Organ (ODCM)

TABLE 2.0-1 (continued)

Solid RadWaste Semi-Annual Report

Shipping Date	Carrier	Site	Volume (m <sup>3</sup> )	Millicuries
01/25/95	HITTMAN TRUCKING	SEG	29.90	21.35
TOTALS	1		29.90	21.35

Shipping Date	Carrier	Site	Volume (m <sup>3</sup> )	Millicuries
02/21/95	KINDRICK	AMERICAN ECOL	29.45	1.15
TOTALS	1		29.45	1.15

Shipping Date	Carrier	Site	Volume (m <sup>3</sup> )	Millicuries
03/22/95	HITTMAN TRUCKING	SEG	30.19	13.15
TOTALS	1		30.19	13.15

Shipping Date	Carrier	Site	Volume (m <sup>3</sup> )	Millicuries
04/12/95	KINDRICK	AMERICAN ECOL	58.90	0.02
04/12/95	KINDRICK	AMERICAN ECOL	58.90	2.29
04/26/95	HITTMAN TRUCKING	SEG	30.19	25.08
TOTALS	3		147.99	27.39

Shipping Date	Carrier	Site	Volume (m <sup>3</sup> )	Millicuries
05/31/95	KINDRICK	AMERICAN ECOL	58.90	2.98
TOTALS	1		58.90	2.98

Shipping Date	Carrier	Site	Volume (m <sup>3</sup> )	Millicuries
06/07/95	KINDRICK	AMERICAN ECOL	29.45	17.7
TOTALS	1		29.45	17.7

TABLE 2.0-1 (continued)

Shipping Date	SOLID	RADWASTE	SEMI-ANNUAL	REPORT	Volume (m <sup>3</sup> )	Millicuries
7/1/85		HITTMAN	SEG		29.90	1.51E+01
7/17/85		TSMT	BARNWELL		29.90	4.17E+02
7/21/85		HITTMAN	SEG		29.90	6.48E+00
8/6/85		KONDRICK	ALARON		73.06	4.11E+01
8/10/85		HITTMAN	SEG		36.24	2.91E+01
8/10/85		TSMT	BARNWELL		0.06	4.15E+01
8/11/85		KONDRICK	SEG		72.49	2.10E+01
8/23/85		HITTMAN	ALARON		73.06	7.56E+00
8/30/85		HITTMAN	ALARON		73.06	7.56E+00
8/31/85		TSMT	BARNWELL		3.41	2.05E+05
8/31/85		TSMT	BARNWELL		5.83	2.89E+03
8/20/85		HITTMAN	ALARON		73.06	9.45E+01
8/22/85		TSMT	BARNWELL		3.41	1.06E+05
8/26/85		TSMT	BARNWELL		2.97	4.11E+02
8/28/85		TSMT	BARNWELL		3.41	2.57E+05
8/28/85		HITTMAN	ALARON		73.06	9.81E+01
10/4/85		TSMT	BARNWELL		3.41	2.14E+06
10/6/85		TSMT	BARNWELL		2.97	5.80E+01
10/9/85		TSMT	BARNWELL		3.41	2.85E+08
10/10/85		HITTMAN	ALARON		73.06	1.45E+00
10/13/85		TSMT	AERC		18.89	7.52E+03
10/13/85		KONDRICK	AERC		36.24	7.52E+03
10/13/85		TSMT	BARNWELL		3.41	2.80E+05
10/16/85		TSMT	BARNWELL		5.83	4.70E+01
10/16/85		TSMT	BARNWELL		3.41	2.91E+05
10/19/85		TSMT	BARNWELL		5.83	4.29E+04
10/20/85		TSMT	BARNWELL		5.83	3.29E+04
10/23/85		KONDRICK	AERC		18.14	1.25E+03
10/24/85		KONDRICK	AERC		36.24	1.11E+03
10/24/85		TSMT	BARNWELL		4.81	3.09E+04
10/25/85		HITTMAN	ALARON		73.06	1.07E+03
10/25/85		TSMT	BARNWELL		5.83	1.87E+04
10/25/85		TSMT	BARNWELL		3.41	2.52E+04
10/26/85		KONDRICK	AERC		18.14	6.74E+02
10/27/85		TSMT	BARNWELL		5.83	2.11E+04
10/30/85		KONDRICK	AERC		18.14	1.19E+03
11/1/85		HITTMAN	ALARON		73.06	5.95E+01
11/1/85		TSMT	BARNWELL		3.41	3.46E+05
11/1/85		TSMT	BARNWELL		5.83	5.82E+03
11/2/85		TSMT	BARNWELL		5.83	3.04E+04
11/3/85		TSMT	BARNWELL		5.83	2.89E+04
11/3/85		KONDRICK	AERC		18.14	6.82E+02
11/6/85		KONDRICK	AERC		18.14	1.15E+03
11/7/85		TSMT	BARNWELL		5.83	3.85E+04
11/8/85		TSMT	BARNWELL		5.83	3.33E+04
11/8/85		KONDRICK	AERC		18.14	3.83E+03
11/10/85		HITTMAN	SEG		36.24	2.01E+03
11/10/85		TSMT	BARNWELL		5.83	2.73E+04
11/13/85		TSMT	BARNWELL		3.41	3.90E+04
11/13/85		TSMT	BARNWELL		5.83	1.91E+04
11/14/85		KONDRICK	AERC		18.14	8.50E+02
11/14/85		KONDRICK	AERC		14.44	8.95E+02
11/15/85		TSMT	BARNWELL		5.83	2.38E+04
11/15/85		TSMT	BARNWELL		5.83	2.30E+03
11/16/85		HITTMAN	SEG		36.24	1.96E+03
11/17/85		TSMT	BARNWELL		5.83	2.77E+04
11/20/85		TSMT	BARNWELL		3.41	1.30E+05
11/20/85		TSMT	BARNWELL		5.83	2.31E+04
11/28/85		HITTMAN	ALARON		73.06	4.30E+02
11/29/85		TSMT	BARNWELL		5.83	5.04E+04
11/29/85		TSMT	BARNWELL		5.83	3.11E+04
11/29/85		TSMT	BARNWELL		3.41	1.87E+05
11/29/85		TSMT	BARNWELL		5.83	5.91E+04
11/30/85		TSMT	BARNWELL		3.41	1.10E+05
11/30/85		TSMT	BARNWELL		5.83	2.83E+03
12/4/85		TSMT	BARNWELL		3.41	2.07E+04
12/5/85		TSMT	BARNWELL		5.07	1.63E+04
12/5/85		TSMT	BARNWELL		5.07	1.82E+04
12/8/85		TSMT	BARNWELL		5.07	3.29E+04
12/8/85		TSMT	BARNWELL		3.41	1.32E+05
12/8/85		TSMT	BARNWELL		3.41	2.24E+03
12/7/85		TSMT	BARNWELL		3.41	1.77E+03
12/8/85		TSMT	BARNWELL		5.83	1.12E+03
12/8/85		TSMT	BARNWELL		3.41	5.03E+04
12/11/85		TSMT	BARNWELL		5.83	4.37E+04
12/12/85		TSMT	BARNWELL		5.83	1.91E+01
12/13/85		HITTMAN	ALARON		73.06	5.83E+04
12/13/85		TSMT	BARNWELL		3.41	4.03E+03
12/15/85		TSMT	BARNWELL		5.83	8.51E+02
12/16/85		TSMT	BARNWELL		4.81	2.88E+04
12/16/85		TSMT	BARNWELL		5.83	8.38E+04
12/21/85		KONDRICK	AERC		36.24	8.38E+04

Number of Shipments = 83

Total M<sup>3</sup> = 1497.57

Total Millicuries = 3.55E+06



FIGURE 3.1-1

Estimated Cumulative Gamma Dose (in mrem)  
 from the Quad Cities Station for the period  
 January-December 1995

Isopleth Labels

Small figure - multiply by  $10^5$

Large figure - multiply by  $10^6$

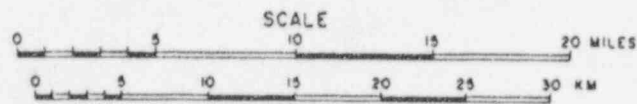
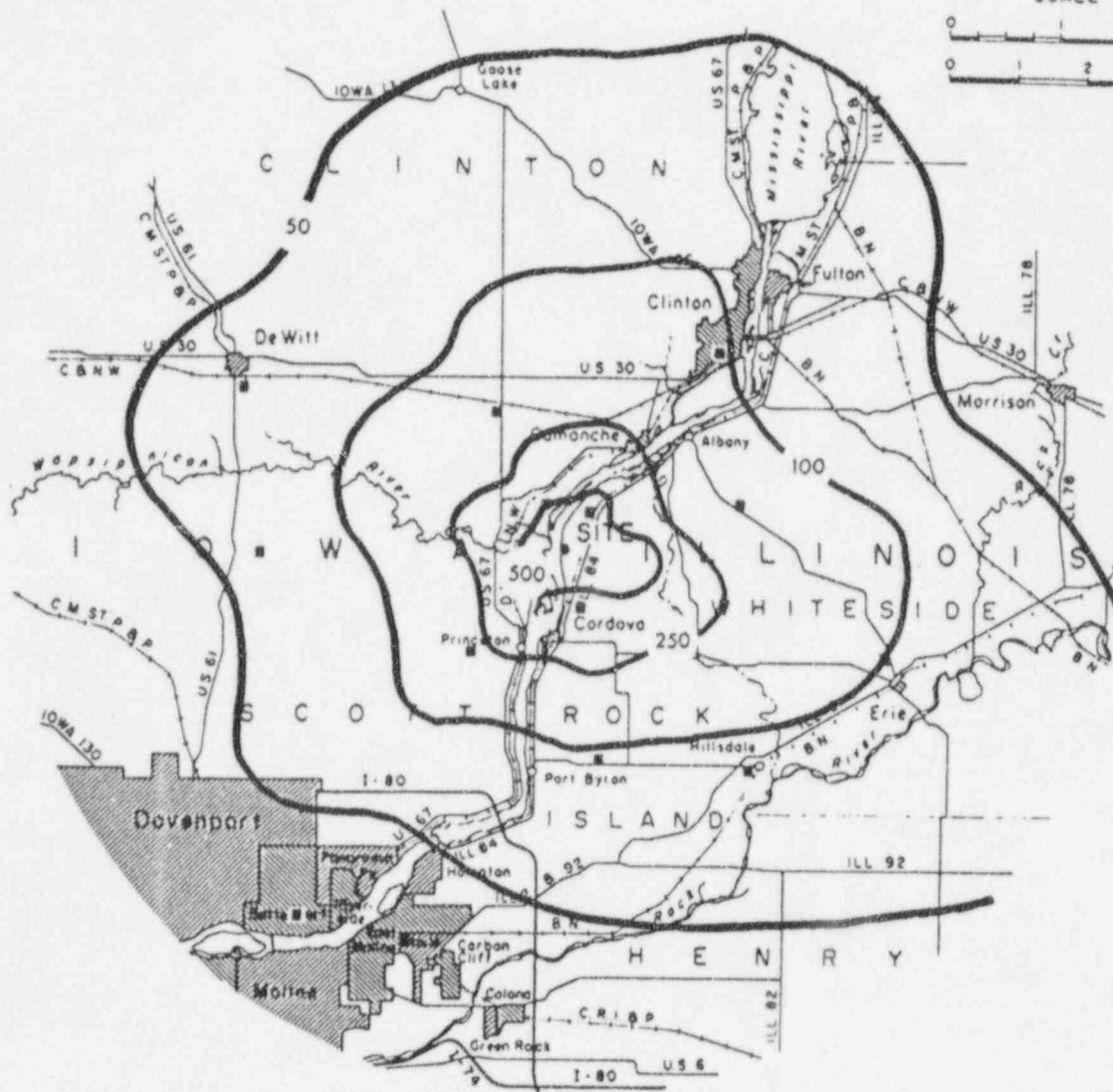
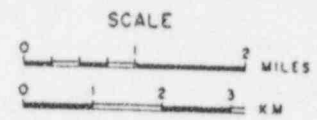
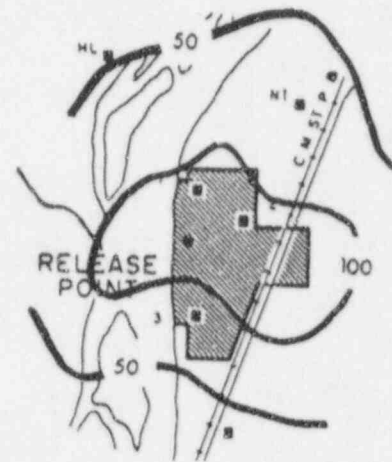


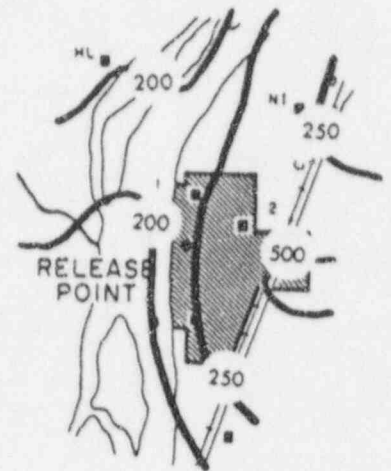
FIGURE 3.1-2

Estimated Total Concentrations (in pCi/m<sup>3</sup>)  
of Noble Gases from the Quad Cities Station  
for the period January-December 1995

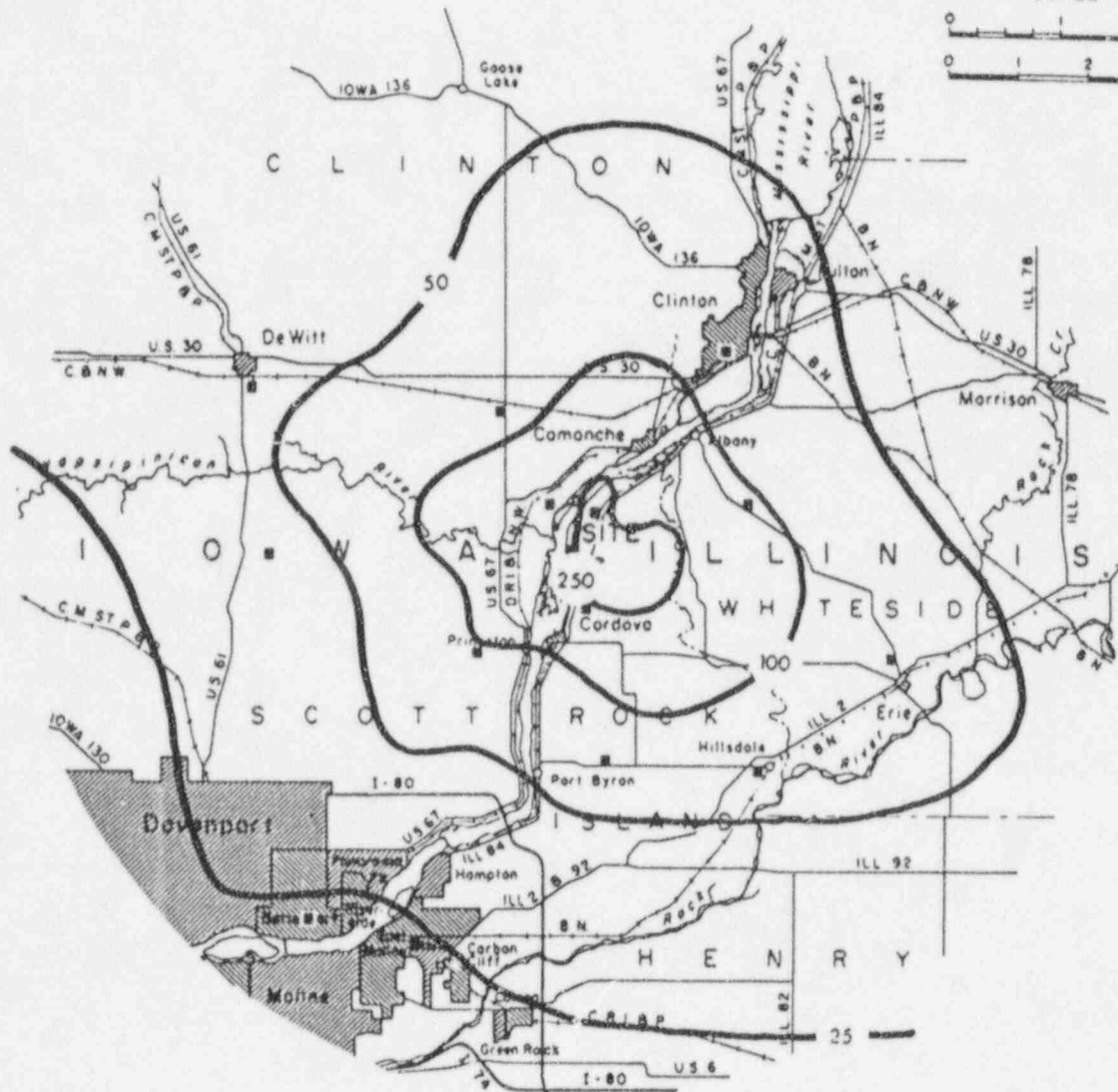
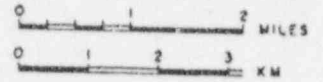
Isopleth Labels

Small figure - multiply by 10<sup>-3</sup>

Large figure - multiply by 10<sup>-3</sup>



SCALE



SCALE

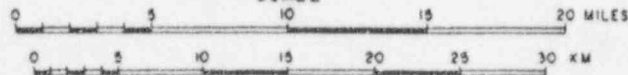


FIGURE 3.1-3

Estimated Total Concentrations (in pCi/m<sup>3</sup>)  
of Iodines from the Quad Cities Station for  
the period January-December 1995

Isopleth Labels

Small figure - multiply by 10<sup>-6</sup>

Large figure - multiply by 10<sup>-6</sup>

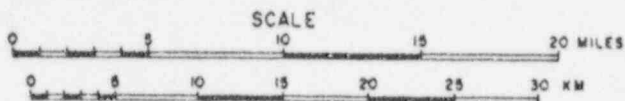
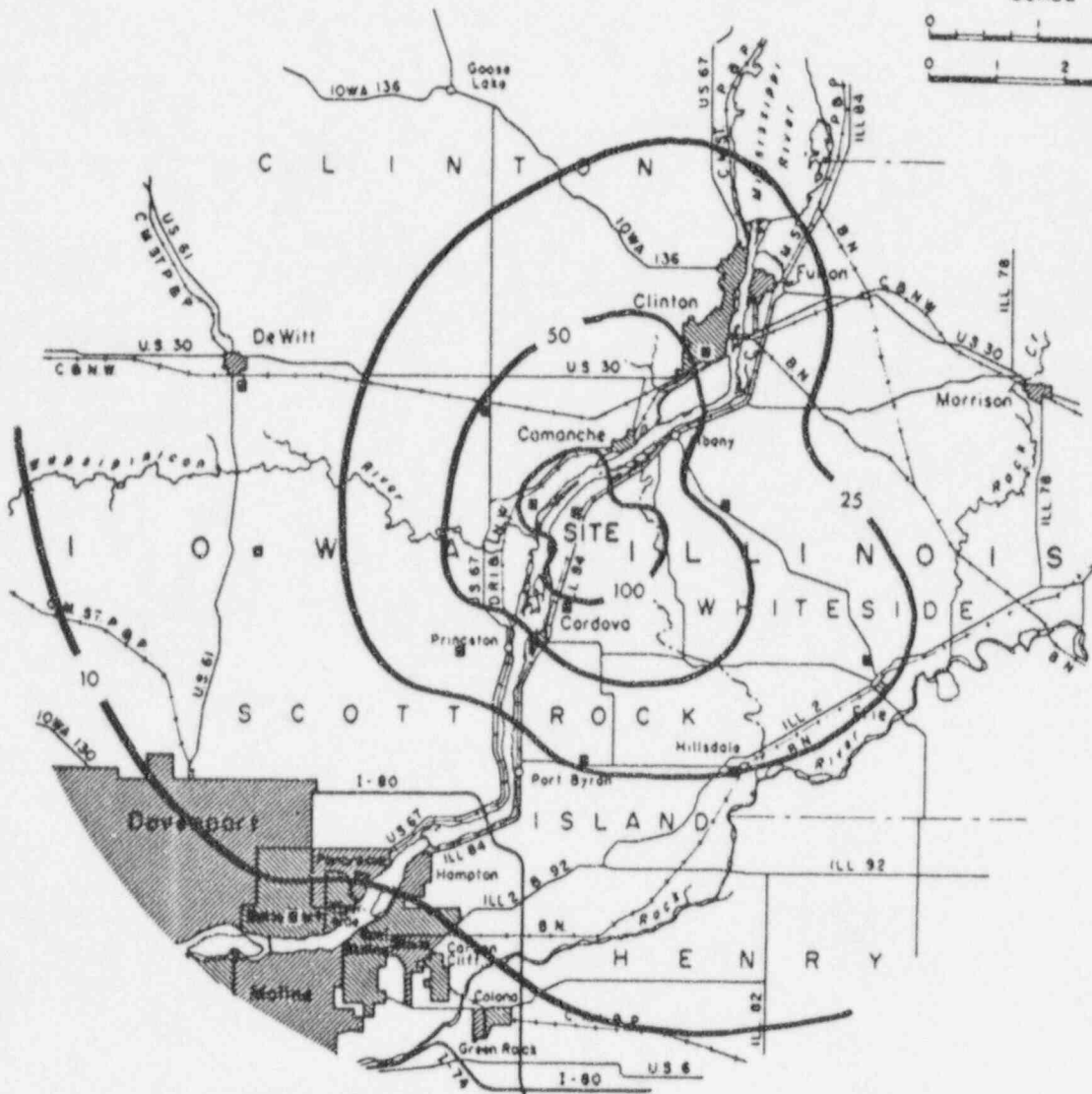
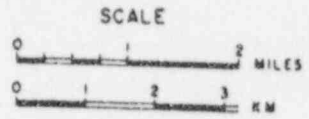
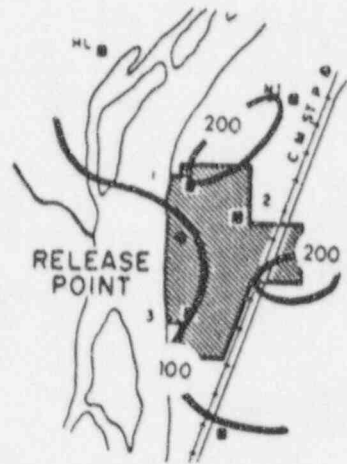


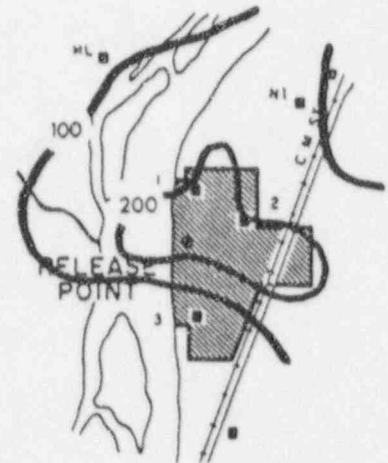
FIGURE 3.1-4

Estimated Total Concentrations (in pCi/m<sup>3</sup>)  
of Particulates from the Quad Cities Station  
for the period January-December 1995

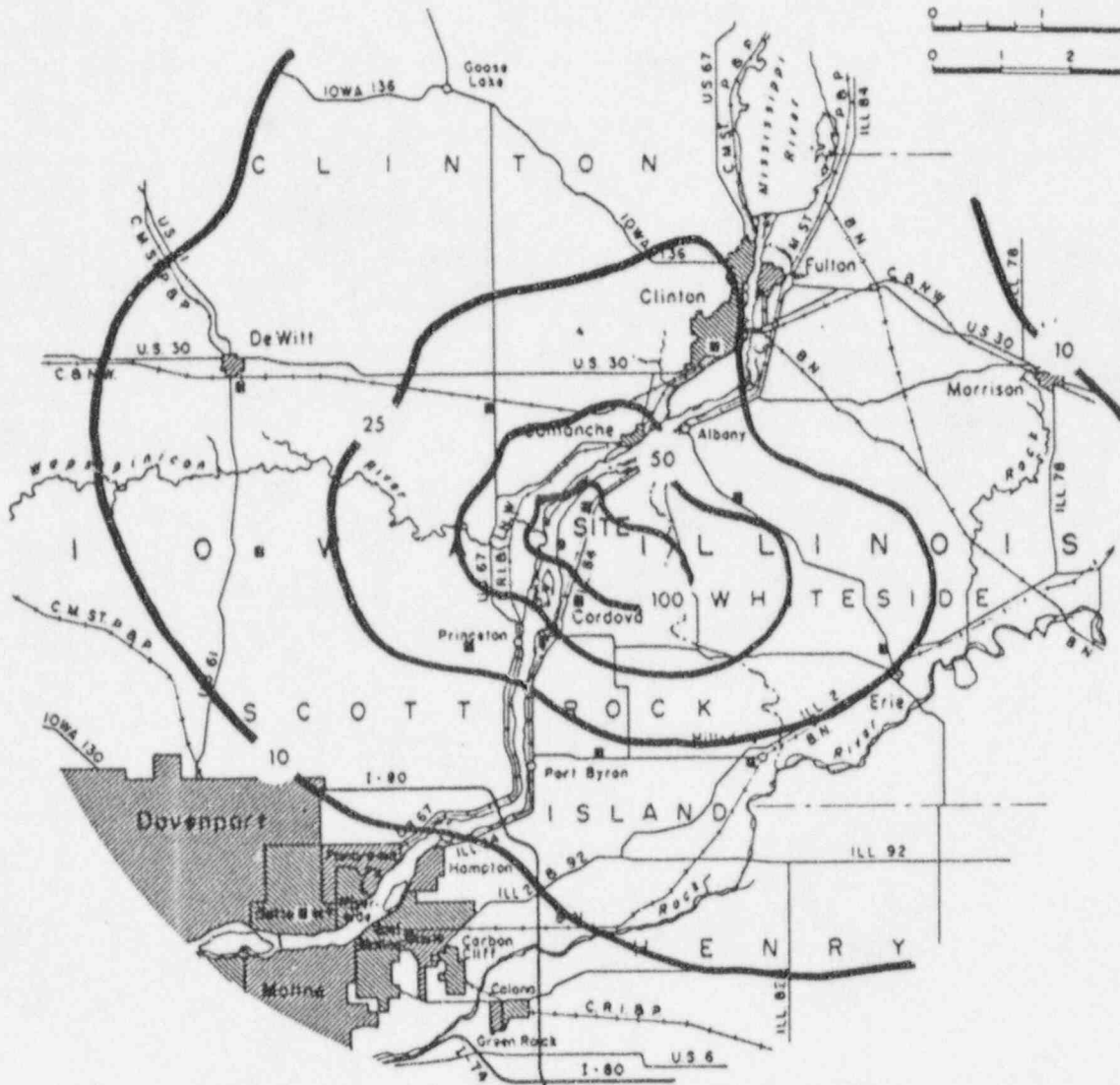
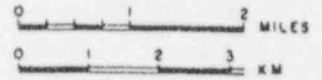
Isopleth Labels

Small figure - multiply by 10<sup>-6</sup>

Large figure - multiply by 10<sup>-6</sup>



SCALE



SCALE

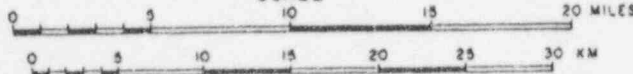


TABLE 3.1-1

QUAD CITIES STATION UNIT ONE

ACTUAL 1995  
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES  
 PERIOD OF RELEASE - 01/01/95 TO 12/31/95 CALCULATED 03/13/96  
 INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	1.69E-04 (NNE )	2.41E-04 (NNE )	2.22E-04 (NNE )	2.99E-04 (NNE )	9.31E-04 (NNE )
BETA AIR (MRAD)	1.50E-05 (ESE )	2.06E-05 (ESE )	1.92E-05 (ESE )	2.23E-05 (ESE )	7.71E-05 (ESE )
TOT. BODY (MREM)	1.27E-04 (NNE )	1.82E-04 (NNE )	1.68E-04 (NNE )	2.26E-04 (NNE )	7.02E-04 (NNE )
SKIN (MREM)	1.41E-04 (NNE )	1.99E-04 (NNE )	1.84E-04 (NNE )	2.46E-04 (NNE )	7.70E-04 (NNE )
ORGAN (MREM)	1.85E-03 (ESE )	4.53E-03 (ESE )	7.30E-03 (ESE )	6.27E-03 (ESE )	1.99E-02 (ESE )
	LUNG	THYROID	THYROID	THYROID	THYROID

THIS IS A REPORT FOR THE CALENDAR YEAR 1995

COMPLIANCE STATUS - 10CFR 50 APP. I  
 INFANT RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.01	10.0	0.01
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.01	0.01	0.01	0.01	5.0	0.01
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.01
ORGAN (MREM)	7.5	0.02	0.06	0.10	0.08	15.0	0.13
	LUNG	THYROID	THYROID	THYROID	THYROID	THYROID	THYROID

RESULTS BASED UPON: ODCM ANNEX REVISION 1.0 JANUARY 1994  
 ODCM SOFTWARE VERSION 1.1 January 1995  
 ODCM DATABASE VERSION 1.1 January 1995



TABLE 3.1-1 (continued)

QUAD CITIES STATION UNIT ONE

ACTUAL 1995  
 MAXIMUM DOSFS RESULTING FROM AIRBORNE RELEASES  
 PERIOD OF RELEASE - 01/01/95 TO 12/31/95 CALCULATED 03/13/96  
 ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	1.69E-04 (NNE )	2.41E-04 (NNE )	2.22E-04 (NNE )	2.99E-04 (NNE )	9.31E-04 (NNE )
BETA AIR (MRAD)	1.50E-05 (ESE )	2.06E-05 (ESE )	1.92E-05 (ESE )	2.23E-05 (ESE )	7.71E-05 (ESE )
TOT. BODY (MREM)	1.27E-04 (NNE )	1.82E-04 (NNE )	1.68E-04 (NNE )	2.26E-04 (NNE )	7.02E-04 (NNE )
SKIN (MREM)	1.41E-04 (NNE )	1.99E-04 (NNE )	1.84E-04 (NNE )	2.46E-04 (NNE )	7.70E-04 (NNE )
ORGAN (MREM)	1.66E-03 (ESE )	4.92E-03 (ESE )	7.30E-03 (ESE )	5.70E-03 (ESE )	1.96E-02 (ESE )

GI\_LLI THYROID THYROID THYROID THYROID  
 THIS IS A REPORT FOR THE CALENDAR YEAR 1995

COMPLIANCE STATUS - 10CFR 50 APP. I  
 ADULT RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.01	10.0	0.01
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.01	0.01	0.01	0.01	5.0	0.01
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.01
ORGAN (MREM)	7.5	0.02	0.07	0.10	0.08	15.0	0.13

GI\_LLI THYROID THYROID THYROID THYROID

RESULTS BASED UPON: ODCM ANNEX REVISION 1.0 JANUARY 1994  
 ODCM SOFTWARE VERSION 1.1 January 1995  
 ODCM DATABASE VERSION 1.1 January 1995

TABLE 3.1-1 (continued)

QUAD CITIES STATION UNIT TWO

ACTUAL 1995  
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES  
 PERIOD OF RELEASE - 01/01/95 TO 12/31/95 CALCULATED 03/13/96  
 INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	1.07E-04 (NNE )	0.00E+00 ( )	3.05E-05 (N )	6.61E-05 (N )	2.04E-04 (NNE )
BETA AIR (MRAD)	9.94E-06 (ESE )	0.00E+00 ( )	2.85E-06 (ESE )	6.13E-06 (ESE )	1.89E-05 (ESE )
TOT. LOD. (MREM)	8.09E-05 (NNE )	0.00E+00 ( )	2.30E-05 (N )	4.99E-05 (N )	1.54E-04 (NNE )
SKIN (MREM)	8.96E-05 (NNE )	0.00E+00 ( )	2.55E-05 (NNE )	5.51E-05 (NNE )	1.70E-04 (NNE )
ORGAN (MREM)	1.32E-03 (ESE )	3.39E-03 (ESE )	5.10E-03 (ESE )	5.36E-03 (ESE )	1.52E-02 (ESE )

LUNG                      THYROID              THYROID              THYROID              THYROID  
 THIS IS A REPORT FOR THE CALENDAR YEAR 1995

COMPLIANCE STATUS - 10CFR 50 APP. I  
 INFANT RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.02	0.05	0.07	0.07	15.0	0.10

LUNG                      THYROID              THYROID              THYROID              THYROID

RESULTS BASED UPON:      ODCM ANNEX REVISION    1.0 JANUARY 1994  
                                  ODCM SOFTWARE VERSION 1.1 January 1995  
                                  ODCM DATABASE VERSION 1.1 January 1995

TABLE 3.1-1 (continued)

QUAD CITIES STATION UNIT TWO

ACTUAL 1995  
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES  
 PERIOD OF RELEASE - 01/01/95 TO 12/31/95 CALCULATED 03/13/96  
 ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	1.07E-04 (NNE )	0.00E+00 ( )	3.05E-05 (N )	6.61E-05 (N )	2.04E-04 (NNE )
BETA AIR (MRAD)	9.94E-06 (ESE )	0.00E+00 ( )	2.85E-06 (ESE )	6.13E-06 (ESE )	1.89E-05 (ESE )
TOT. BODY (MREM)	8.09E-05 (NNE )	0.00E+00 ( )	2.30E-05 (N )	4.99E-05 (N )	1.54E-04 (NNE )
SKIN (MREM)	8.96E-05 (NNE )	0.00E+00 ( )	2.55E-05 (NNE )	5.51E-05 (NNE )	1.70E-04 (NNE )
ORGAN (MREM)	1.12E-03 (ESE )	4.05E-03 (ESE )	5.40E-03 (ESE )	4.85E-03 (ESE )	1.54E-02 (ESE )

GI\_LLI THYROID THYROID THYROID THYROID  
 THIS IS A REPORT FOR THE CALENDAR YEAR 1995

COMPLIANCE STATUS - 10CFR 50 APP. I  
 ADULT RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.01	0.05	0.07	0.06	15.0	0.10

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RESULTS BASED UPON: ODCM ANNEX REVISION 1.0 JANUARY 1994  
 ODCM SOFTWARE VERSION 1.1 January 1995  
 ODCM DATABASE VERSION 1.1 January 1995

TABLE 3.2-1 (continued)

QUAD CITIES STATION UNIT ONE

ACTUAL 1995  
 MAXIMUM DOSES (MREM) RESULTING FROM AQUATIC EFFLUENTS  
 PERIOD OF RELEASE - 01/01/95 TO 12/31/95 CALCULATED 03/13/96  
 ADULT RECEPTOR

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	3.66E-05	7.41E-05	1.05E-05	1.67E-05	1.38E-04
INTERNAL ORGAN	5.33E-05	1.09E-04	1.36E-05	2.36E-05	1.99E-04
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1995

COMPLIANCE STATUS - 10 CFR 50 APP. I

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
TOTAL BODY (MREM)	1.5	0.00	0.00	0.00	0.00	3.0	0.00
CRIT. ORGAN (MREM)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON: ODCM ANNEX REVISION 1.0 JANUARY 1994  
 ODCM SOFTWARE VERSION 1.1 January 1995  
 ODCM DATABASE VERSION 1.1 January 1995

TABLE 3.2-1 (continued)

QUAD CITIES STATION UNIT TWO

ACTUAL 1995  
 MAXIMUM DOSES (MREM) RESULTING FROM AQUATIC EFFLUENTS  
 PERIOD OF RELEASE - 01/01/95 TO 12/31/95 CALCULATED 03/13/96  
 ADULT RECEPTOR

DOSE TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
TOTAL BODY	1.99E-04	1.09E-04	8.24E-06	1.98E-05	3.36E-04
INTERNAL ORGAN	2.96E-04	1.61E-04	1.05E-05	2.74E-05	4.95E-04
	LIVER	LIVER	LIVER	LIVER	LIVER

THIS IS A REPORT FOR THE CALENDAR YEAR 1995

COMPLIANCE STATUS - 10 CFR 50 APP. I

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
TOTAL BODY (MREM)	1.5	0.01	0.01	0.00	0.00	3.0	0.01
CRIT. ORGAN (MREM)	5.0	0.01	0.00	0.00	0.00	10.0	0.00
		LIVER	LIVER	LIVER	LIVER		LIVER

RESULTS BASED UPON: ODCM ANNEX REVISION 1.0 JANUARY 1994  
 ODCM SOFTWARE VERSION 1.1 January 1995  
 ODCM DATABASE VERSION 1.1 January 1995



TABLE 3.3-1

QUAD CITIES STATION UNIT ONE

10 CFR 20 COMPLIANCE ASSESSMENT

PERIOD OF ASSESSMENT 01/01/95 TO 12/31/95

CALCULATED 03/08/96

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

Total Effective Dose Equivalent, mrem/yr	2.65E+00
10 CFR 20.1301 (a)(1) limit mrem/yr	100.0
% of limit	2.65

Compliance Summary - 10CFR20

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	% of Limit
TEDE	6.06E-01	7.48E-01	7.37E-01	5.61E-01	2.65

RESULTS BASED UPON: ODCM ANNEX REVISION 1.0 JANUARY 1994  
 ODCM SOFTWARE VERSION 1.1 January 1995  
 ODCM DATABASE VERSION 1.1 January 1995

TABLE 3.3-1 (continued)

QUAD CITIES STATION UNIT ONE  
 10 CFR 20 COMPLIANCE ASSESSMENT  
 PERIOD OF ASSESSMENT 01/01/95 TO 12/31/95  
 CALCULATED 03/08/96

2. 10 CFR 20.1301 (d)/40 CFR 190 Compliance

		Dose (mrem)	Limit (mrem)	% of Limit
Whole Body (DDE)	Plume	7.02E-04		
	Skyshine	2.64E+00		
	Ground	8.81E-03		
	Total	2.65E+00	25.0	10.59
Organ Dose (CDE)	Thyroid	7.73E-03	75.0	0.01
	Gonads	5.60E-03	25.0	0.02
	Breast	5.45E-03	25.0	0.02
	Lung	5.74E-03	25.0	0.02
	Marrow	5.49E-03	25.0	0.02
	Bone	5.44E-03	25.0	0.02
	Remainder	5.88E-03	25.0	0.02
	CEDE	5.72E-03		
TEDE	2.65E+00	100.0	2.65	

RESULTS BASED UPON: ODCM ANNEX REVISION 1.0 JANUARY 1994  
 ODCM SOFTWARE VERSION 1.1 January 1995  
 ODCM DATABASE VERSION 1.1 January 1995

TABLE 3.3-1 (continued)

QUAD CITIES STATION UNIT TWO

10 CFR 20 COMPLIANCE ASSESSMENT

PERIOD OF ASSESSMENT 01/01/95 TO 12/31/95

CALCULATED 03/08/96

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

Total Effective Dose Equivalent, mrem/yr	1.10E+00
10 CFR 20.1301 (a)(1) limit mrem/yr	100.0
% of limit	1.10

Compliance Summary - 10CFR20

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	% of Limit
TEDE	4.66E-01	3.43E-03	2.39E-01	3.92E-01	1.10

RESULTS BASED UPON: ODCM ANNEX REVISION 1.0 JANUARY 1994  
 ODCM SOFTWARE VERSION 1.1 January 1995  
 ODCM DATABASE VERSION 1.1 January 1995

TABLE 3.3-1 (continued)

QUAD CITIES STATION UNIT TWO  
 10 CFR 20 COMPLIANCE ASSESSMENT  
 PERIOD OF ASSESSMENT 01/01/95 TO 12/31/95  
 CALCULATED 03/08/96

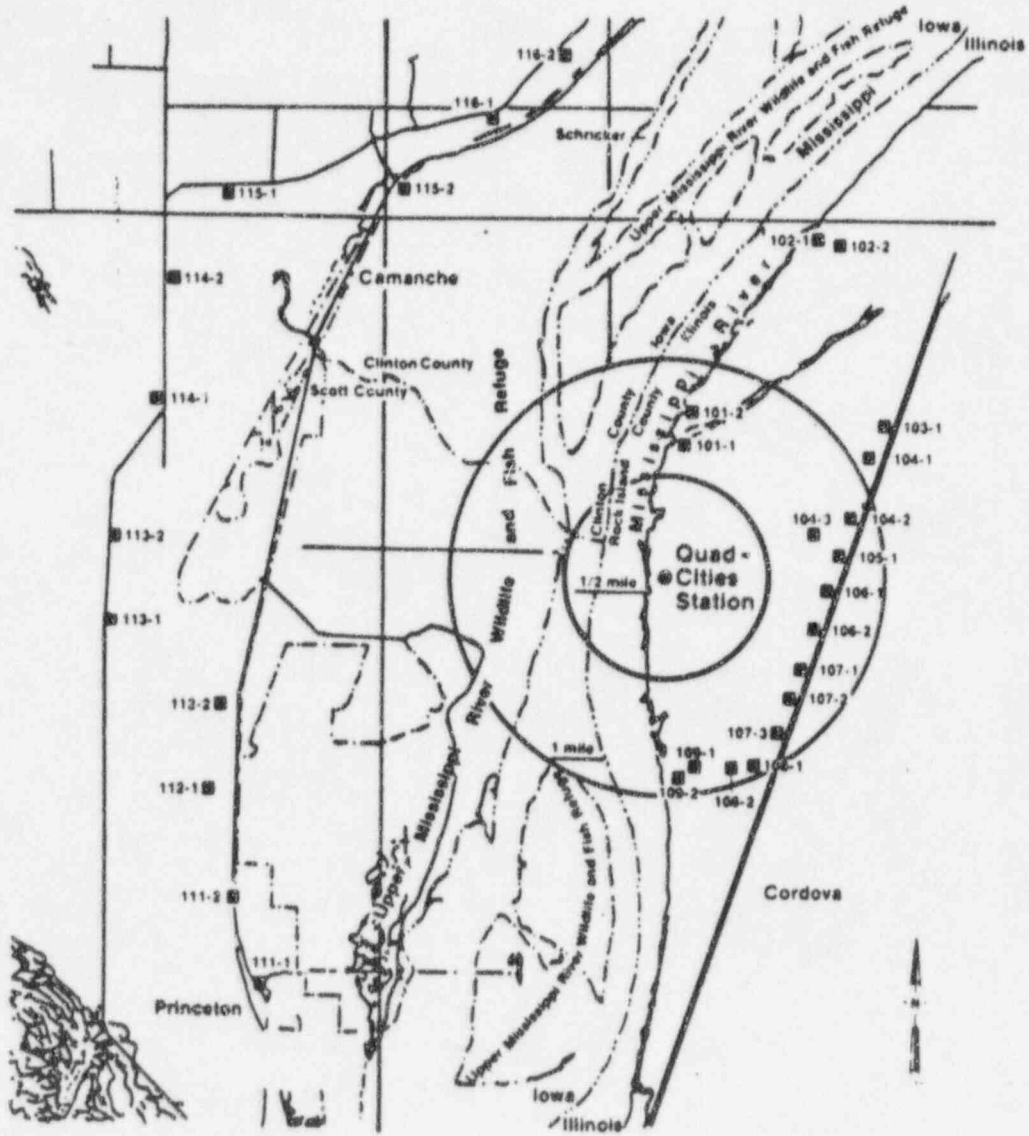
2. 10 CFR 20.1301 (d)/40 CFR 190 Compliance

		Dose (mrem)	Limit (mrem)	% of Limit
Whole Body (DDE)	Plume	1.54E-04		
	Skyshine	1.09E+00		
	Ground	7.46E-03		
	Total	1.10E+00	25.0	4.38
Organ Dose (CDE)	Thyroid	5.86E-03	75.0	0.01
	Gonads	4.57E-03	25.0	0.02
	Breast	4.41E-03	25.0	0.02
	Lung	4.68E-03	25.0	0.02
	Marrow	4.46E-03	25.0	0.02
	Bone	4.40E-03	25.0	0.02
	Remainder	4.83E-03	25.0	0.02
	CEDE	4.66E-03		
	TEDE	1.10E+00	100.0	1.10

RESULTS BASED UPON: ODCM ANNEX REVISION 1.0 JANUARY 1994  
 ODCM SOFTWARE VERSION 1.1 January 1995  
 ODCM DATABASE VERSION 1.1 January 1995

FIGURE 5.0-1

Revision 1.0  
January 1994



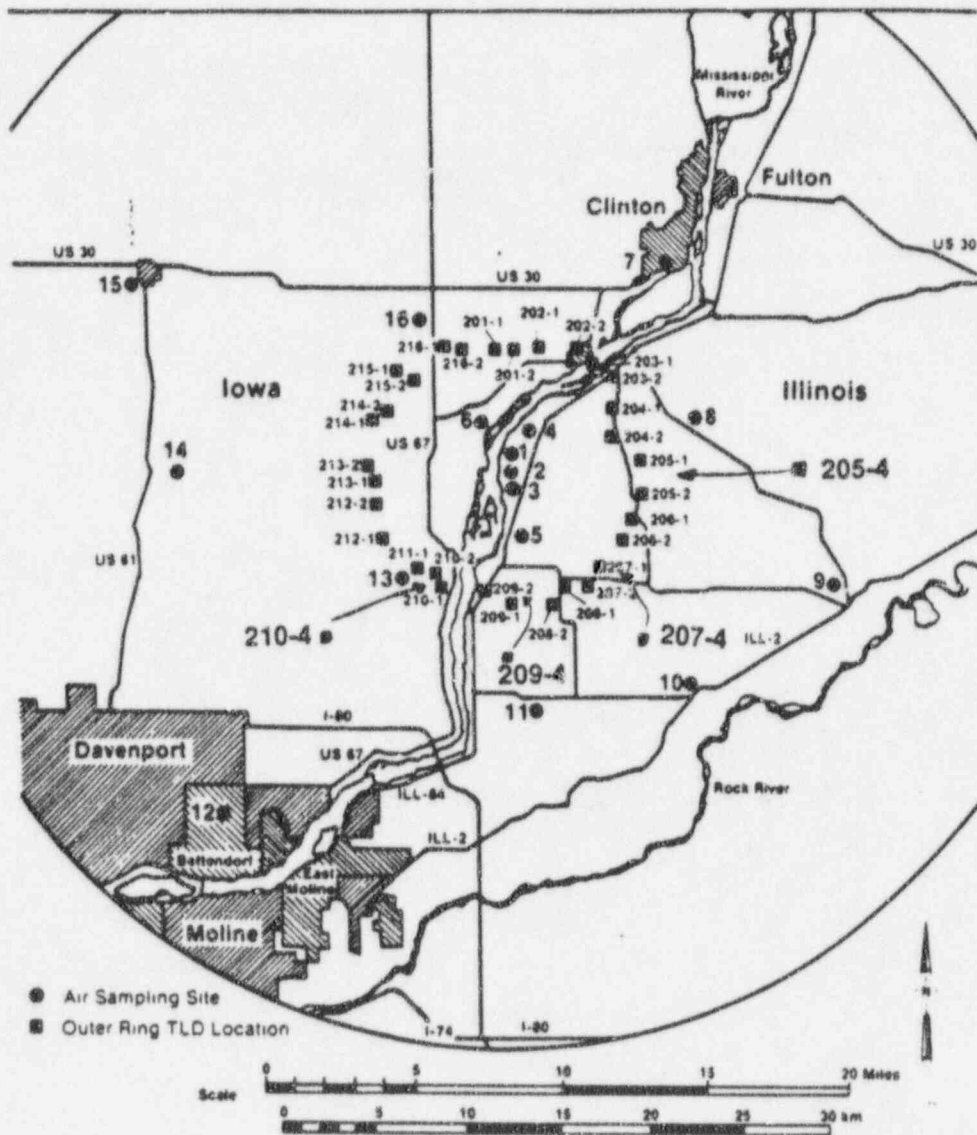
■ TLD Location

QUAD CITIES STATION
INNER RING TLD LOCATIONS



FIGURE 5.0-2

Revision 1.0  
January 1994



**QUAD CITIES STATION**

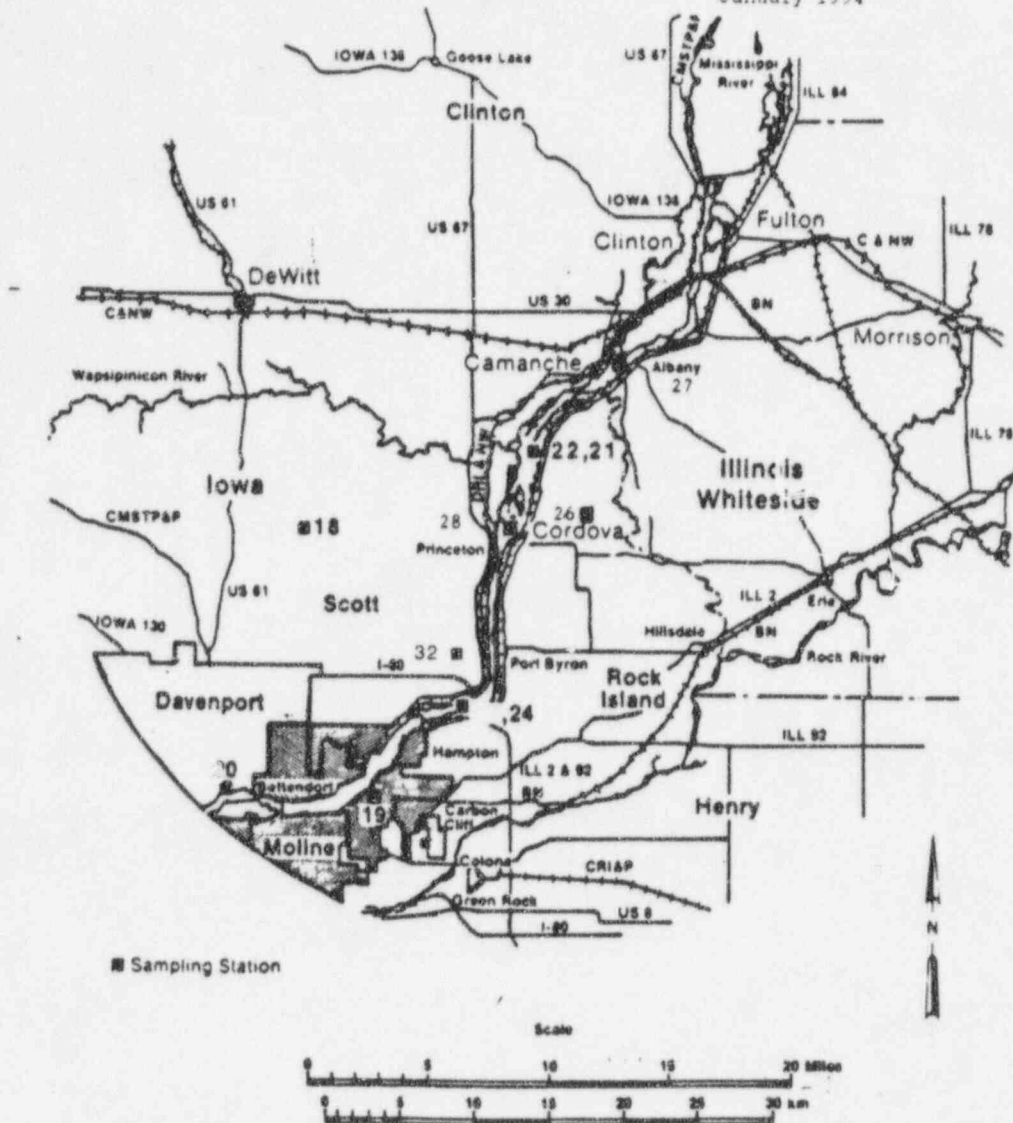
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FIXED AIR SAMLING SITES AND  
OUTER RING TLD LOCATIONS

Q-01	Onsite No. 1	Q-09	Erie
Q-02	Onsite No. 2	Q-10	Hillsdale
Q-03	Onsite No. 3	Q-11	Port Byron
Q-04	Nitrin	Q-12	Bettendorf
Q-05	Saddle Club Dairy	Q-13	Princeton
Q-06	Fairbanks	Q-14	Utica Ridge Road
Q-07	Clinton	Q-15	DeWitt
Q-08	Sikkema Farm	Q-16	Low Moor

FIGURE 5.0-3

Revision 1.0  
January 1994



### QUAD CITIES STATION

MILK, FISH, WATER, AND SEDIMENT  
SAMPLE LOCATIONS

- Q-18 Musal Dairy
- Q-19 East Moline Water Works
- Q-20 Davenport Water Works
- Q-21 Intake Canal
- Q-22 Discharge Canal
- Q-24 Pool #14 of Mississippi River
- Q-26 Bill Stanley Dairy
- Q-27 Albany, Upstream on Mississippi River
- Q-28 Cordova, Downstream on Mississippi River
- QSP-29 Mississippi River, Upstream
- QSP-30 Mississippi River, Downstream
- Q-32 Dean Havill Farm

TABLE 5.0-1

Quad Cities Station Radiological Environmental Monitoring Locations	Air Sampling		Cooling Water	Fish	Public Water	Milk	Sediments	Surface Water	Ground/Well Water
		TLD							
Q-01 Onsite No. 1	0	0	.	.	.	.	.	.	.
Q-02 Onsite No. 2	0	0	.	.	.	.	.	.	.
Q-03 Onsite No. 3	0	0	.	.	.	.	.	.	.
Q-04 Nitrin	0	0	.	.	.	.	.	.	.
Q-05 Saddle Club Dairy Farm	0	0	.	.	.	.	.	.	.
Q-06 Fairbanks	0	0	.	.	.	.	.	.	.
Q-07 Clinton	0	0	.	.	.	.	.	.	.
Q-08 Sikkema Farm	0	0	.	.	.	.	.	.	.
Q-09 Erie	0	0	.	.	.	.	.	.	.
Q-10 Hillsdale	0	0	.	.	.	.	.	.	.
Q-11 Port Byron	0	0	.	.	.	.	.	.	.
Q-12 Bettendorf	0	0	.	.	.	.	.	.	.
Q-13 Princeton	0	0	.	.	.	.	.	.	.
Q-14 Utica Ridge Road	0	0	.	.	.	.	.	.	.
Q-15 DeWitt	0	0	.	.	.	.	.	.	.
Q-16 Low Moor	0	0	.	.	.	.	.	.	.
Q-18 Musal Dairy	.	.	.	.	.	0	.	.	.
Q-19 East Moline Water Works	.	.	.	.	0	.	.	.	.
Q-20 Davenport Water Works	.	.	.	.	0	.	.	.	.
Q-21 Intake Canal	.	.	0	.	.	.	.	.	.
Q-22 Discharge Canal	.	.	0	.	.	.	.	.	.
Q-24 Pool #14 of Mississippi River	.	.	.	0	.	.	.	.	.
Q-26 Bill Stanley Dairy	.	.	.	.	.	0	.	.	.
Q-27 Albany, Upstream on Mississippi River	.	.	.	.	.	.	0	.	.
Q-28 Cordova, Downstream on Mississippi River	.	.	.	.	.	.	0	.	.
QSP-29 Mississippi River, Upstream	.	.	.	0	.	.	.	.	.
QSP-30 Mississippi River, Downstream	.	.	.	0	.	.	.	.	.
Q-32 Dean Havill Farm <sup>a</sup>	.	.	.	.	.	0	.	.	.

CENSUS

Dairy  
Residence  
Livestock

<sup>a</sup> Dean Havill Farm was added to the program in September of 1995 and went out of business in October of 1995.

TABLE 5.0-2

## QUAD CITIES STATION

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLING LOCATIONS

## 1. AIR SAMPLERS

<u>Site Code</u> <sup>a</sup>	<u>Location</u>	<u>Distance</u> <u>(miles)</u>	<u>Direction</u> <u>(°)</u>
Q-01	Onsite No. 1	0.5	7
Q-02	Onsite No. 2	0.5	70
Q-03	Onsite No. 3	0.6	177
Q-04	Nitrin	1.5	40
Q-05	Saddle Club Dairy Farm	1.8	175
Q-06	Fairbanks	1.8	340
Q-07 (C)	Clinton	9.0	40
Q-08 (C)	Sikkema Farm	7.0	70
Q-09 (C)	Erie	13.0	110
Q-10 (C)	Hillsdale	10.0	130
Q-11 (C)	Port Byron	8.0	170
Q-12 (C)	Bettendorf	13.0	210
Q-13	Princeton	4.8	220
Q-14 (C)	Utica Ridge Road	11.0	270
Q-15 (C)	DeWitt	13.0	300
Q-16	Low Moor	6.0	330

## 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>(°)</u>
Inner Ring		
Q-101-1,2	0.7	4
Q-102-1,2	1.7	21
Q-103-1,2	1.2	58
Q-104-1	1.1	60
Q-104-2	1.0	77
Q-104-3	0.6	77
Q-105-1,2	0.8	91
Q-106-1	0.7	109
Q-106-2	0.7	118
Q-107-1	0.7	128
Q-107-2	0.7	137
Q-107-3	0.8	146
Q-108-1,2	0.9	155

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

TABLE 5.0-2 (continued)

## QUAD CITIES STATION

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLING LOCATIONS

2. TLDs

## b. Special TLD locations (continued)

<u>Site Code</u>	<u>Distance (miles)</u>	<u>Direction (°)</u>
Q-109-1,2	0.9	176
Q-111-1,2	2.6	230
Q-112-1,2	2.4	246
Q-113-1,2	2.5	264
Q-114-1,2	2.6	286
Q-115-1,2	2.3	310
Q-116-1,2	2.2	339
Outer Ring		
Q-201-1,2	4.0	356
Q-202-1,2	4.4	17
Q-203-1,2	5.5	34
Q-204-1,2	4.5	61
Q-205-1,2,4	4.5	83
Q-206-1,2	4.8	113
Q-207-1,2,4	4.8	133
Q-208-1,2	4.4	158
Q-209-1,2,4	4.8	179
Q-210-1,2,4	4.4	210
Q-211-1,2	5.0	223
Q-212-1,2	4.8	242
Q-213-1,2	4.7	265
Q-214-1,2	4.2	310
Q-215-1,2	4.3	316
Q-216-1,2	4.5	333

3. MILK

<u>Site Code<sup>a</sup></u>	<u>Location</u>	<u>Distance (mile)</u>	<u>Direction (°)</u>
Q-18	Musal Dairy	6.0	240
Q-26	Bill Stanley Dairy	3.0	120
Q-32	Dean Havill Farm <sup>b</sup>	9.7	214

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

<sup>b</sup> Dean Havill Farm was added to the program in September of 1995 and went out of business in October of 1995.



TABLE 5.0-2 (continued)

## QUAD CITIES STATION

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLING LOCATIONS

4. PUBLIC WATER SUPPLY

<u>Site Code</u> <sup>a</sup>	<u>Location</u>	<u>Distance</u> <u>(miles)</u>	<u>Direction</u> <u>(°)</u>
Q-19	East Moline Water Works	16.0	206
Q-20	Davenport Water Works	18.0	219

5. COOLING WATER

<u>Site Code</u> <sup>a</sup>	<u>Location</u>	<u>Distance</u> <u>(miles)</u>	<u>Direction</u> <u>(°)</u>
Q-21 (C)	Intake Canal	At Station	
Q-22	Discharge Canal	At Station	

6. FISH

<u>Site Code</u> <sup>a</sup>	<u>Location</u>	<u>Distance</u> <sup>b</sup> <u>(miles)</u>	<u>Direction</u> <u>(°)</u>
Q-24	Pool #14 of Mississippi River	0.5	330
QSP-29 (C)	Mississippi River, Upstream	1.0	240
QSP-30	Mississippi River, Downstream	1.0	200

7. SHORELINE SEDIMENTS

<u>Site Code</u> <sup>a</sup>	<u>Location</u>	<u>Distance</u> <u>(miles)</u>	<u>Direction</u> <u>(°)</u>
Q-27 (C)	Albany, Upstream on Mississippi River	5.5	35
Q-28	Cordova, Downstream on Mississippi River	3.3	205

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

<sup>b</sup> These locations are approximations of the areas the fish are collected.

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	Remarks	
	Code <sup>a</sup>	Site					
1. Airborne Particulates	Onsite and Near Field		Continuous operation for one week	Gross Beta	Weekly	On all onsite and near field samples.	
	Q-01	Onsite No. 1		Gamma isot.		If gross beta in a sample exceeds 5X the average concentration of the preceding calendar quarter for the sample location.	
	Q-02	Onsite No. 2		Gamma isot.	Quarterly	On Quarterly composite from each location.	
	Q-03	Onsite No. 3					
	Q-04	Nitrin					
	Q-05	Saddle Club Dairy Farm					
	Q-06	Fairbanks	Far Field	Continuous operation for one week	Gross Beta	Weekly	See footnote "b."
	Q-07 (C)	Clinton			Gamma isot.		See footnote "b"
	Q-08 (C)	Sikkema Farm		Filter Exchange	Weekly	If gross beta in a sample exceeds 5X the average concentration of the preceding calendar quarter for the sample location.	
	Q-09 (C)	Erie					
	Q-10 (C)	Hillsdale					
	Q-11 (C)	Port Byron					
	Q-12 (C)	Bettendorf					
	Q-13	Princeton					
	Q-14 (C)	Utica Ridge Road					
	Q-15 (C)	DeWitt					
Q-16	Low Moor						
2. Airborne Iodine	Same as 1.		Continuous operation for two weeks	I-131	Biweekly	On all samples from onsite and near field; for far field samples, see footnote "b."	
3. Air Sampling Train	Same as 1.		--	Test and Maintenance	Weekly	On all samplers.	

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

<sup>b</sup> Far-field samples are analyzed when near-field results are inconsistent with previous measurements and radioactivity is confirmed as having its origin in airborne effluents released from the station or at the discretion of the Emergency Preparedness Director.

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	Remarks
	Code <sup>a</sup>	Site				
4. TLD	a. Same as i.		Quarterly	Gamma	Quarterly	Two sets of TLD's at all air sampler locations. All sets read Quarterly.
	b. Q-101-1,2 102-1,2 103-1,2 104-1,2,3 105-1,2 106-1,2 107-1,2,3 108-1,2 109-1,2 111-1,2 112-1,2 113-1,2 114-1,2 115-1,2 116-1,2	Inner Ring	Quarterly	Gamma	Quarterly	All TLDs are read Quarterly.
	Q-201-1,2 202-1,2 203-1,2 204-1,2 205-1,2,4 206-1,2 207-1,2,4 208-1,2 209-1,2,4 210-1,2,4 211-1,2 212-1,2 213-1,2 214-1,2 215-1,2 216-1,2	Outer Ring				

<sup>a</sup> Control (background) locations are denoted by a "C" in this column. 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	Remarks
	Code <sup>a</sup>	Site				
5. Milk	Q-18	Musal Dairy	Weekly: May through October Monthly: November through April	I-131	Weekly: May through October Monthly: November through April	On all samples. LLD: 0.5 pCi/L while on pasture
	Q-26	Bill Stanley Dairy				
	Q-32	Dean Havill Farm <sup>b</sup>				
6. Public Water	Q-19	East Moline Water Works	Weekly	Gamma Isot.	Monthly	On monthly composite from each location.
	Q-20	Davenport Water Works				
7. Cooling Water	Q-21 (C)	Intake Canal	Weekly	Gross Beta	Weekly	On all samples.
	Q-22	Discharge Canal				
8. Fish	Q-24	Pool #14 of Mississippi River	Semiannually	Gamma Isot.	Semiannually	On edible portions only. At least two species.
	QSP-29 (C)	Mississippi River, Upstream				
	QSP-30	Mississippi River, Downstream				
9. Shoreline Sediments	Q-27 (C)	Albany, Upstream on Mississippi River	Annually	Gamma Isot.	Annually	On all samples.
	Q-28	Cordova, Downstream on Mississippi River				
10. 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 5 miles		--	b. Enumeration by using referenced information from county agricultural agents or other reliable sources.	Annually	During grazing season.

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

<sup>b</sup> Dean Havill Farm was added to the program in September of 1995 and went out of business in October of 1995.

TABLE 5.0-2 (continued)

QUAD CITIES STATION

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM, SAMPLE COLLECTION AND ANALYSIS

Sample Media	Code	Location	Site	Collection Frequency	Type of Analysis	Frequency of Analysis	Remarks
10. Land Use Census (continued)							
Milch Animals	c.	At dairies listed in Item 5.		--	c. Inquire as to feeding practices: 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%.	Annually	During grazing season.
Nearest Residence Census		In all 16 sectors up to 5 miles				Annually	



TABLE 5.0-3

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Quad Cities Nuclear Power Station Docket No. 50-254, 50-265  
 Location of Facility Rock Island, Illinois Reporting Period 1st Quarter 1995  
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean <sup>a</sup> Range	Location with Highest Quarterly Mean		Control Locations Mean <sup>a</sup> Range	Number of Non-routine Results
				Location	Mean Range		
Air Particulates (pCi/m <sup>3</sup> )	Gross Beta 78	0.01	0.024 (76/78) (0.012-0.044)	Q-06, Fairbanks 1.8 mi @ 340°	0.026 (13/13) (0.013-0.044)	None	0
	Gamma Spec. 6	0.01	<LLD	-	-	None	0
Airborne Iodine (pCi/m <sup>3</sup> )	I-131 36	0.10	<LLD	-	-	None	0
Gamma Background (TLDs) (mR/Qtr.)	Gamma Dose 94	9.7	14.3 (78/78) (12.3-18.8)	Q-204-1 4.5 mi @ 61°	18.8 (1/1)	14.4 (16/16) (12.0-16.2)	0
Milk (pCi/L)	I-131 6	5	<LLD	-	-	<LLD	0
Cooling Water (pCi/L)	Gross Beta 26	5	11.3 (6/6) (6.5-22.8)	Q-22, Discharge Canal at Station	11.3 (6/6) (6.5-22.8)	<LLD	0
Public Water (pCi/L)	Gamma Spec. 6						
	Cs-134	10	<LLD	-	-	<LLD	0
	Cs-137	10	<LLD	-	-	<LLD	0
	Other Gammas	20	<LLD	-	-	<LLD	0

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

TABLE 5.0-4

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY

Name of Facility Quad Cities Nuclear Power Station Docket No. 50-254, 50-265  
 Location of Facility Rock Island, Illinois Reporting Period 2nd Quarter 1995  
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean <sup>a</sup> Range	Location with Highest Quarterly Mean		Control Locations Mean <sup>a</sup> Range	Number of Non-routine Results
				Location	Mean Range		
Air Particulates (pCi/m <sup>3</sup> )	Gross Beta 78	0.01	0.016 (74/78) (0.010-0.034)	Q-01 <sup>b</sup> , Onsite No. 1, 0.5 mi @ 7°	0.016 (13/13) (0.010-0.033)	None	0
	Gamma Spec. 6	0.01	<LLD	-	-	None	0
Airborne Iodine (pCi/m <sup>3</sup> )	I-131 42	0.10	<LLD	-	-	None	0
Gamma Background (TLDs) (mR/Qtr.)	Gamma Dose 94	9.7	15.4 (78/78) (12.8-18.4)	Q-211-2, 5.0 mi @ 220°	18.4 (1/1)	15.6(16/16) (12.7-17.5)	0
Milk (pCi/L)	I-131 20	5.0/0.5 <sup>c</sup>	<LLD	-	-	<LLD	0
Cooling Water (pCi/L)	Gross Beta 26	5	11.2 (7/7) (5.0-27.5)	Q-22, Discharge Canal at Station	11.2 (7/7) (5.0-27.5)	6.1 (5/5) (5.0-7.8)	1
Public Water (pCi/L)	Gamma Spec. 6						
	Cs-134	10	<LLD	-	-	<LLD	0
	Cs-137	10	<LLD	-	-	<LLD	0
	Other Gammas	20	<LLD	-	-	<LLD	0
Fish (pCi/g wet)	Gamma Spec. 13						
	Cs-134	0.1	<LLD	-	-	None	0
	Cs-137	0.1	<LLD	-	-	None	0
	Other Gammas	0.2	<LLD	-	-	None	0

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

<sup>b</sup> Locations Q-01, Q-02, Q-05 and Q-06 had identical means of 0.016 pCi/m<sup>3</sup>. Only Q-01 is detailed in this summary.

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

TABLE 5.0-5

## 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 1995  
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean <sup>a</sup> Range	Location with Highest Quarterly Mean		Control Locations Mean <sup>a</sup> Range	Number of Non-routine Results
				Location	Mean Range		
Air Particulates (pCi/m <sup>3</sup> )	Gross Beta 75	0.01	0.023 (74/75) (0.012-0.041)	Q-04, Nitrin, 1.5 mi @ 40°	0.025 (13/13) (0.012-0.041)	None	0
	Gamma Spec. 6	0.01	<LLD	-	-	None	0
Airborne Iodine (pCi/m <sup>3</sup> )	I-131 35	0.10	<LLD	-	-	None	0
Gamma Background (TLDs) (mR/Qtr)	Gamma Dose 94	9.7	15.7 (78/78) (13.3-19.0)	Q-201-1, 4.0 mi @ 356°	19.0 (1/1)	15.6 (16/16) (12.6-18.3)	0
Milk (pCi/L)	I-131 29	0.5	<LLD	-	-	<LLD	0
Cooling Water (pCi/L)	Gross Beta 26	5	5.2 (3/3) (5.0-5.4)	Q-21, Intake Canal at Station	5.2 (3/3) (5.0-5.4)	<LLD	0
Public Water (pCi/L)	Gamma Spec. 6						
	Cs-134	10	<LLD	-	-	<LLD	0
	Cs-137	10	<LLD	-	-	<LLD	0
	Other Gammas 20		<LLD	-	-	<LLD	0
Bottom Sediments (pCi/g dry)	Gamma Spec. 2						
	Cs-134	0.2	<LLD	-	-	<LLD	0
	Cs-137	0.2	<LLD	-	-	<LLD	0
	Other Gammas	0.2	<LLD	-	-	<LLD	0

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

**TABLE 5.0-6**  
**RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM QUARTERLY SUMMARY**

Name of Facility Quad Cities Nuclear Power Station      Docket No. 50-254, 50-265  
 Location of Facility Rock Island, Illinois      Reporting Period 4th Quarter 1995  
 (County, State)

Sample Type (Units)	Type and Number of Analyses	LLD	Indicator Locations Mean <sup>a</sup> Range	Location with Highest Quarterly Mean		Control Locations Mean <sup>a</sup> Range	Number of Non-routine Results
				Location	Mean Range		
Air Particulates (pCi/m <sup>3</sup> )	Gross Beta      78	0.01	0.026 (78/78) (0.010-0.039)	Q-06, Fairbanks 18 mi @ 340°	0.027 (13/13) (0.015-0.039)	None	0
	Gamma Spec.      6	0.01	<LLD	-	-	None	0
Airborne Iodine (pCi/m <sup>3</sup> )	I-131      42	0.10	<LLD	-	-	None	0
Gamma Background (TLDs) (mR/Qtr.)	Gamma Dose      94	9.7	15.7 (83/83) (13.7-20.3)	Q-216-2 4.5 mi @ 333°	20.1 (1/1)	15.8 (16/16) (12.9-17.8)	0
Milk (pCi/L)	I-131      13	5.0/0.5 <sup>b</sup>	<LLD	-	-	<LLD	0
Cooling Water (pCi/L)	Gross Beta      26	5	<LLD	-	-	<LLD	0
Public Water (pCi/L)	Gamma Spec.      6						
	Cs-134	10	<LLD	-	-	<LLD	0
	Cs-137	10	<LLD	-	-	<LLD	0
	Other Gammas	20	<LLD	-	-	<LLD	0
Fish (pCi/g wet)	Gamma Spec.      14						
	Cs-134	0.1	<LLD	-	-	None	0
	Cs-137	0.1	<LLD	-	-	None	0
	Other Gammas	0.2	<LLD	-	-	None	0

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

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

TABLE 5.1-1

Commonwealth Edison Company

Date: 1-FEB-96

Environmental Site Report for Quad Cities

Page: 1

Gamma Radiation Measured in mR by TLDs

Site	Description	Quarter 1 1995	Quarter 2 1995	Quarter 3 1995	Quarter 4 1995
<b>I. INDICATOR LOCATIONS</b>					
<b>a. Air Samplers (2 TLDs per location)</b>					
Q-01	ONSITE NO.1	14.4	14.4	15.4	16.2
Q-02	ONSITE NO.2	13.6	14.4	14.8	14.9
Q-03	ONSITE NO.3	13.4	14.1	14.8	14.8
Q-04	NITRIN	12.7	14.0	13.9	13.6
Q-05	SADDLE CLUB	14.0	14.9	15.6	15.6
Q-06	FAIRBANKS	15.3	15.4	17.9	16.5
Q-13	PRINCETON	13.9	14.8	14.7	14.8
Q-16	LOW MOOR	13.6	14.2	16.0	14.9
Air Sampler Mean ± S.D.		13.9 ± 0.8	14.6 ± 0.4	15.2 ± 1.2	15.1 ± 0.9
Annual Air Sampler Mean ± S.D.		14.7 ± 1.0			

**b. Inner Ring (100 Series)**

Q-101-1	13.6	14.0	13.5	14.5
Q-101-2	13.8	14.3	14.7	15.5
Q-102-1	15.2	16.4	16.0	16.1
Q-102-2	14.5	15.2	15.0	15.0
Q-103-1	13.7	13.7	14.2	14.3
Q-103-2	13.3	13.5	14.5	14.3
Q-104-1	13.7	14.1	14.1	14.3
Q-104-2	13.0	14.4	14.4	14.3
Q-105-1	13.9	13.9	14.3	14.3
Q-105-2	13.9	13.8	14.1	14.3
Q-106-1	13.1	13.8	14.1	14.3
Q-106-2	13.3	14.0	14.7	14.8
Q-107-1	13.0	14.4	14.2	15.4
Q-107-2	13.0	14.4	14.2	14.6
Q-108-1	14.4	14.4	13.5	14.3
Q-108-2	14.4	14.1	13.7	14.3
Q-109-1	14.4	14.3	14.7	15.1
Q-109-2	14.4	14.3	14.4	14.5
Q-111-1	15.0	16.7	15.5	14.5
Q-111-2	15.0	16.7	16.7	16.6
Q-112-1	14.4	15.1	15.5	15.3
Q-112-2	14.4	14.3	14.3	14.8
Q-113-1	15.8	16.0	16.0	15.9
Q-113-2	14.4	14.5	14.5	16.6
Q-114-1	13.6	14.1	14.1	13.7
Q-114-2	12.6	12.8	13.5	13.7



TABLE 5.1-1 (continued)

Date: 1-FEB-96

Environmental Site Report for Quad Cities

Page: 2

Site	Description	Quarter 1 1995	Quarter 2 1995	Quarter 3 1995	Quarter 4 1995
b. Inner Ring (100 Series)					
Q-114-2		14.1	15.9	16.6	17.1
Q-115-1		12.6	14.5	14.1	14.9
Q-115-2		14.1	16.2	15.3	16.0
Q-116-1		13.8	15.8	15.5	15.4
Q-116-2		14.9	15.2	16.1	16.3
Inner Ring Mean ± S.D.		13.6 ± 0.7	14.7 ± 1.1	14.8 ± 0.9	15.1 ± 0.9
Annual Inner Ring Mean ± S.D.		14.5 ± 1.1			

Site	Description	Quarter 1 1995	Quarter 2 1995	Quarter 3 1995	Quarter 4 1995
c. Outer Ring (200 Series)					
Q-201-1		14.7	16.0	19.0	17.0
Q-201-2		14.6	16.0	16.2	14.4
Q-202-1		13.3	13.7	16.3	17.2
Q-202-2		13.3	13.7	13.6	14.5
Q-203-1		15.4	19.4	14.9	15.4
Q-203-2		16.5	16.6	18.6	17.3
Q-204-1		18.8	17.3	17.5	16.0
Q-204-2		15.9	16.8	17.6	17.0
Q-205-1		14.9	16.4	16.7	17.1
Q-205-4		15.8	17.5	17.6	18.5
Q-206-1		13.3	13.3	15.4	15.3
Q-206-2		14.3	14.6	15.5	15.0
Q-207-1		14.6	16.6	16.8	16.1
Q-207-4		14.0	13.7	16.1	15.1
Q-208-1		14.0	15.7	16.7	16.1
Q-208-2		15.1	17.1	17.5	17.3
Q-209-1		14.9	16.0	16.1	15.9
Q-209-4		13.8	13.9	16.2	16.3
Q-210-1		13.9	13.7	16.1	16.3
Q-210-4		14.6	16.5	16.4	15.9
Q-211-1		17.8	18.1	18.2	17.3
Q-211-2		17.4	18.4	18.6	16.7
Q-212-1		14.9	15.9	18.0	15.9
Q-212-2		13.4	14.6	15.3	15.2
Q-213-1		13.6	14.9	14.9	15.0
Q-213-2		12.7	13.5	13.6	14.1
Q-214-1		16.0	17.3	17.8	17.7
Q-214-2		15.1	17.7	17.1	18.7
Q-215-1		15.4	16.9	17.3	18.7
Q-215-2		15.7	18.2	17.7	18.2
Q-216-1		15.5	16.4	17.1	16.9
Q-216-2		7.1	17.6	17.2	20.3
Outer Ring Mean ± S.D.		15.0 ± 1.5	16.3 ± 1.2	16.7 ± 1.3	16.8 ± 1.6
Annual Outer Ring Mean ± S.D.		16.2 ± 1.6			
INDICATOR LOCATION MEAN ± S.D.		14.3 ± 1.3	15.4 ± 1.4	15.7 ± 1.5	15.9 ± 1.5
Annual INDICATOR LOCATION MEAN ± S.D.		15.3 ± 1.5			

II. CONTROL LOCATIONS (2 TLDs per location)

Site	Description	Quarter 1 1995	Quarter 2 1995	Quarter 3 1995	Quarter 4 1995
Q-07	CLINTON	13.2	14.3	14.5	14.4
Q-08	SILVEMA FARM	14.3	15.7	15.3	15.0
Q-09	ERIE	14.1	16.4	15.3	15.9
Q-10	HILLSDALE	14.6	17.1	16.1	16.6
Q-11	FORT BYRON	15.1	17.3	17.7	17.8
Q-12	BETTENDORF	16.2	17.5	18.3	17.6
Q-14	PIONEER VILLAGE	14.1 #	14.9 #	14.6	15.3
Q-15	DEWITT	12.0	12.7	12.6	12.9 #
CONTROL LOCATION Mean ± S.D.		14.4 ± 1.4	15.6 ± 1.6	15.6 ± 1.8	15.8 ± 1.6
Annual CONTROL LOCATION Mean ± S.D.		15.3 ± 1.6			

III. SPECIAL INTEREST LOCATIONS (1 TLD per location)

Site	Description	Quarter 1 1995	Quarter 2 1995	Quarter 3 1995	Quarter 4 1995
Q-301-1	PUBLIC OBSERVATION TOWER	32.6	29.8 e	32.1	35.7
Q-302-1	VISITORS CENTER	31.1	27.6	29.6	33.3
Q-302-2	FIRE TRAINING BUILDING	13.8	14.4	14.7	14.5
Q-302-3	SIMULATOR BUILDING	19.1	17.7	19.5	21.9
Q-305-3	WAREHOUSE ON UPPER ACCESS ROAD	22.7	25.4	26.4	24.3
Q-307-1	NORTH OF DAW	30.8	31.8	48.2	23.0
Q-307-2	EAST OF DAW	155.0	201.5	227.4	109.7
Q-307-3	SOUTH OF DAW	379.9	366.2	341.7 #	171.5
Q-307-4	WEST OF DAW	105.3	114.3	149.8 #	66.5
Q-307-5	TELEPHONE POLE/SOUTHEAST OF DAW	310.8	295.8	297.9 #	146.3
Q-310-1	RESTRICTED AREA FENCE/WEST OF DAW	15.5	16.9	17.4	17.3
SPECIAL INTEREST LOCATION Mean ± S.D.		101.5 ±****	103.8 ±****	115.0 ±****	60.4 ±56.4
Annual SPECIAL INTEREST LOCATION Mean ± S.D.		95.2 ±****			

COMMENTS: "\*" Indicates lost dosimeter. A portion of the Dose was estimated.  
 "#" Indicates edited dosimeter. The original Dose was replaced with an estimated value.

APPENDIX II

METEOROLOGICAL DATA

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 1995

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	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	3	0	3
SSE	0	0	2	0	0	0	2
S	0	0	0	2	2	0	4
SSW	0	0	0	0	0	0	0
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	1	1	0	0	2
WNW	0	0	1	0	0	0	1
NW	0	0	1	2	0	0	3
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	0	5	5	5	0	15

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: 14

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 1995

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	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	1	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	0	4	0	0	0	4
SE	0	0	0	4	1	0	5
SSE	0	0	3	1	1	0	5
S	0	0	0	1	1	0	2
SSW	0	0	0	2	2	0	4
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	3	1	0	4
WNW	0	0	0	0	0	0	0
NW	0	0	4	2	0	0	6
NNW	0	0	0	3	0	0	3
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	0	12	16	6	0	34

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 0  
 Hours of missing stability measurements in all stability classes: 14

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 1995

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	0	1	0	0	0	1
NNE	0	1	0	0	0	0	1
NE	0	0	1	0	0	0	1
ENE	0	0	1	0	0	0	1
E	0	0	3	0	1	1	5
ESE	0	0	3	2	0	0	5
SE	0	0	1	2	0	0	3
SSE	0	0	1	0	0	0	1
S	0	0	0	1	0	1	2
SSW	0	2	4	3	3	1	13
SW	0	0	1	0	0	0	1
WSW	0	1	6	0	0	0	7
W	0	0	3	7	6	0	16
WNW	0	1	3	5	0	0	9
NW	0	1	8	7	2	0	18
NNW	0	3	2	5	0	0	10
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	9	38	32	12	3	94

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 2  
 Hours of missing stability measurements in all stability classes: 14



QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 1995

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	11	14	29	4	2	62
NNE	0	7	16	10	0	0	33
NE	2	10	3	1	6	0	22
ENE	0	7	7	13	17	4	48
E	0	14	22	11	11	3	61
ESE	3	9	30	21	7	3	73
SE	0	8	8	21	17	5	59
SSE	2	2	5	4	13	2	28
S	1	4	6	17	1	2	31
SSW	1	10	4	10	6	3	34
SW	2	3	17	11	4	1	38
WSW	0	16	40	30	5	0	91
W	1	13	38	68	15	5	140
WNW	0	13	75	86	46	26	246
NW	2	24	52	51	45	11	185
NNW	0	22	36	21	14	0	93
VARIABLE	0	0	0	0	0	0	0
TOTAL	16	173	373	404	211	67	1244

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 60  
 Hours of missing stability measurements in all stability classes: 14

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 1995

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	4	3	8	3	0	0	18
NNE	3	5	10	5	0	0	23
NE	2	3	2	8	1	0	16
ENE	1	3	9	9	3	0	25
E	2	4	15	7	2	0	30
ESE	0	2	8	19	9	6	44
SE	0	3	4	3	1	0	11
SSE	0	2	4	12	5	0	23
S	0	1	3	20	12	1	37
SSW	1	1	7	11	11	0	31
SW	0	1	6	17	3	0	27
WSW	2	4	6	10	8	0	30
W	0	3	13	17	0	0	33
WNW	0	3	16	40	2	0	61
NW	1	2	8	15	0	0	26
NNW	0	8	9	8	0	0	25
VARIABLE	0	0	0	0	0	0	0
TOTAL	16	48	128	204	57	7	460

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: 14

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 1995

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	5	4	0	0	0	9
NNE	1	1	4	2	0	0	8
NE	0	2	2	5	0	0	9
ENE	0	1	1	2	0	0	4
E	0	1	3	0	0	0	4
ESE	1	2	5	8	4	0	20
SE	0	2	4	2	0	0	8
SSE	0	1	4	10	8	0	23
S	0	4	7	22	1	0	34
SSW	0	1	8	7	4	0	20
SW	0	1	7	2	0	0	10
WSW	0	0	1	0	0	0	1
W	0	0	2	0	0	0	2
WNW	0	0	3	1	0	0	4
NW	0	3	3	2	0	0	8
NNW	1	0	5	0	0	0	6
VARIABLE	0	0	0	0	0	0	0
TOTAL	3	24	63	63	17	0	170

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: 14

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JANUARY-MARCH 1995

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	0	0	0	0	2
NNE	1	3	0	0	0	0	4
NE	0	0	1	4	0	0	5
ENE	1	1	0	0	0	0	2
E	1	1	0	0	0	0	2
ESE	0	1	0	1	2	0	4
SE	0	1	7	4	0	0	12
SSE	1	1	7	5	1	0	15
S	2	0	3	2	0	0	7
SSW	0	3	0	4	0	0	7
SW	0	4	0	0	0	0	4
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	0	0	0	0	0
NW	0	1	0	0	0	0	1
NNW	0	2	0	0	0	0	2
VARIABLE	0	0	0	0	0	0	0
TOTAL	6	20	18	20	3	0	67

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: 14

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 1995

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	1	0	0	0	1
NNE	0	0	3	7	0	0	10
NE	0	0	3	1	0	0	4
ENE	0	0	1	1	0	0	2
E	0	0	0	0	0	0	0
ESE	0	0	0	0	1	0	1
SE	0	0	1	4	0	0	5
SSE	0	0	0	5	5	0	10
S	0	0	1	8	4	1	14
SSW	0	0	3	3	1	0	7
SW	0	0	0	1	0	0	1
WSW	0	0	3	0	1	0	4
W	0	0	4	3	1	0	8
WNW	0	0	1	12	2	0	15
NW	0	0	3	14	0	0	17
NNW	0	0	0	3	0	0	3
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	0	24	62	15	1	102

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: 20



QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 1995

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	2	0	0	0	2
NNE	0	2	5	2	0	0	9
NE	0	0	5	4	0	0	9
ENE	0	0	1	0	0	0	1
E	0	0	0	1	0	0	1
ESE	0	0	1	3	5	0	9
SE	0	1	2	0	1	0	4
SSE	0	1	2	1	0	0	4
S	0	0	3	1	2	0	6
SSW	0	0	8	3	1	0	12
SW	0	1	7	1	0	0	9
WSW	0	3	5	2	0	0	10
W	0	7	8	5	4	0	24
WNW	0	4	5	5	10	1	25
NW	0	0	6	1	0	0	7
NNW	0	1	3	3	0	0	7
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	20	63	32	23	1	139

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: 20

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 1995

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	2	5	0	0	0	7
NNE	0	1	4	3	0	0	8
NE	0	0	9	7	1	0	17
ENE	0	1	1	6	1	2	11
E	0	0	1	2	1	0	4
ESE	0	2	5	2	7	2	18
SE	0	0	3	2	1	0	6
SSE	0	4	0	1	1	0	6
S	0	2	4	1	0	1	8
SSW	0	0	6	0	2	0	8
SW	0	1	6	0	0	0	7
WSW	0	2	1	1	1	0	5
W	0	5	3	7	2	0	17
WNW	0	4	3	3	5	2	17
NW	0	3	1	3	0	0	7
NNW	0	2	2	1	0	0	5
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	29	54	39	22	7	151

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: 20

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 1995

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	5	4	9	15	0	0	33
NNE	0	9	22	17	1	0	49
NE	1	15	35	20	9	6	86
ENE	0	12	35	29	14	13	103
E	0	11	20	37	12	2	82
ESE	1	8	12	21	31	15	88
SE	1	5	10	5	8	3	32
SSE	2	10	8	5	4	1	30
S	4	7	6	7	5	1	30
SSW	0	12	22	16	6	3	59
SW	3	12	12	12	16	5	60
WSW	1	4	5	15	17	4	46
W	3	13	13	21	23	10	83
WNW	1	12	18	23	13	2	69
NW	0	9	15	19	13	10	66
NNW	1	2	7	14	0	0	24
VARIABLE	0	0	0	0	0	0	0
TOTAL	23	145	249	276	172	75	940

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: 20

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 1995

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	3	20	9	0	0	33
NNE	0	6	8	11	0	0	25
NE	1	7	11	11	1	0	31
ENE	0	7	11	5	0	0	23
E	2	15	17	15	9	1	59
ESE	1	8	19	15	6	7	56
SE	3	5	9	17	6	2	42
SSE	1	3	2	12	1	0	19
S	2	4	8	22	2	4	42
SSW	0	5	13	16	4	2	40
SW	5	3	11	12	13	0	44
WSW	1	0	12	14	1	1	29
W	1	3	13	7	0	0	24
WNW	1	6	12	25	1	0	45
NW	1	3	11	22	1	0	38
NNW	2	2	7	10	0	0	21
VARIABLE	0	0	0	0	0	0	0
TOTAL	22	80	184	223	45	17	571

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 2  
 Hours of missing stability measurements in all stability classes: 20

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 1995

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	1	3	3	3	0	0	10
NNE	2	1	3	4	0	0	10
NE	1	5	2	2	2	0	12
ENE	0	3	0	1	0	0	4
E	0	5	1	0	0	0	6
ESE	0	4	6	5	0	0	15
SE	0	3	5	8	0	0	16
SSE	1	3	9	10	0	0	23
S	0	3	8	7	0	0	18
SSW	2	0	6	3	0	0	11
SW	0	4	4	1	1	0	10
WSW	1	5	4	6	0	0	16
W	0	3	8	6	0	0	17
WNW	0	1	6	9	2	0	18
NW	0	2	2	0	0	0	4
NNW	0	2	4	5	0	0	11
VARIABLE	0	0	0	0	0	0	0
TOTAL	8	47	71	70	5	0	201

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: 20



QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: APRIL-JUNE 1995

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	3	0	1	0	0	4
NNE	0	0	0	2	0	0	2
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	1	1	0	0	0	2
ESE	0	0	1	0	0	0	1
SE	0	0	1	2	0	0	3
SSE	0	0	1	3	0	0	4
S	0	0	4	0	0	0	4
SSW	0	0	5	1	0	0	6
SW	0	1	2	0	0	0	3
WSW	0	0	0	0	0	0	0
W	0	1	0	3	0	0	4
WNW	0	1	3	2	0	0	6
NW	1	0	4	2	0	0	7
NNW	0	1	2	0	0	0	3
VARIABLE	0	0	0	0	0	0	0
TOTAL	1	9	24	16	0	0	50

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

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JULY-SEPTEMBER 1995

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	3	3	0	0	6
NNE	0	0	7	0	0	0	7
NE	0	0	2	0	0	0	2
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	2	0	0	0	2
SSE	0	0	1	2	2	0	5
S	0	0	2	1	0	0	3
SSW	0	0	4	7	0	0	11
SW	0	1	0	0	0	0	1
WSW	0	0	1	1	0	0	2
W	0	0	3	2	0	0	5
WNW	0	0	1	12	2	0	15
NW	0	0	9	2	0	0	11
NNW	0	0	1	3	0	0	4
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	1	36	33	4	0	74

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: JULY-SEPTEMBER 1995

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	10-18	19-24	> 24	
N	0	4	4	2	0	0	10
NNE	0	1	7	2	0	0	10
NE	0	2	2	1	0	0	5
ENE	0	0	2	0	0	0	2
E	0	0	3	0	0	0	3
ESE	0	0	0	1	0	0	1
SE	0	0	5	2	0	0	7
SSE	0	0	11	5	1	0	17
S	0	3	6	3	0	0	12
SSW	0	5	13	8	1	0	27
SW	0	1	8	0	0	0	9
WSW	1	0	5	3	0	0	9
W	0	1	3	3	0	0	7
WNW	0	3	10	5	2	0	20
NW	0	5	2	7	0	0	14
NNW	0	3	5	0	0	0	8
VARIABLE	0	0	0	0	0	0	0
TOTAL	1	28	86	42	4	0	161

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: JULY-SEPTEMBER 1995

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	5	1	0	0	0	6
NNE	0	1	0	1	0	0	2
NE	0	1	1	1	0	0	3
ENE	0	0	3	0	0	0	3
E	0	0	1	0	0	0	1
ESE	0	1	1	0	0	0	2
SE	0	6	12	2	0	0	20
SSE	0	7	10	4	1	0	22
S	0	2	6	1	1	0	10
SSW	0	10	25	5	0	0	40
SW	0	4	6	1	0	0	11
WSW	0	4	10	3	1	0	18
W	0	0	2	0	2	3	7
WNW	0	4	4	3	0	0	11
NW	0	2	3	1	0	0	6
NNW	0	5	4	1	0	0	10
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	52	89	23	5	3	172

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: JULY-SEPTEMBER 1995

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	4	17	32	1	0	55
NNE	1	4	7	13	0	0	25
NE	0	1	6	5	9	2	23
ENE	1	3	5	0	0	0	9
E	1	11	10	1	0	1	24
ESE	1	16	18	1	1	0	37
SE	0	14	28	5	1	0	48
SSE	0	8	21	11	6	0	46
S	3	13	18	9	5	6	54
SSW	3	30	30	26	7	0	96
SW	3	18	29	20	0	0	70
WSW	4	13	20	4	4	0	45
W	3	9	7	6	1	3	29
WNW	3	7	12	17	1	0	40
NW	0	11	5	3	0	0	19
NNW	0	8	9	13	1	0	31
VARIABLE	0	0	0	0	0	0	0
TOTAL	24	170	242	166	37	12	651

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



QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: JULY-SEPTEMBER 1995

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	13	11	1	0	28
NNE	1	2	2	4	0	0	9
NE	0	4	7	0	0	0	11
ENE	1	4	2	2	0	0	9
E	3	4	6	2	0	0	15
ESE	0	4	21	16	0	0	41
SE	0	4	17	21	3	2	47
SSE	0	3	21	20	5	2	51
S	1	7	22	22	12	3	67
SSW	2	10	23	31	10	2	78
SW	3	16	24	46	7	0	96
WSW	1	7	9	23	2	0	42
W	2	7	17	15	2	0	43
WNW	0	9	7	16	4	0	36
NW	1	2	7	7	0	0	17
NNW	2	4	14	3	0	0	23
VARIABLE	0	0	0	0	0	0	0
TOTAL	17	90	212	239	46	9	613

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: JULY-SEPTEMBER 1995

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	4	4	5	0	0	13
NNE	0	3	5	4	0	0	12
NE	0	5	7	2	0	0	14
ENE	3	3	6	2	0	0	14
E	0	4	2	1	0	0	7
ESE	1	3	13	21	2	0	40
SE	0	3	9	13	2	0	27
SSE	0	6	22	17	3	0	48
S	2	7	22	30	0	0	61
SSW	0	6	28	25	1	0	60
SW	0	10	25	12	2	0	49
WSW	0	3	9	1	0	0	13
W	1	4	5	1	0	0	11
WNW	1	0	4	3	0	0	8
NW	0	3	1	2	1	0	7
NNW	1	5	2	1	1	0	10
VARIABLE	0	0	0	0	0	0	0
TOTAL	9	69	164	140	12	0	394

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: JULY-SEPTEMBER 1995

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	4	2	0	0	6
NNE	0	3	2	1	0	0	6
NE	0	1	4	1	0	0	6
ENE	0	3	2	0	0	0	5
E	0	0	1	3	0	0	4
ESE	0	3	7	3	0	0	13
SE	1	1	4	7	0	0	13
SSE	0	1	9	12	0	0	22
S	0	5	9	6	0	0	20
SSW	0	1	11	2	0	0	14
SW	0	3	4	2	0	0	9
WSW	0	4	3	1	0	0	8
W	1	2	3	0	0	0	6
WNW	0	0	3	1	1	0	5
NW	0	0	0	0	0	0	0
NNW	1	0	2	2	0	0	5
VARIABLE	0	0	0	0	0	0	0
TOTAL	3	27	68	43	1	0	142

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 1995

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	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	2	0	0	2
SSW	0	0	2	4	0	0	6
SW	0	0	0	0	0	0	0
WSW	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0
WNW	0	0	2	1	0	0	3
NW	0	0	0	0	0	0	0
NNW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	0	4	7	0	0	11

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: 42

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 1995

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	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	1	0	0	0	1
ESE	0	0	4	0	0	0	4
SE	0	0	0	0	0	0	0
SSE	0	0	1	2	0	0	3
S	0	0	2	1	1	0	4
SSW	0	0	2	2	3	0	7
SW	0	0	0	0	2	0	2
WSW	0	0	0	0	1	0	1
W	0	0	6	0	1	0	7
WNW	0	0	3	5	0	0	8
NW	0	0	0	4	1	0	5
NNW	0	0	5	0	0	0	5
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	0	24	14	9	0	47

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: 42



QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 1995

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	0	1	0	0	0	1
NNE	0	0	1	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	0	0	2	0	0	0	2
E	0	0	1	0	0	0	1
ESE	0	2	2	0	0	0	4
SE	0	0	0	2	0	0	2
SSE	0	0	2	2	0	0	4
S	0	1	1	2	0	0	4
SSW	0	2	6	4	0	1	13
SW	0	1	0	0	2	0	3
WSW	0	0	0	0	1	0	1
W	0	1	2	2	6	0	11
WNW	0	0	6	8	5	0	19
NW	0	1	4	5	3	0	13
NNW	0	0	4	0	0	0	4
VARIABLE	0	0	0	0	0	0	0
TOTAL	0	8	32	25	17	1	83

Hours of calm in this stability class: 0  
 Hours of missing wind measurements in this stability class: 0  
 Hours of missing stability measurements in all stability classes: 42

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 1995

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	11	15	8	2	3	41
NNE	1	4	8	8	7	3	31
NE	1	6	17	14	11	13	62
ENE	2	6	17	36	19	1	81
E	0	9	10	22	5	0	46
ESE	2	3	10	6	8	0	29
SE	2	2	9	9	5	0	27
SSE	1	8	14	16	11	9	59
S	1	2	7	15	14	1	40
SSW	3	8	6	12	10	2	41
SW	3	8	9	3	4	6	33
WSW	2	4	16	18	15	5	60
W	1	5	15	75	47	25	168
WNW	1	14	30	99	58	44	246
NW	1	15	47	56	23	10	152
NNW	1	16	13	9	7	6	52
VARIABLE	0	0	0	0	0	0	0
TOTAL	24	121	243	406	246	128	1168

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: 42

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 1995

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	1	8	7	0	0	16
NNE	0	2	4	3	0	0	9
NE	0	11	6	1	0	0	18
ENE	0	3	3	7	3	0	16
E	0	7	6	6	1	0	20
ESE	0	3	12	13	4	0	32
SE	1	2	7	23	6	0	39
SSE	1	7	11	20	12	4	55
S	1	2	10	15	15	1	44
SSW	1	3	16	21	20	6	67
SW	2	0	5	8	0	1	16
WSW	1	0	3	15	1	0	20
W	0	7	7	42	9	0	65
WNW	0	4	11	42	4	0	61
NW	0	0	14	37	4	0	55
NNW	2	3	13	5	0	0	23
VARIABLE	0	0	0	0	0	0	0
TOTAL	9	55	136	265	79	12	556

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: 42

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 1995

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	1	2	9	0	0	0	12
NNE	2	8	4	0	0	0	14
NE	2	5	0	0	0	0	7
ENE	0	1	5	1	0	0	7
E	0	1	0	4	0	0	5
ESE	0	2	4	9	1	0	16
SE	1	0	2	15	2	0	20
SSE	1	2	5	7	2	0	17
S	1	2	3	3	4	0	13
SSW	1	0	14	16	0	0	31
SW	0	0	5	4	0	0	9
WSW	0	2	5	8	0	0	15
W	0	5	5	7	0	0	17
WNW	1	2	0	2	0	0	5
NW	0	1	2	10	0	0	13
NNW	0	2	6	2	0	0	10
VARIABLE	0	0	0	0	0	0	0
TOTAL	10	35	69	88	9	0	211

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: 42

QUAD CITIES NUCLEAR POWER STATION

PERIOD OF RECORD: OCTOBER-DECEMBER 1995

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	3	1	0	0	4
NNE	0	1	0	0	0	0	1
NE	2	1	0	0	0	0	3
ENE	0	0	0	0	0	0	0
E	1	0	0	0	0	0	1
ESE	3	3	1	1	1	0	9
SE	0	1	1	1	1	0	4
SSE	2	1	5	5	0	0	13
S	0	0	0	4	1	0	5
SSW	0	2	5	12	0	0	19
SW	1	2	5	3	1	0	12
WSW	0	1	1	2	0	0	4
W	0	1	3	1	0	0	5
WNW	0	0	1	0	0	0	1
NW	0	0	0	2	0	0	2
NNW	1	0	2	4	0	0	7
VARIABLE	0	0	0	0	0	0	0
TOTAL	10	13	27	36	4	0	90

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: 42

APPENDIX III

LISTING OF MISSED SAMPLES



QUAD CITIES

LISTING OF MISSED SAMPLES

Sample Type <sup>a</sup>	Location	Expected Collection Date	Reason
TLD	Q-202-1	04-01-95	Missing from location.
TLD	Q-301-1	06-03-95	Missing from location.
TLD	Q-06-1	07-29-95	Missing from location.
TLD	Q-204-1	08-05-95	Missing from location.
A	Q-02	09-01-95	No electricity.
A/I	Q-02	09-08-95	No electricity.
A	Q-02	09-15-95	No electricity.
TLD	Q-102-1	10-07-95	Missing from location; replaced telephone pole.
TLD	Q-204-1	10-07-95	Missing from location.
TLD	Q-213-2	10-07-95	Missing from location.
M	Q-32	10-13-95	Went out of business in October, 1995.
TLD	Q-108-2	12-02-95	Missing from location; installed a replacement TLD.

Sampling Variances<sup>b</sup>

A	Q-02	02-17-95	Volume estimated; installed new timer.
A	Q-03	02-17-95	Filter light due to leak in sampling train.
A	Q-04	03-31-95	Volume estimated; installed new timer.
A/I	Q-04	04-07-95	Filter light; no discernible reason for anomaly.
A/I	Q-04	04-21-95	Volume low due to pump malfunction; installed spare pump.
A/I	Q-06	07-14-95	Pump malfunction; deposit on air filter extremely light.
A/I	Q-02	08-25-95	Volume low; no electricity.
A/I	Q-02	09-22-95	Volume low; no electricity.
TLD	Q-203-2	12-02-95	TLD bottle found on ground; reattached bottle to pole.

<sup>a</sup> A/I= Air Particulate (Filter)/Iodine (Cartidge)

<sup>b</sup> Sampling Variances are samples which have not been missed but indicate unusual sample results or factors which contribute to sample anomalies.

APPENDIX IV

MILCH ANIMALS, NEAREST LIVESTOCK, AND  
NEAREST RESIDENCES CENSUS

## QUAD CITIES

### MILCH ANIMALS CENSUS, 1995

A. There are four dairy farms within a 6.5 mile radius of Quad Cities Station.

B. Sampling Locations

Q-18 Musal Dairy Farm  
6.0 miles @ 240°  
  
Number of cows - 90  
  
Diet consists of: 40% pasture  
60% hay, silage and supplement

Q-32 Dean Havill Farm<sup>a</sup>  
9.7 miles @ 214°  
  
Number of cows - 60  
  
Diet consists of: 10% pasture  
90% hay, silage and supplement

Q-26 Bill Stanley Dairy  
3.5 miles @ 120°  
  
Number of cows - 24  
  
Diet consists of: hay, grain, and supplement

Julie DePauw<sup>a</sup>  
6.3 miles @ 135°  
  
Number of cows - 100  
  
Diet consists of: 10% pasture  
90% chop and feed

Carl Otte<sup>b</sup>  
6.0 miles @ 275°  
  
Number of cows - No Data Available  
  
Diet consists of: No Data Available

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<sup>a</sup> Dean Havill Farm was added to the program in September 1995 and went out of business in October 1995.

<sup>b</sup> Non-participating.

Census conducted by G. Kreuder on August 28 and 29, 1995.

## QUAD CITIES

### NEAREST LIVESTOCK CENSUS, 1995

Nearest livestock of the Quad Cities Station within a 6.5 mile radius.

<u>Sector</u>	<u>Direction</u>	<u>Distance</u>
A	N	2.5 miles
B	NNE	None
C	NE	None
D	ENE	3.0 miles
E	E	3.0 miles
F	ESE	3.1 miles
G	SE	None
H	SSE	3.5 miles
J	S	1.5 miles
K	SSW	None
L	SW	3.5 miles
M	WSW	4.5 miles
N	W	4.5 miles
P	WNW	3.5 miles
Q	NW	4.5 miles
R	NNW	2.3 miles

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Census conducted by G. Kreuder on August 28 and 29, 1995.

## QUAD CITIES

### NEAREST RESIDENCE CENSUS, 1995

Nearest resident of the Quad Cities Station within a 6.5 mile radius.

<u>Sector</u>	<u>Direction</u>	<u>Distance</u>
A	N	0.5 miles
B	NNE	0.8 miles
C	NE	2.8 miles
D	ENE	1.3 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	1.8 miles

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Census conducted by G. Kreuder on August 28 and 29, 1995.

APPENDIX V

INTERLABORATORY COMPARISON PROGRAM RESULTS



## Appendix V

### Interlaboratory Comparison Program Results

Teledyne Brown Engineering Environmental Services, Midwest Laboratory (formerly Teledyne Isotopes and Hazelton Environmental Services) 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 A-1 were obtained through participation in the environmental sample crosscheck program for milk, water, air filters, and food samples during the current year. This program is conducted by the U.S. Environmental Protection Agency Intercomparison and Calibration Section, Quality Assurance Branch, Environmental Monitoring and Support Laboratory, Las Vegas, Nevada.

Table A-2 lists results of the analyses on in-house "spiked" samples.

Table A-3 lists results of the in-house "blank" samples.

Table A-4 lists results of the in-house "duplicate" program.

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

Table A-1. U.S. Environmental Protection Agency's crosscheck program, comparison of EPA and Teledyne Brown Engineering Environmental Services, Midwest Laboratory results for various sample media<sup>a</sup>.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in pCi/L <sup>b</sup>		
				EPA Result <sup>c</sup> 1s, N=1	Control Limits	TBEESML Results ± 2 Sigma <sup>d</sup>
STW-723	Water	Jan, 1995	Sr-89	20.0 ± 5.0	11.3 - 28.7	17.7 ± 1.5; 2.3
STW-723	Water	Jan, 1995	Sr-90	15.0 ± 5.0	6.3 - 23.7	13.7 ± 0.6; 1.5
STW-724	Water	Jan, 1995	Gr. Alpha	5.0 ± 5.0	0.0 - 13.7	4.3 ± 0.6; 0.8
STW-724	Water	Jan, 1995	Gr. Beta	5.0 ± 5.0	0.0 - 13.7	4.7 ± 0.6; 0.9
STW-725	Water	Feb, 1995	I-131	100.0 ± 10.0	82.7 - 117.3	99.0 ± 4.4; 10.8
STW-726	Water	Feb, 1995	Ra-226	19.1 ± 2.9	14.1 - 24.1	19.2 ± 0.4; 2.0
STW-726	Water	Feb, 1995	Ra-228	20.0 ± 5.0	11.3 - 28.7	19.2 ± 2.0; 2.8
STW-726	Water	Feb, 1995	Uranium	25.5 ± 3.0	20.3 - 30.7	24.9 ± 0.2; 2.5
STW-727	Water	Mar, 1995	H-3	7435.0 ± 744.0	6144.2 - 8725.8	7460.0 ± 87.2; 1018.3
STW-728	Water	Mar, 1995	Pu-239	11.1 ± 1.1	9.2 - 13.0	11.0 ± 0.6; 1.3
STW-729	Water	Apr, 1995	Gr. Alpha	47.5 ± 11.9	26.9 - 68.1	41.7 ± 0.6; 5.1
STW-729	Water	Apr, 1995	Ra-226	14.9 ± 2.2	11.1 - 18.7	13.4 ± 0.5; 1.4
STW-729	Water	Apr, 1995	Ra-228	15.8 ± 4.0	8.9 - 22.7	13.1 ± 2.4; 2.8
STW-729	Water	Apr, 1995	Uranium	10.0 ± 3.0	4.8 - 15.2	9.5 ± 0.6; 1.1
STW-730	Water	Apr, 1995	Co-60	29.0 ± 5.0	20.3 - 37.7	29.0 ± 1.7; 4.5
STW-730	Water	Apr, 1995	Cs-134	20.0 ± 5.0	11.3 - 28.7	17.3 ± 1.2; 2.7
STW-730	Water	Apr, 1995	Cs-137	11.0 ± 5.0	2.3 - 19.7	11.0 ± 1.0; 1.9
STW-730	Water	Apr, 1995	Gr. Beta	86.6 ± 10.0	69.3 - 103.9	74.8 ± 3.2; 11.9
STW-730	Water	Apr, 1995	Sr-89	20.0 ± 5.0	11.3 - 28.7	17.0 ± 0.0; 1.7
STW-730	Water	Apr, 1995	Sr-90	15.0 ± 5.0	6.3 - 23.7	12.7 ± 1.2; 1.7
STW-732	Water	Jun, 1995	Ra-226	14.8 ± 2.2	11.0 - 18.6	14.7 ± 0.3; 1.5
STW-732	Water	Jun, 1995	Ra-228	15.0 ± 3.8	8.4 - 21.6	11.9 ± 0.6; 1.4
STW-732	Water	Jun, 1995	Uranium	15.2 ± 3.0	10.0 - 20.4	13.9 ± 0.3; 1.4
STW-735	Water	Jul, 1995	Gr. Alpha	27.5 ± 6.9	15.5 - 39.5	16.4 ± 2.4; 3.1
STW-735	Water	Jul, 1995	Gr. Beta	19.4 ± 5.0	10.7 - 28.1	16.8 ± 1.0; 2.8
STW-736	Water	Aug, 1995	H-3	4872.0 ± 487.0	4027.1 - 5716.9	4773.7 ± 49.9; 651.1

Table A-1. U.S. Environmental Protection Agency's crosscheck program, comparison of EPA and Teledyne Brown Engineering Environmental Services, Midwest Laboratory results for various sample media<sup>a</sup>.

Lab Code	Sample Type	Date Collected	Analysis	Concentration in pCi/L <sup>b</sup>		
				EPA Result <sup>c</sup> 1s, N=1	Control Limits	TBEESML Results $\pm 2$ Sigma <sup>d</sup>

<sup>a</sup> Results obtained by Teledyne Brown Engineering Environmental Services Midwest Laboratory as a participant in the environmental sample crosscheck program operated by the Intercomparison and Calibration Section, Quality Assurance Branch, Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency (EPA), Las Vegas, Nevada.

<sup>b</sup> 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; and food products, which are in mg/Kg.

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

<sup>d</sup> Unless otherwise indicated, the TBEESML results are given as the mean  $\pm 2$  standard deviations for three determinations. The numbers after the semi-colon are the Total Propagated Uncertainty of the result.

Table A-2. In-house "spike" samples.

Lab Code	Sample Type	Date Collected	Analysis	Accepted Rejected	Known Activity	Concentration in pCi/L <sup>a</sup>	
						Control Limits <sup>b</sup>	TBEESML Results 2s, n=1 <sup>c</sup>
SPMI-205	Milk	Jan, 1995	Cs-137	A	49.4	35.4 - 63.4	51.2 ± 7.5; 9.1
SPMI-205	Milk	Jan, 1995	Sr-89	A	23.1	16.9 - 29.4	19.4 ± 3.4; 3.9
SPMI-205	Milk	Jan, 1995	Sr-90	A	28.1	22.4 - 33.9	26.2 ± 1.3; 2.9
SPAP-284	Air Filter	Jan, 1995	Cs-137	A	1.9	1.5 - 2.3	2.2 ± 0.0; 0.2
SPAP-284	Air Filter	Jan, 1995	I-131(g)	A	1.9	1.5 - 2.3	2.2 ± 0.0; 0.2
SPW-286	Water	Jan, 1995	H-3	A	40871.0	29852.0 - 51890.0	40929.9 ± 5594.5; 6931.9
SPW-289	Water	Jan, 1995	Co-60	A	247.5	194.0 - 301.0	250.5 ± 14.1; 28.7
SPW-289	Water	Jan, 1995	Cs-134	A	321.3	256.7 - 385.9	290.5 ± 14.4; 32.4
SPW-289	Water	Jan, 1995	Cs-137	A	394.3	310.7 - 477.9	387.7 ± 21.2; 44.2
SPAP-408	Air Filter	Jan, 1995	Gr. Beta	A	8.1	6.6 - 9.7	7.5 ± 0.0; 0.7
SPMI-707	Milk	Jan, 1995	I-131	A	86.0	69.3 - 102.7	80.3 ± 1.4; 8.1
SPMI-707	Milk	Jan, 1995	I-131(g)	A	86.0	64.0 - 108.0	84.8 ± 10.4; 13.4
SPCH-717	Charcoal Canister	Jan, 1995	I-131(g)	A	2.5	1.9 - 3.0	2.9 ± 0.1; 0.3
SPVE-729	Vegetation	Feb, 1995	I-131(g)	A	1.9	1.5 - 2.3	1.9 ± 0.1; 0.2
SPW-1204	Water	Feb, 1995	Ra-226	A	6.9	5.5 - 8.3	6.9 ± 0.1; 0.7
SPW-1790	Water	Mar, 1995	Sr-89	R	42.7	34.5 - 50.9	0.9 ± 3.9; 3.9
The raw data was reviewed and found to be free of errors. The sample was repeated with similar results. An investigation was conducted to determine the cause of this deviation. No apparent cause was found for this discrepancy. It was determined the "spike" was prepared improperly. Another "spike" was prepared and analyzed (See SPW-6388). No further action is planned.							
SPW-1790	Water	Mar, 1995	Si-90	R	39.1	31.6 - 46.6	31.4 ± 1.8; 3.6
The raw data was reviewed and found to be free of errors. The sample was repeated with similar results. An investigation was conducted to determine the cause of this deviation. No apparent cause was found for this discrepancy. It was determined the "spike" was prepared improperly. Another "spike" was prepared and analyzed (See SPW-6388). No further action is planned.							
SPW-3051	Water	Mar, 1995	Gr. Alpha	A	82.9	65.0 - 100.8	88.5 ± 3.7; 9.6
SPW-3051	Water	Mar, 1995	Gr. Beta	A	87.2	69.9 - 104.5	83.0 ± 2.3; 8.6
SPAP-2513	Air Filter	Apr, 1995	Gr. Beta	A	8.1	6.5 - 9.7	7.5 ± 0.0; 0.8
SPAP-2542	Air Filter	Apr, 1995	Cs-137	A	1.9	-0.3 - 4.2	2.3 ± 2.1; 2.1
SPW-2544	Water	Apr, 1995	H-3	A	9333.0	7391.0 - 11275.0	9656.2 ± 291.8; 1008.7
SPW-2652	Water	Apr, 1995	Co-60	A	24.8	18.9 - 30.7	23.8 ± 2.4; 3.4
SPW-2652	Water	Apr, 1995	Cs-134	A	30.8	24.0 - 37.6	29.3 ± 2.3; 3.7
SPW-2652	Water	Apr, 1995	Cs-137	A	40.9	31.1 - 50.7	42.3 ± 3.9; 5.8
SPMI-2988	Milk	Apr, 1995	Cs-134	A	40.7	32.5 - 48.9	37.0 ± 1.8; 4.1
SPMI-2988	Milk	Apr, 1995	Cs-137	A	54.5	42.1 - 67.0	62.4 ± 3.1; 7.0

Table A-2. In-house "spike" samples.

Lab Code	Sample Type	Date Collected	Analysis	Accepted Rejected	Concentration in pCi/L <sup>a</sup>		
					Known Activity	Control Limits <sup>b</sup>	TBESML Results 2s, n=1 <sup>c</sup>
SPMI-2988	Milk	Apr, 1995	Sr-89	A	36.5	28.2 - 44.8	32.6 ± 3.3; 4.6
SPMI-2988	Milk	Apr, 1995	Sr-90	A	24.9	19.4 - 30.4	25.6 ± 1.6; 3.0
SPW-3051	Water	Apr, 1995	Gr. Alpha	A	82.9	65.0 - 100.8	88.0 ± 3.8; 9.6
SPW-3051	Water	Apr, 1995	Gr. Beta	A	87.2	70.2 - 104.2	79.6 ± 2.3; 8.3
SPW-3589	Water	May, 1995	Fe-55	A	2274.0	1506.6 - 3041.4	2033.7 ± 500.2; 540.0
SPF-3708	Fish	May, 1995	Cs-134	A	0.1	0.1 - 0.2	0.1 ± 0.0; 0.0
SPF-3708	Fish	May, 1995	Cs-137	A	0.2	0.1 - 0.2	0.2 ± 0.0; 0.0
SPW-6008	Water	May, 1995	Gr. Alpha	A	20.7	16.4 - 25.0	17.3 ± 1.4; 2.2
SPW-6008	Water	May, 1995	Gr. Beta	A	21.8	17.3 - 26.3	21.2 ± 1.0; 2.3
SPSO-5130	Soil	May, 1995	Cs-134	A	0.3	0.2 - 0.3	0.3 ± 0.0; 0.0
SPSO-5130	Soil	May, 1995	Cs-137	A	0.5	0.4 - 0.6	0.5 ± 0.0; 0.1
SPW-6388	Water	May, 1995	Sr-89	A	21.2	16.0 - 26.4	18.7 ± 2.4; 3.0
SPW-6388	Water	May, 1995	Sr-90	A	23.2	18.5 - 27.9	21.2 ± 1.1; 2.4
SPW-6398	Water	May, 1995	Sr-89	A	21.2	16.1 - 26.3	18.7 ± 2.4; 3.0
SPW-6398	Water	May, 1995	Sr-90	A	23.2	18.5 - 27.9	21.2 ± 1.1; 2.4
SPW-5608	Water	Jun, 1995	I-131	A	85.5	68.7 - 102.3	78.8 ± 2.3; 8.2
SPCH-596	Charcoal Canister	Jun, 1995	I-131(g)	A	2.3	1.9 - 2.8	2.2 ± 0.1; 0.2
SPW-6005	Water	Jun, 1995	I-131	A	46.8	36.9 - 56.7	48.2 ± 1.9; 5.2
SPVE-6006	Vegetation	Jun, 1995	I-131(g)	A	0.5	0.4 - 0.7	0.6 ± 0.0; 0.1
SPMI-6838	Milk	Jun, 1995	I-131	A	39.6	31.8 - 47.4	38.5 ± 0.5; 3.9
SPW-6839	Water	Jun, 1995	I-131	A	39.5	32.0 - 47.0	34.9 ± 0.5; 3.5
SPVE-7190	Vegetation	Jul, 1995	I-131(g)	A	1.0	0.8 - 1.2	1.1 ± 0.0; 0.1
SPMI-7525	Milk	Jul, 1995	Cs-134	A	34.4	26.9 - 41.9	31.5 ± 2.5; 4.0
SPMI-7525	Milk	Jul, 1995	Cs-137	A	43.4	32.7 - 54.1	50.2 ± 4.0; 6.4
SPMI-7525	Milk	Jul, 1995	I-131(g)	A	45.6	34.1 - 57.1	44.7 ± 5.4; 7.0
SPMI-7525	Milk	Jul, 1995	Sr-90	A	27.9	22.0 - 33.8	28.0 ± 1.4; 3.1
SPAP-7554	Air Filter	Jul, 1995	Gr. Beta	A	8.1	6.5 - 9.6	7.3 ± 0.0; 0.7
SPAP-7557	Air Filter	Jul, 1995	Cs-137	A	1.9	1.5 - 2.3	2.3 ± 0.0; 0.2
SPW-7569	Water	Jul, 1995	H-3	A	26669.0	21382.9 - 31955.1	25806.9 ± 447.7; 2619.2
SPW-8179	Water	Jul, 1995	Fe-55	A	2.1	1.4 - 2.9	2.3 ± 0.4; 0.5
SPW-9981	Water	Sep, 1995	Sr-89	A	39.0	29.1 - 48.9	34.6 ± 4.9; 6.0
SPW-9981	Water	Sep, 1995	Sr-90	A	20.0	15.6 - 24.4	20.3 ± 1.3; 2.4
SPMI-1091	Milk	Oct, 1995	Cs-134	A	27.8	20.2 - 35.4	27.9 ± 3.9; 4.8
SPMI-1091	Milk	Oct, 1995	Cs-137	A	43.1	30.2 - 56.1	52.3 ± 6.9; 8.7
SPMI-1091	Milk	Oct, 1995	I-131	A	73.4	58.9 - 87.8	70.9 ± 0.8; 7.1



Table A-2. In-house "spike" samples.

Lab Code	Sample Type	Date Collected	Analysis	Accepted Rejected	Concentration in pCi/L <sup>a</sup>		
					Known Activity	Control Limits <sup>b</sup>	TBEESML Results 2s, n=1 <sup>c</sup>
SPMI-1091	Milk	Oct, 1995	I-131(g)	A	73.4	55.0 - 91.7	77.1 ± 7.9; 11.0
SPF-10921	Fish	Oct, 1995	Co-60	A	0.8	0.6 - 0.9	0.7 ± 0.0; 0.1
SPF-10921	Fish	Oct, 1995	Cs-134	A	0.6	0.4 - 0.7	0.5 ± 0.0; 0.1
SPF-10921	Fish	Oct, 1995	Cs-137	A	0.9	0.7 - 1.1	0.9 ± 0.1; 0.1
SPCH-112	Charcoal Canister	Oct, 1995	I-131(g)	A	0.8	0.6 - 1.0	0.8 ± 0.0; 0.1
SPAP-109	Air Filter	Nov, 1995	Gr. Beta	A	8.0	6.5 - 9.5	7.3 ± 0.0; 0.7
SPW-1207	Water	Nov, 1995	H-3	A	29315.0	23551.9 - 35078.1	27963.4 ± 445.5; 2831.6
SPW-1208	Water	Nov, 1995	Co-60	A	23.0	17.8 - 28.2	22.0 ± 1.9; 2.9
SPW-1208	Water	Nov, 1995	Cs-134	A	41.7	33.2 - 50.2	38.1 ± 2.0; 4.3
SPW-1208	Water	Nov, 1995	Cs-137	A	24.3	17.8 - 30.8	27.2 ± 3.0; 4.0
SPW-1208	Water	Nov, 1995	Gr. Alpha	A	82.8	66.3 - 99.3	75.3 ± 3.2; 8.2
SPW-1208	Water	Nov, 1995	Gr. Beta	A	86.3	68.6 - 104.0	86.9 ± 2.5; 9.0
SPW-1280	Water	Dec, 1995	Gr. Alpha	A	20.7	15.1 - 26.3	19.6 ± 3.0; 3.6
SPW-1280	Water	Dec, 1995	Gr. Beta	A	21.6	16.7 - 26.5	21.0 ± 1.8; 2.8

<sup>a</sup> 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; and food products, which are in mg/Kg.

<sup>b</sup> Control limits are based on the known value ± 10%+TPU (Where all parametric uncertainties, other than counting statistics, are less than 5%).

<sup>c</sup> All samples are the results of single determinations. The result is reported in the following format: Activity ± Counting Error ; Total Propagated Uncertainty.

NOTE: For fish, Jello is used for the spike matrix. For vegetation, Sawdust is used for the spike matrix.



Table A-3. In-house "blank" samples.

Lab Code	Sample Type	Sample Date	Analysis	Concentration pCi/L <sup>a</sup>		
				Teledyne Results (4.66 Sigma)		Acceptance Criteria (4.66 Sigma)
				LLD	Activity <sup>b</sup>	
SPM-204	Milk	Jan 1995	Co-60	<5.3	0.41 ± 3.48; 3.48	< 10.0
SPM-204	Milk	Jan 1995	Cs-134	<4.4	-0.07 ± 2.05; 2.05	< 10.0
SPM-204	Milk	Jan 1995	Cs-137	<4.3	1.32 ± 2.53; 2.54	< 10.0
SPM-204	Milk	Jan 1995	I-131	<0.5	-0.03 ± 0.22; 0.22	< 0.5
SPM-204	Milk	Jan 1995	Sr-89	<0.8	0.14 ± 1.08; 1.08	< 5.0
SPM-204	Milk	Jan 1995	Sr-90	N/A	1.46 ± 0.48; 0.50	< 1.0
Low level of Sr-90 concentration in milk (1-5 pCi/L) is not unusual.						
SPAP-283	Air Filter	Jan 1995	Co-60	<2.7	-0.36 ± 1.40; 1.40	< 10.0
SPAP-283	Air Filter	Jan 1995	Cs-134	<1.5	-0.67 ± 1.33; 1.33	< 10.0
SPAP-283	Air Filter	Jan 1995	Cs-137	<2.4	0.46 ± 1.33; 1.33	< 10.0
SPW-285	Water	Jan 1995	H-3	<165.0	-48.53 ± 84.76; 85.01	< 200.0
SPCH-287	Charcoal Canister	Jan 1995	I-131(g)	<2.3	-1.98 ± 3.12; 3.13	< 9.6
SPW-288	Water	Jan 1995	Co-60	<2.3	-0.11 ± 2.02; 2.02	< 10.0
SPW-288	Water	Jan 1995	Cs-134	<3.5	-0.19 ± 2.61; 2.61	< 10.0
SPW-288	Water	Jan 1995	Cs-137	<4.7	0.98 ± 2.54; 2.54	< 10.0
SPAP-409	Air Filter	Jan 1995	Gr. Beta	<0.5	0.02 ± 0.28; 0.28	< 3.2
SPVE-728	Vegetation	Jan 1995	I-131(g)	<12.0	2.33 ± 7.54; 7.55	< 20.0
SPW-957	Water	Feb 1995	Co-60	<3.7	-1.25 ± 3.02; 3.03	< 10.0
SPW-957	Water	Feb 1995	Cs-134	<5.2	0.76 ± 2.77; 2.77	< 10.0
SPW-957	Water	Feb 1995	Cs-137	<3.6	-1.38 ± 2.65; 2.66	< 10.0
SPW-1106	Water	Feb 1995	Ni-63	<12.0	0.25 ± 6.31; 6.31	< 20.0
SPW-3052	Water	Mar 1995	Gr. Alpha	<0.6	0.49 ± 0.43; 0.44	< 1.0
SPW-3052	Water	Mar 1995	Gr. Beta	<1.4	3.05 ± 0.98; 1.09	< 3.2
SPAP-2514	Air Filter	Apr 1995	Gr. Beta	<0.3	0.03 ± 0.25; 0.25	< 3.2
SPAP-2543	Air Filter	Apr 1995	Co-60	<4.4	0.39 ± 2.20; 2.20	< 10.0
SPAP-2543	Air Filter	Apr 1995	Cs-134	<1.9	0.05 ± 2.11; 2.11	< 10.0
SPAP-2543	Air Filter	Apr 1995	Cs-137	<1.1	-1.24 ± 1.83; 1.83	< 10.0
SPW-2545	Water	Apr 1995	H-3	<169	97.76 ± 88.37; 89.36	< 200.0
SPW-2651	Water	Apr 1995	Co-60	<3.17	-1.08 ± 2.45; 2.45	< 10.0
SPW-2651	Water	Apr 1995	Cs-134	<3.32	0.29 ± 2.57; 2.57	< 10.0
SPW-2651	Water	Apr 1995	Cs-137	<3.56	-0.92 ± 2.64; 2.64	< 10.0
SPMI-2987	Milk	Apr 1995	Cs-134	<3.4	0.37 ± 1.89; 1.89	< 10.0
SPMI-2987	Milk	Apr 1995	Cs-137	<3.3	1.29 ± 1.75; 1.76	< 10.0
SPMI-2987	Milk	Apr 1995	Sr-89	<0.4	0.06 ± 0.62; 0.62	< 5.0

Table A-3. In-house "blank" samples.

Lab Code	Sample Type	Sample Date	Analysis	Concentration pCi/L <sup>a</sup>		Acceptance Criteria (4.66 Sigma)
				Teledyne Results (4.66 Sigma)		
				LLD	Activity <sup>b</sup>	
SPMI-2987	Milk	Apr 1995	Sr-90	N/A	1.47 ± 0.38; 0.40	< 1.0
Low level of Sr-90 concentration in milk (1-5 pCi/L) is not unusual.						
SPW-3052	Water	Apr 1995	Gr. Alpha	< 0.7	0.23 ± 0.47; 0.47	< 1.0
SPW-3052	Water	Apr 1995	Gr. Beta	< 1.7	-0.02 ± 1.09; 1.09	< 3.2
SPW-3590	Water	May 1995	Fe-55	< 602.0	0.00 ± 365.40; 365.40	< 1000.0
SPF-3709	Fish	May 1995	Co-60	< 8.4	2.21 ± 5.97; 5.98	< 10.0
SPF-3709	Fish	May 1995	Cs-134	< 1.3	6.79 ± 8.55; 8.60	< 10.0
SPF-3709	Fish	May 1995	Cs-137	< 1.3	3.61 ± 7.81; 7.83	< 10.0
SPSO-5131	Soil	May 1995	Cs-134	< 0.034	0.01 ± 0.01; 0.01	< 10.0
SPSO-5131	Soil	May 1995	Cs-137	< 0.012	0.00 ± 0.01; 0.01	< 10.0
SPCH-5975	Charcoal Canister	Jun 1995	I-131(g)	< 3.0	-0.71 ± 2.68; 2.69	< 9.6
SPVE-6007	Vegetation	Jun 1995	I-131(g)	< 0.009	0.00 ± 0.01; 0.01	< 20.0
SPW-6011	Water	Jun 1995	I-131	< 0.4	-0.03 ± 0.19; 0.19	< 0.5
SPVE-7191	Vegetation	Jul 1995	I-131(g)	< 0.005	-0.00 ± 0.00; 0.00	< 20.0
SPMI-7526	Milk	Jul 1995	Co-60	< 5.8	1.19 ± 3.34; 3.34	< 10.0
SPMI-7526	Milk	Jul 1995	Cs-134	< 5.1	0.48 ± 2.76; 2.76	< 10.0
SPMI-7526	Milk	Jul 1995	Cs-137	< 3.7	0.98 ± 2.39; 2.39	< 10.0
SPMI-7526	Milk	Jul 1995	I-131	< 0.5	0.00 ± 0.23; 0.23	< 0.5
SPMI-7526	Milk	Jul 1995	Sr-89	< 0.6	-0.19 ± 0.82; 0.82	< 5.0
SPMI-7526	Milk	Jul 1995	Sr-90	N/A	1.35 ± 0.36; 0.39	< 1.0
Low level of Sr-90 concentration in milk (1-5 pCi/L) is not unusual.						
SPAP-7556	Air Filter	Jul 1995	Gr. Beta	< 1.0	0.06 ± 0.55; 0.55	< 3.2
SPAP-7558	Air Filter	Jul 1995	Co-60	< 4.2	0.39 ± 3.06; 3.06	< 10.0
SPAP-7558	Air Filter	Jul 1995	Co-60	< 4.2	0.04 ± 3.07; 3.07	< 10.0
SPAP-7558	Air Filter	Jul 1995	Cs-134	< 3.0	-1.23 ± 2.45; 2.45	< 10.0
SPAP-7558	Air Filter	Jul 1995	Cs-137	< 3.5	1.18 ± 2.04; 2.04	< 10.0
SPW-7570	Water	Jul 1995	H-3	< 164	51.58 ± 83.71; 84.01	< 200.0
SPW-8180	Water	Jul 1995	Fe-55	< 0.4	0.00 ± 0.27; 0.27	< 1000.0
SPW-8931	Water	Aug 1995	Ra-228	< 1.0	0.58 ± 0.61; 0.61	< 1.0
SPW-9982	Water	Sep 1995	Sr-89	< 0.8	0.52 ± 0.76; 0.76	< 5.0
SPW-9982	Water	Sep 1995	Sr-90	< 0.4	0.21 ± 0.21; 0.22	< 1.0
SPMI-10920	Milk	Oct 1995	Co-60	< 3.8	-0.45 ± 5.05; 5.05	< 10.0
SPMI-10920	Milk	Oct 1995	Cs-134	< 3.5	-2.79 ± 4.35; 4.37	< 10.0
SPMI-10920	Milk	Oct 1995	Cs-137	< 6.0	1.55 ± 4.13; 4.14	< 10.0

Table A-3. In-house "blank" samples.

Lab Code	Sample Type	Sample Date	Analysis	Concentration pCi/L <sup>a</sup>		
				Teledyne Results (4.66 Sigma)		Acceptance Criteria (4.66 Sigma)
				LLD	Activity <sup>b</sup>	
SPMI-10920	Milk	Oct 1995	I-131	<0.4	0.10 ± 0.19; 0.19	< 0.5
SPF-10922	Fish	Oct 1995	Co-60	<5.4	5.74 ± 4.70; 4.76	< 10.0
SPF-10922	Fish	Oct 1995	Cs-134	<8.9	2.47 ± 5.44; 5.45	< 10.0
SPF-10922	Fish	Oct 1995	Cs-137	<5.4	-2.44 ± 5.08; 5.09	< 10.0
SPSO-11225	Soil	Oct 1995	Cs-134	<0.034	0.00 ± 0.02; 0.02	< 10.0
SPSO-11225	Soil	Oct 1995	Cs-137	<0.019	-0.00 ± 0.01; 0.01	< 10.0
SPCH-11238	Charcoal Canister	Oct 1995	I-131 (g)	<1.9	-0.00 ± 0.01; 0.01	< 9.6
SPAP-10968	Air Filter	Nov 1995	Gr. Beta	<0.4	0.61 ± 0.26; 0.26	< 3.2
SPW-12080	Water	Nov 1995	H-3	<14.2	23.01 ± 74.94; 75.01	< 200.0
SPW-12082	Water	Nov 1995	Co-60	<2.1	0.02 ± 1.13; 1.13	< 10.0
SPW-12082	Water	Nov 1995	Cs-134	<1.9	0.2 ± 1.28; 1.28	< 10.0
SPW-12082	Water	Nov 1995	Cs-137	<2.4	1.53 ± 1.22; 1.24	< 10.0
SPW-12082	Water	Nov 1995	Gr. Alpha	<0.6	0.19 ± 0.43; 0.43	< 1.0
SPW-12082	Water	Nov 1995	Gr. Beta	<1.7	0.06 ± 1.11; 1.11	< 3.2
SPW-12808	Water	Dec 1995	Gr. Alpha	<1.0	0.08 ± 0.49; 0.49	< 1.0
SPW-12808	Water	Dec 1995	Gr. Beta	<1.6	-0.53 ± 0.78; 0.78	< 3.2
SPCH-608	Charcoal Canister	Feb 1996	I-131(g)	<2.7	-0.10 ± 1.63; 1.63	< 9.6

<sup>a</sup> Liquid sample results are reported in pCi/Liter, air filter sample results are in pCi/filter, charcoal sample results are in pCi/charcoal, and solid sample results are in pCi/kilogram.

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

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Jan, 1995	Gr. Beta	Ww-62, 63	A	1.4±0.4;0.5	1.3±0.4;0.4
Jan, 1995	H-3	Ww-62, 63	A	22.6±80.9;80.9	18.8±80.7;80.8
Jan, 1995	Gr. Alpha	Ww-41, 42	A	5.1±2.5;2.6	2.5±2.2;2.2
Jan, 1995	Gr. Beta	Ww-41, 42	A	4.7±0.8;1.1	5.0±0.9;1.2
Jan, 1995	H-3	Ww-41, 42	A	30.1±81.2;81.3	-47.0±77.8;78.0
Jan, 1995	K-40	Ww-41, 42	A	1.4±0.2;0.2	1.7±0.3;0.3
Jan, 1995	Sr-89	Ww-41, 42	A	-0.3±0.6;0.6	-0.1±0.5;0.5
Jan, 1995	Sr-90	Ww-41, 42	A	0.2±0.3;0.3	0.1±0.2;0.2
Jan, 1995	Be-7	Cf-20, 21	A	0.4±0.1;0.1	0.5±0.1;0.1
Jan, 1995	Gr. Beta	Cf-20, 21	A	2.9±0.1;0.3	3.0±0.1;0.3
Jan, 1995	K-40	Cf-20, 21	A	4.1±0.3;0.5	3.8±0.3;0.5
Jan, 1995	Sr-89	Cf-20, 21	A	0.0±0.0;0.0	0.0±0.0;0.0
Jan, 1995	Sr-90	Cf-20, 21	A	0.0±0.0;0.0	0.0±0.0;0.0
Jan, 1995	Gr. Beta	Cw-105, 106	A	5.4±1.0;1.1	6.2±1.0;1.2
Jan, 1995	Gr. Beta	Cw-105, 106	A	0.0±0.4;0.4	0.1±0.4;0.4
Jan, 1995	Co-60	Mi-83, 84	A	-0.3±2.5;2.5	0.7±2.2;2.2
Jan, 1995	Cs-137	Mi-83, 84	A	-1.1±2.3;2.3	0.1±1.9;1.9
Jan, 1995	I-131(G)	Mi-83, 84	A	-1.9±3.2;3.2	1.5±2.5;2.5
Jan, 1995	I-131	Mi-187, 188	A	0.1±0.3;0.3	0.3±0.4;0.4
Jan, 1995	K-40	Mi-187, 188	A	1,573.0±138.0;254.6	1,426.0±177.0;262.6
Jan, 1995	H-3	Sw-213, 214	A	5,939.6±241.2;843.0	6,091.2±232.8;660.5
Jan, 1995	H-3	Ww-240, 241	A	39.8±80.3;80.5	10.0±78.9;79.0
Jan, 1995	H-3	Ww-316, 317	A	17,618.0±377.0;2,425.5	17,390.0±381.0;2,395.5
Jan, 1995	Co-60	Mi-295, 296	A	-1.1±2.4;2.4	0.3±2.8;2.8
Jan, 1995	Cs-134	Mi-295, 296	A	-0.6±1.8;1.8	0.8±2.4;2.4
Jan, 1995	Cs-137	Mi-295, 296	A	0.5±1.8;1.8	1.3±2.7;2.7
Jan, 1995	I-131	Mi-295, 296	A	0.1±0.3;0.3	0.2±0.3;0.3
Jan, 1995	I-131(g)	Mi-295, 296	A	-0.4±2.4;2.4	-0.0±4.3;4.3
Jan, 1995	K-40	Mi-295, 296	A	1,449.1±91.2;217.2	1,311.8±108.0;208.5
Jan, 1995	La-140	Mi-295, 296	A	0.6±1.7;1.7	-1.2±2.5;2.5
Jan, 1995	Sr-89	Mi-295, 296	A	0.2±0.8;0.8	0.2±0.9;0.9
Jan, 1995	Sr-90	Mi-295, 296	A	1.4±0.4;0.4	1.6±0.4;0.5
Jan, 1995	Gr. Beta	Lw-609, 610	A	2.6±0.7;0.8	1.7±0.7;0.7
Jan, 1995	Co-60	Lw-344, 345	A	-0.2±1.9;1.9	1.5±3.1;3.1
Jan, 1995	Cs-137	Lw-344, 345	A	0.4±1.9;1.9	-0.2±3.0;3.0
Jan, 1995	Gr. Beta	Lw-344, 345	A	3.3±0.9;1.1	3.4±0.9;1.1

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Jan, 1995	I-131	Mi-374, 375	A	-0.1±0.2;0.2	-0.1±0.3;0.3
Jan, 1995	K-40	Mi-374, 375	A	1,250.0±150.0;226.7	1,286.5±141.0;224.7
Jan, 1995	Gr. Beta	Sw-463, 464	A	1.9±0.6;0.7	1.9±0.6;0.7
Jan, 1995	H-3	Sw-463, 464	A	35.6±80.3;80.5	7.5±79.0;79.0
Jan, 1995	Gr. Alpha	Wwu-860, 861	A	0.3±0.6;0.6	0.2±0.3;0.3
Jan, 1995	Gr. Beta	Wwu-860, 861	A	0.8±1.3;1.3	1.8±1.4;1.4
Jan, 1995	K-40	Wwu-860, 861	A	61.8±32.9;33.5	71.0±36.2;36.9
Jan, 1995	Co-60	Sw-586, 587	A	-2.2±2.3;2.3	1.9±2.8;2.8
Jan, 1995	Cs-137	Sw-586, 587	A	0.6±2.3;2.3	1.5±2.9;2.9
Jan, 1995	H-3	Ww-547, 548	A	602.6±102.9;131.6	619.6±103.6;133.5
Jan, 1995	Gr. Beta	Swt-715, 716	A	2.3±0.6;0.7	2.3±0.5;0.6
Feb, 1995	Gr. Beta	Sw-694, 695	A	3.9±0.7;1.0	4.2±0.8;1.0
Feb, 1995	H-3	Ww-736, 737	A	9,951.9±284.3;1,383.0	10,200.8±287.5;1,416.8
Feb, 1995	H-3	Ww-763, 764	A	584.4±101.1;128.6	707.1±105.5;142.8
Feb, 1995	I-131	Mi-881, 882	A	0.2±0.3;0.3	0.2±0.3;0.3
Feb, 1995	K-40	Mi-881, 882	A	1,340.4±164.0;245.2	1,492.0±101.0;226.7
Feb, 1995	Co-60	Mi-838, 839	A	1.0±2.7;2.7	-0.5±3.8;3.8
Feb, 1995	Cs-134	Mi-838, 839	A	-0.1±2.3;2.3	-1.4±3.1;3.1
Feb, 1995	Cs-137	Mi-838, 839	A	-0.4±2.6;2.6	-0.4±3.1;3.1
Feb, 1995	I-131	Mi-838, 839	A	0.1±0.2;0.2	0.1±0.2;0.2
Feb, 1995	I-131(g)	Mi-838, 839	A	-0.3±2.6;2.6	-0.6±3.2;3.2
Feb, 1995	K-40	Mi-838, 839	A	1,298.6±99.4;202.7	1,232.5±125.0;209.1
Feb, 1995	Sr-89	Mi-838, 839	A	0.5±0.6;0.6	0.5±0.6;0.6
Feb, 1995	Sr-90	Mi-838, 839	A	0.8±0.3;0.3	0.8±0.3;0.3
Feb, 1995	I-131	Mi-937, 938	A	-0.0±0.2;0.2	-0.0±0.2;0.2
Feb, 1995	K-40	Mi-937, 938	A	1,451.8±69.6;209.4	1,456.6±141.0;243.2
Feb, 1995	H-3	Sw-904, 905	A	640.3±104.6;136.1	597.4±103.0;131.2
Feb, 1995	I-131	Mi-1216, 1217	A	0.3±0.3;0.3	0.1±0.3;0.3
Feb, 1995	K-40	Mi-1216, 1217	A	1,583.0±131.0;252.0	1,493.6±174.0;267.5
Feb, 1995	H-3	Sw-1237, 1238	A	55.4±97.4;97.7	4.9±95.4;95.4
Feb, 1995	H-3	Sw-1264, 1265	A	67.1±81.2;81.7	109.3±83.1;84.5
Feb, 1995	U-235	G-1343, 1344	A	11.4±0.3;1.2	11.9±0.3;1.2
Feb, 1995	K-40	G-1343, 1344	A	3.0±0.2;0.4	3.0±0.2;0.4
Feb, 1995	Co-60	Sw-1494, 1495	A	-2.2±4.1;4.1	0.1±3.4;3.4
Feb, 1995	Cs-137	Sw-1494, 1495	A	3.5±3.7;3.7	0.2±3.6;3.6
Feb, 1995	H-3	Sw-1367, 1368	A	560.3±103.1;128.2	606.1±104.8;133.3



Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Feb, 1995	H-3	Ww-1394, 1395	A	47.9±80.2;80.4	-24.9±76.6;76.7
Feb, 1995	Gr. Beta	Sw-1515, 1516	A	2.4±0.5;0.6	1.7±0.5;0.6
Feb, 1995	H-3	Ww-1536, 1537	A	2,874.3±167.5;425.3	2,924.1±168.6;431.9
Mar, 1995	H-3	Ww-1563, 1564	A	33.5±82.7;82.8	39.5±83.0;83.1
Mar, 1995	Co-60	Ww-1618, 1619	A	2.8±1.5;1.6	2.2±4.6;4.6
Mar, 1995	Cs-137	Ww-1618, 1619	A	-0.9±1.7;1.7	-2.5±3.2;3.2
Mar, 1995	H-3	Ww-1618, 1619	A	4,333.0±204.0;623.6	4,457.0±206.0;640.2
Mar, 1995	Co-60	Mi-1663, 1664	A	2.0±3.2;3.3	-1.5±2.7;2.7
Mar, 1995	Cs-134	Mi-1663, 1664	A	0.2±2.8;2.8	-1.1±2.1;2.1
Mar, 1995	Cs-137	Mi-1663, 1664	A	-0.1±2.7;2.7	0.9±2.4;2.4
Mar, 1995	I-131	Mi-1663, 1664	A	0.1±0.3;0.3	0.2±0.3;0.3
Mar, 1995	I-131(g)	Mi-1663, 1664	A	-0.4±3.7;3.7	0.1±3.4;3.4
Mar, 1995	K-40	Mi-1663, 1664	A	1,592.1±124.0;249.5	1,555.6±118.0;242.2
Mar, 1995	La-140	Mi-1663, 1664	A	-1.7±3.1;3.1	-0.2±2.7;2.7
Mar, 1995	Sr-89	Mi-1663, 1664	A	0.6±0.7;0.7	0.6±0.7;0.7
Mar, 1995	Sr-90	Mi-1663, 1664	A	1.4±0.4;0.4	1.5±0.5;0.5
Mar, 1995	Gr. Beta	Ww-1684, 1685	A	4.9±0.7;1.1	5.0±0.7;1.1
Mar, 1995	H-3	Ww-1684, 1685	A	81.7±84.9;85.6	85.7±85.1;85.9
Mar, 1995	Co-58	Lw-1707, 1708	A	0.4±3.0;3.0	0.0±2.9;2.9
Mar, 1995	Co-60	Lw-1707, 1708	A	1.1±2.9;2.9	1.5±2.7;2.7
Mar, 1995	Cs-134	Lw-1707, 1708	A	-1.9±3.1;3.1	-1.5±2.8;2.8
Mar, 1995	Cs-137	Lw-1707, 1708	A	2.6±3.0;3.0	-1.4±2.5;2.5
Mar, 1995	Fe-59	Lw-1707, 1708	A	5.5±6.2;6.2	-6.7±6.2;6.2
Mar, 1995	Gr. Beta	Lw-1707, 1708	A	2.0±0.5;0.6	2.1±0.5;0.6
Mar, 1995	I-131	Lw-1707, 1708	A	0.2±0.3;0.3	-0.1±0.3;0.3
Mar, 1995	I-131(g)	Lw-1707, 1708	A	-0.7±6.7;6.7	-0.6±6.2;6.2
Mar, 1995	K-40	Lw-1707, 1708	A	79.3±42.8;43.5	75.3±39.2;39.9
Mar, 1995	La-140	Lw-1707, 1708	A	-3.6±5.1;5.1	1.3±4.6;4.6
Mar, 1995	Mn-54	Lw-1707, 1708	A	-1.9±3.1;3.1	0.8±2.5;2.5
Mar, 1995	Ru-103	Lw-1707, 1708	A	-0.1±3.3;3.3	-0.8±3.0;3.0
Mar, 1995	Zn-65	Lw-1707, 1708	A	-2.7±6.5;6.5	-1.7±5.8;5.8
Mar, 1995	Zr-Nb-95	Lw-1707, 1708	A	-0.3±3.1;3.1	-3.2±2.7;2.7
Mar, 1995	H-3	Sw-1762, 1763	A	104.4±89.4;90.5	92.2±88.8;89.7
Mar, 1995	Cs-137	So-1861, 1862	A	0.3±0.0;0.0	0.2±0.0;0.0
Mar, 1995	K-40	So-1861, 1862	A	11.7±0.6;1.3	11.3±0.5;1.2
Mar, 1995	Ra-226	So-1861, 1862	A	1.7±0.4;0.4	1.5±0.3;0.3



Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Mar, 1995	H-3	Sw-1919, 1920	A	-9.1±85.2;85.2	66.7±88.9;89.3
Mar, 1995	H-3	Sw-1919, 1920	A	-9.1±85.2;85.2	66.7±88.9;89.3
Mar, 1995	Gr. Alpha	Wwu-2031, 2032	A	2.0±2.3;2.3	3.0±2.4;2.5
Mar, 1995	Gr. Beta	Wwu-2031, 2032	A	1.3±1.9;1.9	2.1±2.0;2.0
Mar, 1995	Gr. Beta	Cw-1997, 1998	A	2.7±1.0;1.1	2.3±1.4;1.4
Mar, 1995	Gr. Beta	Cw-1997, 1998	A	-0.5±1.0;1.0	0.6±1.1;1.1
Mar, 1995	Co-60	Ap-2784, 2785	A	-0.0±0.0;0.0	-0.0±0.0;0.0
Mar, 1995	Cs-137	Ap-2784, 2785	A	-0.0±0.0;0.0	0.0±0.0;0.0
Mar, 1995	I-131	Mi-2083, 2084	A	0.0±0.2;0.2	0.0±0.2;0.2
Mar, 1995	K-40	Mi-2083, 2084	A	1,273.9±69.7;186.7	1,328.9±59.8;190.4
Mar, 1995	Sr-90	Mi-2083, 2084	A	1.6±0.5;0.5	1.8±0.6;0.6
Mar, 1995	Gr. Beta	Sw-2104, 2105	A	1.7±0.5;0.6	1.7±0.6;0.6
Mar, 1995	H-3	Sw-2200, 2201	A	33.8±85.6;85.8	54.0±86.6;86.9
Mar, 1995	Co-60	Sw-2355, 2356	A	0.6±1.5;1.5	0.9±1.6;1.6
Mar, 1995	Cs-137	Sw-2355, 2356	A	2.2±1.5;1.6	0.1±1.9;1.9
Mar, 1995	Sr-89	Ap-2453, 2454	A	0.0±0.0;0.0	-0.0±0.0;0.0
Mar, 1995	Sr-90	Ap-2453, 2454	A	0.0±0.0;0.0	0.0±0.0;0.0
Mar, 1995	Co-60	Ap-2805, 2806	A	-0.0±0.0;0.0	0.0±0.0;0.0
Mar, 1995	Cs-137	Ap-2805, 2806	A	0.0±0.0;0.0	0.0±0.0;0.0
Mar, 1995	K-40	Sw-2221, 2222	A	149.7±74.4;75.9	119.4±46.7;48.2
Mar, 1995	H-3	Pw-2248, 2249	A	154.6±91.1;93.5	164.8±91.5;94.2
Mar, 1995	Co-60	Pw-2271, 2272	A	-0.5±2.0;2.0	-1.2±2.9;2.9
Mar, 1995	Cs-137	Pw-2271, 2272	A	1.0±2.1;2.1	0.9±3.5;3.5
Apr, 1995	Co-60	Mi-2149, 2150	A	-1.2±2.2;2.2	0.7±2.7;2.7
Apr, 1995	Cs-137	Mi-2149, 2150	A	0.2±2.0;2.0	2.3±2.2;2.2
Apr, 1995	I-131(G)	Mi-2149, 2150	A	0.1±2.2;2.2	0.3±2.5;2.5
Apr, 1995	Gr. Beta	Ww-2313, 2314	A	0.6±0.5;0.5	1.0±0.5;0.5
Apr, 1995	Gr. Beta	Cw-2401, 2402	A	1.7±1.3;1.3	3.5±1.5;1.5
Apr, 1995	Gr. Beta	Cw-2401, 2402	A	0.0±1.1;1.1	0.5±1.1;1.1
Apr, 1995	K-40	Sl-2567, 2568	A	1.4±0.4;0.5	1.7±0.4;0.4
Apr, 1995	H-3	Ww-2432, 2433	A	-21.6±82.7;82.8	2.7±83.9;83.9
Apr, 1995	Gr. Beta	Ww-2659, 2660	A	0.5±0.6;0.6	0.4±0.4;0.4
Apr, 1995	H-3	Ww-2659, 2660	A	38.4±87.5;87.6	133.4±91.7;93.5
Apr, 1995	I-131	Mi-2713, 2714	A	0.4±0.5;0.5	0.2±0.2;0.2
Apr, 1995	K-40	Mi-2713, 2714	A	1,420.9±137.0;236.9	1,420.0±137.0;236.8
Apr, 1995	Gr. Beta	Cw-2739, 2740	A	13.8±2.1;3.0	14.3±2.1;3.0

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Apr, 1995	Gr. Beta	Cw-2739, 2740	A	5.1±1.5;1.6	2.3±1.3;1.4
Apr, 1995	H-3	Sw-2686, 2687	A	52.7±87.0;87.3	2.0±84.6;84.6
Apr, 1995	Gr. Alpha	Ww-3447, 3448	A	-0.3±1.7;1.7	-1.5±1.6;1.7
Apr, 1995	Gr. Beta	Ww-3447, 3448	A	1.2±1.7;1.7	3.2±1.8;1.9
Apr, 1995	Gr. Beta	Cw-2835, 2836	A	2.0±1.4;1.4	2.7±1.5;1.5
Apr, 1995	Gr. Beta	Cw-2835, 2836	A	0.2±1.2;1.2	0.8±1.2;1.2
Apr, 1995	Gr. Beta	Cw-2918, 2919	A	5.3±1.6;1.8	4.3±1.6;1.7
Apr, 1995	Gr. Beta	Cw-2918, 2919	A	2.1±1.3;1.4	0.8±1.2;1.2
Apr, 1995	K-40	F-3552, 3553	A	3.1±0.4;0.5	2.9±0.2;0.4
Apr, 1995	Sr-89	F-3552, 3553	A	-0.0±0.0;0.0	0.0±0.0;0.0
Apr, 1995	Sr-90	F-3552, 3553	A	0.0±0.0;0.0	0.0±0.0;0.0
Apr, 1995	Gr. Beta	Sw-3343, 3344	A	2.3±0.5;0.6	3.0±0.5;0.7
Apr, 1995	K-40	G-3133, 3134	A	6.5±0.2;0.7	6.1±0.3;0.7
Apr, 1995	H-3	Sw-3403, 3404	A	159.6±90.6;93.2	72.7±86.6;87.2
Apr, 1995	H-3	Ww-3424, 3425	A	442.5±116.7;131.3	430.4±116.3;130.2
Apr, 1995	Gr. Beta	Lw-3682, 3683	A	2.1±0.6;0.7	1.5±0.6;0.6
Apr, 1995	Gr. Beta	Lw-3682, 3683	A	2.1±0.7;0.7	1.5±0.5;0.6
Apr, 1995	H-3	Lw-3682, 3683	A	139.9±91.1;93.1	75.0±88.2;88.8
Apr, 1995	H-3	Lw-3682, 3683	A	75.0±88.2;88.8	139.9±91.1;93.1
May, 1995	Cs-137	So-3531, 3532	A	0.2±0.0;0.0	0.1±0.0;0.0
May, 1995	Gr. Alpha	So-3531, 3532	A	6.9±3.6;3.6	9.2±3.9;4.0
May, 1995	Gr. Beta	So-3531, 3532	A	17.1±3.1;3.5	18.8±3.1;3.7
May, 1995	K-40	So-3531, 3532	A	25.0±0.8;2.6	23.8±0.7;2.5
May, 1995	Sr-89	So-3531, 3532	A	-0.0±0.0;0.0	0.0±0.0;0.0
May, 1995	Sr-90	So-3531, 3532	A	0.0±0.0;0.0	0.0±0.0;0.0
May, 1995	Co-60	Ww-3577, 3578	A	-0.3±2.2;2.2	0.5±2.6;2.6
May, 1995	Cs-137	Ww-3577, 3578	A	1.2±2.2;2.2	-1.6±2.9;2.9
May, 1995	H-3	Ww-3577, 3578	A	33.6±91.0;91.1	58.8±92.0;92.4
May, 1995	I-131	Mi-3598, 3599	A	0.2±0.4;0.4	0.2±0.3;0.3
May, 1995	K-40	Mi-3598, 3599	A	1,349.0±112.0;214.9	1,297.4±151.0;232.2
May, 1995	Co-60	Mi-3809, 3810	A	-0.4±3.0;3.0	0.2±3.0;3.0
May, 1995	Cs-137	Mi-3809, 3810	A	0.9±2.5;2.5	0.1±2.4;2.4
May, 1995	I-131	Mi-3809, 3810	A	0.1±0.2;0.2	0.2±0.2;0.2
May, 1995	Gr. Beta	Cw-3838, 3839	A	2.0±1.4;1.4	3.4±1.5;1.6
May, 1995	Gr. Beta	Cw-3838, 3839	A	-0.7±1.2;1.2	-1.1±1.2;1.2
May, 1995	Co-60	F-4309, 4310	A	-0.0±0.0;0.0	-0.0±0.0;0.0

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
May, 1995	Cs-137	F-4309, 4310	A	0.0±0.0;0.0	0.0±0.0;0.0
May, 1995	Co-60	F-4288, 4289	A	0.0±0.0;0.0	0.0±0.0;0.0
May, 1995	Cs-137	F-4288, 4289	A	0.0±0.0;0.0	0.0±0.0;0.0
May, 1995	Co-60	F-4330, 4331	A	0.0±0.0;0.0	0.0±0.0;0.0
May, 1995	Cs-137	F-4330, 4331	A	0.0±0.0;0.0	-0.0±0.0;0.0
May, 1995	Co-60	Mi-4377, 4378	A	0.9±1.7;1.7	2.2±2.7;2.7
May, 1995	Cs-134	Mi-4377, 4378	A	0.8±1.5;1.5	-0.2±2.3;2.3
May, 1995	Cs-137	Mi-4377, 4378	A	0.9±1.4;1.4	0.6±2.1;2.1
May, 1995	I-131	Mi-4377, 4378	A	-0.1±0.1;0.1	-0.0±0.1;0.1
May, 1995	I-131(g)	Mi-4377, 4378	A	0.2±1.3;1.3	-1.1±2.6;2.6
May, 1995	K-40	Mi-4377, 4378	A	1,385.1±63.2;198.7	1,344.3±92.5;204.9
May, 1995	Sr-89	Mi-4377, 4378	A	-0.0±0.7;0.7	0.0±1.1;1.1
May, 1995	Sr-90	Mi-4377, 4378	A	1.3±0.4;0.5	1.3±0.6;0.7
May, 1995	I-131	Mi-4544, 4545	A	0.1±0.3;0.3	0.1±0.2;0.2
May, 1995	K-40	Mi-4544, 4545	A	1,410.0±72.3;201.9	1,359.0±65.7;196.2
May, 1995	Sr-90	Mi-4544, 4545	A	2.1±0.5;0.6	1.3±0.4;0.4
May, 1995	Be-7	G-4604, 4605	A	1.9±0.4;0.4	1.7±0.4;0.4
May, 1995	Co-60	G-4604, 4605	A	-0.0±0.0;0.0	-0.0±0.0;0.0
May, 1995	Cs-134	G-4604, 4605	A	0.0±0.0;0.0	0.0±0.0;0.0
May, 1995	Cs-137	G-4604, 4605	A	0.1±0.0;0.0	0.1±0.0;0.0
May, 1995	Gr. Beta	G-4604, 4605	A	4.0±0.1;0.4	4.0±0.2;0.4
May, 1995	I-131(g)	G-4604, 4605	A	0.0±0.0;0.0	0.0±0.0;0.0
May, 1995	K-40	G-4604, 4605	A	5.1±0.7;0.8	5.1±0.7;0.9
May, 1995	Gr. Beta	Cw-4575, 4576	A	2.0±1.2;1.2	2.8±1.3;1.3
May, 1995	Gr. Beta	Cw-4575, 4576	A	-0.2±1.0;1.0	-0.6±1.0;1.0
May, 1995	I-131	Mi-4695, 4696	A	0.1±0.2;0.2	0.1±0.2;0.2
May, 1995	K-40	Mi-4695, 4696	A	1,568.8±114.0;241.9	1,573.1±50.1;219.7
May, 1995	Sr-89	Mi-4716, 4717	A	-0.3±0.8;0.8	-0.0±0.9;0.9
May, 1995	Sr-90	Mi-4716, 4717	A	1.2±0.4;0.5	1.6±0.4;0.5
May, 1995	Be-7	G-4814, 4815	A	0.6±0.3;0.3	0.6±0.2;0.2
May, 1995	K-40	G-4814, 4815	A	5.8±0.6;0.8	5.1±0.5;0.7
May, 1995	H-3	Ww-4784, 4785	A	18,665.3±390.2;2,568.3	18,274.9±386.3;2,515.2
May, 1995	H-3	Sw-4759, 4760	A	3,679.8±213.9;544.3	3,817.8±217.0;562.8
May, 1995	Cs-137	So-5178, 5179	A	0.8±0.1;0.1	0.8±0.1;0.1
May, 1995	K-40	So-5178, 5179	A	19.9±1.1;2.3	22.1±1.2;2.5
May, 1995	Gr. Beta	Swu-5663, 5664	A	2.5±0.6;0.7	2.5±0.6;0.7

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
May, 1995	H-3	Swu-5663, 5664	A	867.2±104.9;157.8	865.5±104.9;157.6
May, 1995	Gr. Beta	Bs - 6983, 6984	A	7.4±1.2;1.4	8.0±1.4;1.6
May, 1995	Gr. Beta	Bs - 6983, 6984	A	7.4±1.2;1.4	8.0±1.4;1.6
May, 1995	K-40	Bs - 6983, 6984	A	8.3±0.3;0.9	8.5±0.1;0.9
May, 1995	K-40	Bs - 6983, 6984	A	8.3±0.3;0.9	8.5±0.1;0.9
May, 1995	Cs-137	Bs-6983, 6984	A	0.0±0.0;0.0	0.0±0.0;0.0
May, 1995	Gr. Beta	Bs-6983, 6984	A	7.4±1.2;1.4	8.0±1.4;1.6
May, 1995	K-40	Bs-6983, 6984	A	8.3±0.3;0.9	8.5±0.1;0.9
May, 1995	Cs-137	Bs - 5494, 5495	A	0.6±0.0;0.1	0.6±0.0;0.1
May, 1995	Cs-137	Bs - 5494, 5495	A	0.6±0.0;0.1	0.6±0.0;0.1
May, 1995	K-40	Bs - 5494, 5495	A	21.1±0.7;2.2	21.3±0.7;2.2
May, 1995	K-40	Bs - 5494, 5495	A	21.1±0.7;2.2	21.3±0.7;2.2
May, 1995	Cs-137	Bs-5494, 5495	A	0.6±0.0;0.1	0.6±0.0;0.1
May, 1995	K-40	Bs-5494, 5495	A	21.1±0.7;2.2	21.3±0.7;2.2
May, 1995	Co-60	F-5025, 5026	A	0.0±0.0;0.0	0.0±0.0;0.0
May, 1995	Cs-137	F-5025, 5026	A	-0.0±0.0;0.0	-0.0±0.0;0.0
May, 1995	K-40	F-5385, 5386	A	2.5±0.3;0.4	2.6±0.4;0.5
May, 1995	Co-60	F-5046, 5047	A	0.0±0.0;0.0	-0.0±0.0;0.0
May, 1995	Cs-137	F-5046, 5047	A	0.0±0.0;0.0	-0.0±0.0;0.0
May, 1995	H-3	Ww-5244, 5245	A	608.4±96.3;127.0	463.6±91.1;110.8
May, 1995	Co-60	Sw-6013, 6014	A	0.8±2.2;2.2	1.5±3.0;3.0
May, 1995	Cs-137	Sw-6013, 6014	A	-0.7±2.3;2.3	0.5±2.3;2.3
May, 1995	I-131	Mi-5620, 5621	A	0.2±0.2;0.2	0.0±0.2;0.2
May, 1995	K-40	Mi-5620, 5621	A	1,526.2±119.0;239.3	1,449.3±162.0;255.1
May, 1995	Gr. Alpha	Ww - 5642, 5643	A	2.3±2.3;2.3	2.3±2.3;2.3
May, 1995	Gr. Beta	Ww - 5642, 5643	A	2.3±3.3;3.3	2.3±3.3;3.3
May, 1995	K-40	Ww - 5642, 5643	A	94.4±19.8;21.9	59.0±29.5;30.1
May, 1995	Gr. Beta	Dw-5738, 5739	A	2.5±1.2;1.2	3.6±1.2;1.3
May, 1995	I-131	Dw-5738, 5739	A	-0.0±0.2;0.2	-0.0±0.1;0.1
May, 1995	Gr. Beta	Lw-6327, 6328	A	6.5±1.0;1.4	6.6±1.0;1.5
May, 1995	Sr-89	W-6398, 6399	A	15.1±3.8;4.1	18.1±2.7;3.3
May, 1995	Sr-90	W-6398, 6399	A	25.1±1.9;3.1	24.4±1.3;2.8
Jun, 1995	Gr. Beta	Ww-6184, 6185	A	6.0±1.1;1.4	7.5±1.4;1.8
Jun, 1995	H-3	Ww-6184, 6185	A	86.1±78.3;79.2	107.0±79.3;80.6
Jun, 1995	Co-60	Mi-5684, 5685	A	0.1±3.0;3.0	0.4±4.6;4.6
Jun, 1995	Cs-137	Mi-5684, 5685	A	1.8±2.7;2.7	-0.9±3.2;3.2

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Jun, 1995	I-131	Mi-5684, 5685	A	0.1±0.1;0.1	-0.0±0.1;0.1
Jun, 1995	Gr. Beta	Cw-5713, 5714	A	3.1±1.4;1.5	3.3±1.4;1.5
Jun, 1995	Gr. Beta	Cw-5713, 5714	A	0.0±1.5;1.5	0.4±1.5;1.5
Jun, 1995	Co-60	Sl-5832, 5833	A	0.0±0.0;0.0	0.1±0.0;0.0
Jun, 1995	Cs-137	Sl-5832, 5833	A	0.1±0.0;0.0	0.0±0.0;0.0
Jun, 1995	Gr. Beta	Sl-5832, 5833	A	4.7±0.5;0.7	4.7±0.5;0.7
Jun, 1995	K-40	Sl-5832, 5833	A	2.9±0.3;0.4	2.4±0.3;0.4
Jun, 1995	Sr-89	Sl-5832, 5833	A	0.0±0.0;0.0	0.0±0.0;0.0
Jun, 1995	Sr-90	Sl-5832, 5833	A	0.0±0.0;0.0	0.0±0.0;0.0
Jun, 1995	Co-60	Ww-5992, 5993	A	0.4±1.2;1.2	0.9±2.7;2.7
Jun, 1995	Cs-137	Ww-5992, 5993	A	-1.4±1.4;1.4	-1.4±3.0;3.0
Jun, 1995	H-3	Ww-5992, 5993	A	67.0±76.2;76.7	94.0±77.3;78.4
Jun, 1995	Co-60	Sl-6205, 6206	A	0.0±0.0;0.0	0.0±0.0;0.0
Jun, 1995	Cs-134	Sl-6205, 6206	A	0.0±0.0;0.0	0.0±0.0;0.0
Jun, 1995	Cs-137	Sl-6205, 6206	A	0.0±0.0;0.0	0.0±0.0;0.0
Jun, 1995	Gr. Beta	Sl-6205, 6206	A	3.3±0.1;0.3	3.3±0.1;0.3
Jun, 1995	I-131(g)	Sl-6205, 6206	A	-0.0±0.0;0.0	-0.0±0.0;0.0
Jun, 1995	K-40	Sl-6205, 6206	A	3.3±0.3;0.5	3.3±0.4;0.5
Jun, 1995	H-3	Sw-6256, 6257	A	423.9±92.0;108.6	585.0±97.9;126.1
Jun, 1995	I-131	Mi-6277, 6278	A	0.1±0.2;0.2	0.1±0.2;0.2
Jun, 1995	K-40	Mi-6277, 6278	A	1,285.5±152.0;231.7	1,355.2±114.0;216.7
Jun, 1995	H-3	Sw-6232, 6233	A	68.4±79.5;80.0	136.7±82.4;84.5
Jun, 1995	Gr. Alpha	Ve-6348, 6349	A	0.3±0.1;0.1	0.2±0.1;0.1
Jun, 1995	Gr. Beta	Ve-6348, 6349	A	3.3±0.1;0.4	3.4±0.1;0.4
Jun, 1995	K-40	Ve-6348, 6349	A	3.1±0.3;0.5	3.0±0.3;0.4
Jun, 1995	I-131	Mi-6419, 6420	A	0.1±0.2;0.2	0.1±0.2;0.2
Jun, 1995	K-40	Mi-6419, 6420	A	1,457.2±175.0;264.4	1,339.3±150.0;236.0
Jun, 1995	I-131	Mi-6521, 6522	A	0.1±0.2;0.2	0.0±0.2;0.2
Jun, 1995	K-40	Mi-6521, 6522	A	1,475.4±123.0;235.4	1,274.6±160.0;235.9
Jun, 1995	K-40	Sl-6500, 6501	A	1.8±0.5;0.5	2.2±0.5;0.6
Jun, 1995	Co-60	Mi-6446, 6447	A	0.2±4.9;4.9	0.4±2.8;2.8
Jun, 1995	Cs-137	Mi-6446, 6447	A	1.3±3.4;3.4	0.1±2.2;2.2
Jun, 1995	I-131	Mi-6446, 6447	A	-0.0±0.2;0.2	0.0±0.2;0.2
Jun, 1995	Gr. Beta	Cw-6474, 6475	A	2.8±1.4;1.5	3.2±1.4;1.5
Jun, 1995	Gr. Beta	Cw-6474, 6475	A	0.0±1.2;1.2	0.1±1.2;1.2
Jun, 1995	I-131	Mi-6564, 6565	A	0.2±0.3;0.3	0.1±0.2;0.2



Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Jun, 1995	Cs-137	Bs-6960, 6961	A	0.1±0.0;0.0	0.0±0.0;0.0
Jun, 1995	K-40	Bs-6960, 6961	A	17.7±0.9;2.0	17.0±1.1;2.0
Jun, 1995	H-3	Ww-6861, 6862	A	1,422.4±128.0;232.0	1,505.1±130.3;242.6
Jun, 1995	I-131	Mi-6840, 6841	A	0.2±0.2;0.2	0.1±0.2;0.2
Jun, 1995	Co-60	Lw-6889, 6890	A	-2.4±3.4;3.4	1.4±1.7;1.8
Jun, 1995	Cs-137	Lw-6889, 6890	A	-0.5±3.0;3.0	0.1±2.2;2.2
Jun, 1995	Gr. Beta	Lw-6889, 6890	A	3.0±0.8;1.0	3.0±0.8;1.0
Jun, 1995	H-3	Sw-7053, 7054	A	73.2±75.7;76.3	126.8±78.2;80.1
Jun, 1995	H-3	Sw-7011, 7012	A	203.6±81.6;86.2	226.8±82.6;88.2
Jun, 1995	I-131	Mi-7032, 7033	A	0.3±0.3;0.3	-0.1±0.3;0.3
Jun, 1995	K-40	Mi-7032, 7033	A	1,577.6±127.0;249.3	1,522.8±164.0;264.2
Jun, 1995	Gr. Beta	Swu-7101, 7102	A	2.0±0.5;0.6	2.1±0.5;0.6
Jun, 1995	H-3	Swu-7101, 7102	A	118.6±85.8;87.3	92.6±84.7;85.6
Jun, 1995	Sr-89	Swu - 7828, 7829	A	0.6±0.8;0.8	0.1±0.7;0.7
Jun, 1995	Sr-90	Swu - 7828, 7829	A	0.2±0.3;0.3	0.2±0.3;0.3
Jun, 1995	Sr-90	Swu - 7828, 7829	A	0.2±0.3;0.3	0.2±0.3;0.3
Jun, 1995	Sr-89	Swu-7828, 7829	A	0.6±0.8;0.8	0.1±0.7;0.7
Jun, 1995	Sr-89	Swu-7828, 7829	A	0.6±0.8;0.8	0.1±0.7;0.7
Jun, 1995	Sr-89	Swu-7828, 7829	A	0.6±0.8;0.8	0.1±0.7;0.7
Jun, 1995	Sr-89	Swu-7828, 7829	A	0.6±0.8;0.8	0.1±0.7;0.7
Jun, 1995	Sr-90	Swu-7828, 7829	A	0.2±0.3;0.3	0.2±0.3;0.3
Jun, 1995	Sr-90	Swu-7828, 7829	A	0.2±0.3;0.3	0.2±0.3;0.3
Jun, 1995	Sr-90	Swu-7828, 7829	A	0.2±0.3;0.3	0.2±0.3;0.3
Jun, 1995	Sr-90	Swu-7828, 7829	A	0.2±0.3;0.3	0.2±0.3;0.3
Jun, 1995	Co-60	Ap-8111, 8112	A	-0.0±0.0;0.0	0.0±0.0;0.0
Jun, 1995	Cs-137	Ap-8111, 8112	A	-0.0±0.0;0.0	0.0±0.0;0.0
Jun, 1995	Gr. Beta	Sw-7080, 7081	A	2.3±0.6;0.7	2.7±0.6;0.7
Jun, 1995	K-40	Sw-7080, 7081	A	61.3±28.3;29.0	95.4±26.0;27.7
Jun, 1995	H-3	Wwt-7122, 7123	A	3.8±81.4;81.4	-13.4±80.6;80.6
Jun, 1995	Gr. Beta	Lw-7239, 7240	A	2.5±0.1;0.4	2.4±0.6;0.7
Jun, 1995	H-3	Ww-7143, 7144	A	539.1±103.3;126.7	436.4±99.5;115.9
Jun, 1995	H-3	Pw-7174, 7175	A	144.1±84.3;86.5	121.4±83.3;84.9
Jun, 1995	H-3	Sw-7216, 7217	A	20.4±81.4;81.5	63.0±83.3;83.8
Jun, 1995	Gr. Beta	Ww-7281, 7282	A	1.8±0.3;0.4	2.1±0.6;0.7
Jun, 1995	H-3	Ww-7281, 7282	A	-24.3±75.2;75.2	10.3±76.8;76.8
Jul, 1995	Co-60	Sw-7387, 7388	A	1.0±1.9;1.9	0.2±1.7;1.7



Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Jul, 1995	Cs-137	Sw-7387, 7388	A	0.6±2.3;2.3	-0.9±2.0;2.0
Jul, 1995	Co-60	Ap-8133, 8134	A	-0.0±0.0;0.0	0.0±0.0;0.0
Jul, 1995	Cs-137	Ap-8133, 8134	A	-0.0±0.0;0.0	0.0±0.0;0.0
Jul, 1995	Sr-89	Ap-7600, 7601	A	0.0±0.0;0.0	0.0±0.0;0.0
Jul, 1995	Sr-90	Ap-7600, 7601	A	-0.0±0.0;0.0	0.0±0.0;0.0
Jul, 1995	Co-60	Mi-7260, 7261	A	0.3±2.9;2.9	0.6±5.2;5.2
Jul, 1995	Cs-137	Mi-7260, 7261	A	1.7±2.6;2.6	-1.5±3.4;3.4
Jul, 1995	I-131	Mi-7260, 7261	A	0.2±0.2;0.2	0.1±0.2;0.2
Jul, 1995	H-3	Ww-7454, 7455	A	7,142.8±243.6;1,001.5	6,985.4±241.2;980.2
Jul, 1995	K-40	Lw - 7487, 7488	A	48.0±14.4;15.2	95.8±39.9;41.0
Jul, 1995	K-40	Lw - 7487, 7488	A	48.0±14.4;15.2	95.8±39.9;41.0
Jul, 1995	Co-60	Lw-7487, 7488	A	0.4±1.1;1.1	0.4±3.0;3.0
Jul, 1995	Cs-134	Lw-7487, 7488	A	0.1±1.1;1.1	-2.4±3.0;3.0
Jul, 1995	Cs-137	Lw-7487, 7488	A	0.5±1.1;1.1	-2.2±2.8;2.9
Jul, 1995	Gr. Beta	Lw-7487, 7488	A	2.1±0.5;0.6	1.9±0.5;0.6
Jul, 1995	I-131	Lw-7487, 7488	A	0.2±0.3;0.3	-0.0±0.3;0.3
Jul, 1995	I-131(g)	Lw-7487, 7488	A	0.3±2.4;2.4	0.9±10.5;10.5
Jul, 1995	K-40	Lw-7487, 7488	A	48.0±14.4;15.2	95.8±39.9;41.0
Jul, 1995	K-40	Lw-7487, 7488	A	48.0±14.4;15.2	95.8±39.9;41.0
Jul, 1995	K-40	Lw-7487, 7488	A	48.0±14.4;15.2	95.8±39.9;41.0
Jul, 1995	K-40	Lw-7487, 7488	A	48.0±14.4;15.2	95.8±39.9;41.0
Jul, 1995	Gr. Beta	Sw-7323, 7324	A	2.3±0.8;0.8	2.6±0.8;0.9
Jul, 1995	H-3	Sw-7323, 7324	A	77.9±84.0;84.7	48.4±82.6;82.9
Jul, 1995	Co-60	F-7366, 7367	A	0.0±0.0;0.0	0.0±0.0;0.0
Jul, 1995	Cs-137	F-7366, 7367	A	0.0±0.0;0.0	0.0±0.0;0.0
Jul, 1995	I-131	Mi-7510, 7511	A	0.3±0.4;0.4	0.1±0.4;0.4
Jul, 1995	Co-60	F-7344, 7345	A	0.0±0.0;0.0	-0.0±0.0;0.0
Jul, 1995	Cs-137	F-7344, 7345	A	0.0±0.0;0.0	0.0±0.0;0.0
Jul, 1995	I-131	Mi-7429, 7430	A	-0.2±0.3;0.3	0.2±0.2;0.2
Jul, 1995	Gr. Beta	F-8154, 8155	A	2.3±0.1;0.2	2.3±0.1;0.2
Jul, 1995	K-40	F-8154, 8155	A	2.2±0.3;0.3	2.1±0.4;0.5
Jul, 1995	Co-60	Mi-7575, 7576	A	-1.0±2.9;2.9	1.6±3.2;3.2
Jul, 1995	Cs-134	Mi-7575, 7576	A	1.7±2.4;2.4	-0.6±2.4;2.4
Jul, 1995	Cs-137	Mi-7575, 7576	A	-0.8±2.5;2.5	1.3±2.4;2.4
Jul, 1995	I-131	Mi-7575, 7576	A	0.2±0.2;0.2	0.1±0.2;0.2
Jul, 1995	I-131(g)	Mi-7575, 7576	A	0.9±2.2;2.2	0.9±2.4;2.4

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Jul, 1995	K-40	Mi-7575, 7576	A	1,481.9±111.0;230.1	1,398.8±106.0;217.8
Jul, 1995	Sr-89	Mi-7575, 7576	A	0.6±1.0;1.0	-0.5±0.9;0.9
Jul, 1995	Sr-90	Mi-7575, 7576	A	1.2±0.4;0.4	1.8±0.4;0.4
Jul, 1995	I-131	Wwt-7621, 7622	A	0.1±0.2;0.2	0.1±0.2;0.2
Jul, 1995	Co-60	Mi-7739, 7740	A	0.9±4.9;4.9	-0.6±4.6;4.6
Jul, 1995	Cs-137	Mi-7739, 7740	A	0.9±3.7;3.7	-0.4±3.1;3.1
Jul, 1995	I-131	Mi-7739, 7740	A	0.2±0.3;0.3	-0.0±0.2;0.2
Jul, 1995	Co-60	G-7805, 7806	A	-0.0±0.0;0.0	0.0±0.0;0.0
Jul, 1995	Cs-134	G-7805, 7806	A	-0.0±0.0;0.0	0.0±0.0;0.0
Jul, 1995	Cs-137	G-7805, 7806	A	0.0±0.0;0.0	0.0±0.0;0.0
Jul, 1995	Gr. Beta	G-7805, 7806	A	5.1±0.2;0.5	5.1±0.2;0.6
Jul, 1995	I-131(g)	G-7805, 7806	A	-0.0±0.0;0.0	-0.0±0.0;0.0
Jul, 1995	K-40	G-7805, 7806	A	6.0±0.6;0.8	5.8±0.5;0.8
Jul, 1995	Gr. Beta	Cw-7648, 7649	A	6.7±1.7;2.0	6.7±1.7;2.0
Jul, 1995	Gr. Beta	Cw-7648, 7649	A	0.7±1.3;1.3	0.2±1.2;1.2
Jul, 1995	H-3	Cw-7648, 7649	A	-64.4±97.5;97.9	-70.2±97.2;97.7
Jul, 1995	Gr. Beta	Ww-7673, 7674	A	14.1±2.2;3.1	14.2±2.2;3.1
Jul, 1995	H-3	Ww-7673, 7674	A	15.3±81.8;81.8	36.4±82.7;82.9
Jul, 1995	Sr-89	Mi-7896, 7897	A	0.4±1.0;1.0	0.2±0.9;0.9
Jul, 1995	Sr-90	Mi-7896, 7897	A	1.7±0.4;0.5	1.3±0.4;0.4
Jul, 1995	H-3	Ww-7967, 7968	A	109.5±84.6;85.9	70.8±82.8;83.4
Jul, 1995	Co-60	Mi-7922, 7923	A	0.6±3.1;3.1	-1.1±4.5;4.5
Jul, 1995	Cs-137	Mi-7922, 7923	A	1.2±2.9;2.9	-0.5±3.4;3.4
Jul, 1995	I-131	Mi-7922, 7923	A	0.1±0.2;0.2	0.0±0.2;0.2
Jul, 1995	Co-60	Lw-7944, 7945	A	0.1±2.2;2.2	1.3±1.9;1.9
Jul, 1995	Cs-137	Lw-7944, 7945	A	0.6±2.2;2.2	-1.4±1.8;1.8
Jul, 1995	Gr. Beta	Lw-7944, 7945	A	4.1±0.9;1.1	4.0±0.9;1.1
Jul, 1995	Co-60	Sw-8704, 8705	A	0.2±2.5;2.5	1.0±1.8;1.8
Jul, 1995	Cs-137	Sw-8704, 8705	A	0.3±3.5;3.5	-0.7±1.9;1.9
Jul, 1995	H-3	Ww-8196, 8197	A	51.4±87.9;88.2	176.0±93.4;96.4
Jul, 1995	Gr. Beta	Swu-8318, 8319	A	2.0±0.5;0.6	1.9±0.5;0.6
Jul, 1995	H-3	Swu-8318, 8319	A	102.7±103.7;104.6	35.5±101.2;101.3
Jul, 1995	K-40	Swu-8318, 8319	A	93.3±39.7;40.8	99.7±49.1;50.1
Jul, 1995	Gr. Alpha	Sp-8540, 8541	A	5.2±1.3;1.4	3.9±1.1;1.1
Jul, 1995	Sr-89	Sp-8540, 8541	A	1,443.1±42.1;150.3	1,419.5±35.3;146.3
Jul, 1995	Sr-90	Sp-8540, 8541	A	15.7±3.8;4.1	19.4±4.1;4.6

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Jul, 1995	Gr. Beta	Ve-8090, 8091	A	2.4±0.1;0.3	2.3±0.1;0.2
Jul, 1995	K-40	Ve-8090, 8091	A	2.8±0.1;0.3	2.8±0.1;0.3
Jul, 1995	Gr. Alpha	Sw-8175, 8176	A	0.5±0.6;0.6	0.7±0.8;0.8
Jul, 1995	Gr. Beta	Sw-8175, 8176	A	0.8±1.1;1.1	0.8±1.1;1.1
Jul, 1995	K-40	Sw-8175, 8176	A	89.8±23.8;25.4	67.4±39.3;39.9
Jul, 1995	H-3	Sw-8251, 8252	A	86.8±78.9;79.8	44.0±76.9;77.2
Jul, 1995	Co-60	Sw-8606, 8607	A	0.1±1.7;1.7	-0.2±2.6;2.6
Jul, 1995	Cs-137	Sw-8606, 8607	A	-1.0±2.0;2.0	-0.7±2.2;2.2
Aug, 1995	K-40	G - 8272, 8273	A	6.7±0.6;0.9	6.7±1.0;1.2
Aug, 1995	Sr-89	G - 8272, 8273	A	0.0±0.0;0.0	-0.0±0.0;0.0
Aug, 1995	Sr-90	G - 8272, 8273	A	0.0±0.0;0.0	0.0±0.0;0.0
Aug, 1995	Gr. Beta	G-8272, 8273	A	6.2±0.3;0.7	6.0±0.3;0.6
Aug, 1995	I-131	Mi-8293, 8294	A	-0.1±0.2;0.2	0.0±0.2;0.2
Aug, 1995	I-131	Mi-8389, 8390	A	-0.0±0.1;0.1	0.1±0.1;0.1
Aug, 1995	K-40	Mi-8389, 8390	A	1,543.8±120.0;241.8	1,369.6±162.0;246.9
Aug, 1995	Co-60	Mi-8413, 8414	A	0.3±3.1;3.1	-2.4±5.2;5.2
Aug, 1995	Cs-137	Mi-8413, 8414	A	-0.7±2.9;2.9	-1.4±3.3;3.3
Aug, 1995	I-131	Mi-8413, 8414	A	0.1±0.2;0.2	0.1±0.2;0.2
Aug, 1995	Co-60	Lw-8440, 8441	A	0.1±2.4;2.4	1.0±1.8;1.8
Aug, 1995	Cs-137	Lw-8440, 8441	A	0.8±2.0;2.0	-0.4±2.1;2.1
Aug, 1995	Gr. Beta	Lw-8440, 8441	A	3.3±1.1;1.2	4.7±1.2;1.4
Aug, 1995	Co-60	Ww-8518, 8519	A	1.5±3.1;3.1	-1.8±3.0;3.0
Aug, 1995	Cs-137	Ww-8518, 8519	A	1.7±2.9;2.9	0.4±2.8;2.8
Aug, 1995	H-3	Ww-8518, 8519	A	10.7±74.0;74.1	-19.6±72.6;72.6
Aug, 1995	Co-60	Ve-8564, 8565	A	0.0±0.0;0.0	0.0±0.0;0.0
Aug, 1995	Cs-137	Ve-8564, 8565	A	0.0±0.0;0.0	-0.0±0.0;0.0
Aug, 1995	Co-60	Mi-8585, 8586	A	-0.5±4.1;4.1	1.9±2.6;2.6
Aug, 1995	Cs-134	Mi-8585, 8586	A	0.1±3.5;3.5	0.9±2.3;2.3
Aug, 1995	Cs-137	Mi-8585, 8586	A	1.8±3.6;3.6	0.2±2.1;2.1
Aug, 1995	I-131	Mi-8585, 8586	A	-0.2±0.2;0.2	0.1±0.2;0.2
Aug, 1995	I-131(g)	Mi-8585, 8586	A	0.1±9.0;9.0	2.4±6.8;6.8
Aug, 1995	K-40	Mi-8585, 8586	A	1,454.6±150.0;248.3	1,478.2±104.0;226.3
Aug, 1995	Sr-89	Mi-8585, 8586	A	0.1±1.1;1.1	-0.1±0.9;0.9
Aug, 1995	Sr-90	Mi-8585, 8586	A	1.9±0.4;0.5	1.6±0.4;0.4
Aug, 1995	Co-60	Mi-8674, 8675	A	-0.8±3.2;3.2	0.5±3.3;3.3
Aug, 1995	Cs-137	Mi-8674, 8675	A	0.8±2.4;2.4	0.4±2.4;2.4

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Aug, 1995	I-131	Mi-8674, 8675	A	0.1±0.3;0.3	-0.1±0.2;0.2
Aug, 1995	H-3	Sw-8648, 8649	A	35.6±75.1;75.3	21.3±74.5;74.5
Aug, 1995	Co-60	F-8754, 8755	A	0.0±0.0;0.0	0.0±0.0;0.0
Aug, 1995	Cs-134	F-8754, 8755	A	-0.0±0.0;0.0	-0.0±0.0;0.0
Aug, 1995	Cs-137	F-8754, 8755	A	0.1±0.0;0.0	0.1±0.0;0.0
Aug, 1995	Gr. Beta	F-8754, 8755	A	13.1±0.3;1.3	12.6±0.3;1.3
Aug, 1995	I-131(g)	F-8754, 8755	A	0.0±0.0;0.0	0.0±0.0;0.0
Aug, 1995	K-40	F-8754, 8755	A	2.8±0.4;0.5	3.3±0.4;0.5
Aug, 1995	Gr. Alpha	Ve-8946, 8947	A	0.2±0.1;0.1	0.2±0.1;0.1
Aug, 1995	Gr. Beta	Ve-8946, 8947	A	4.3±0.2;0.5	4.3±0.2;0.5
Aug, 1995	K-40	Ve-8946, 8947	A	4.0±0.3;0.5	4.0±0.3;0.5
Aug, 1995	Sr-89	Ve - 8802, 8803	A	-0.0±0.0;0.0	-0.0±0.0;0.0
Aug, 1995	Sr-90	Ve - 8802, 8803	A	0.0±0.0;0.0	0.0±0.0;0.0
Aug, 1995	K-40	Ve-8802, 8803	A	2.3±0.2;0.3	2.3±0.3;0.4
Aug, 1995	I-131	Mi-8845, 8846	A	0.0±0.2;0.2	0.1±0.2;0.2
Aug, 1995	Gr. Beta	Cw-8873, 8874	A	1.9±1.4;1.4	4.3±1.6;1.7
Aug, 1995	Gr. Beta	Cw-8873, 8874	A	-0.6±1.1;1.1	-0.0±1.2;1.2
Aug, 1995	I-131	Mi-8902, 8903	A	-0.0±0.2;0.2	0.1±0.3;0.3
Aug, 1995	K-40	Ve-9035, 9036	A	2.2±0.3;0.4	2.4±0.3;0.4
Aug, 1995	H-3	Sw-9056, 9057	A	140.7±79.6;81.9	55.2±75.7;76.0
Aug, 1995	I-131	Mi-9113, 9114	A	0.2±0.3;0.3	0.3±0.3;0.3
Aug, 1995	Co-60	Lw-9079, 9080	A	0.8±2.8;2.8	0.2±3.0;3.0
Aug, 1995	Cs-137	Lw-9079, 9080	A	0.8±2.8;2.8	-0.5±2.7;2.7
Aug, 1995	Gr. Beta	Lw-9079, 9080	A	2.8±0.9;1.0	2.7±0.9;1.0
Aug, 1995	Co-60	Sw-9183, 9184	A	-0.3±3.0;3.0	2.2±4.0;4.1
Aug, 1995	Cs-137	Sw-9183, 9184	A	0.8±3.4;3.4	0.3±4.4;4.4
Aug, 1995	Gr. Beta	Swu-9162, 9163	A	2.5±0.5;0.6	2.5±0.5;0.7
Aug, 1995	H-3	Swu-9162, 9163	A	152.0±88.0;90.4	157.4±83.7;86.4
Aug, 1995	H-3	Ww-9276, 9277	A	1,636.0±131.0;258.2	1,680.8±132.2;264.1
Aug, 1995	Gr. Beta	Ve-9210, 9211	A	4.1±0.2;0.5	4.1±0.2;0.4
Aug, 1995	K-40	Ve-9210, 9211	A	4.6±0.1;0.5	4.6±0.1;0.5
Aug, 1995	Gr. Beta	Dw-9371, 9372	A	5.0±1.2;1.4	4.5±1.2;1.4
Aug, 1995	I-131	Dw-9371, 9372	A	0.1±0.2;0.2	0.1±0.2;0.2
Aug, 1995	I-131	Mi-9297, 9298	A	0.0±0.2;0.2	0.1±0.2;0.2
Aug, 1995	K-40	Mi-9297, 9298	A	1,727.8±180.0;296.0	1,602.7±172.0;277.7
Sep, 1995	H-3	Ww-9252, 9253	A	530.9±98.7;122.3	538.0±99.0;123.1

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Sep, 1995	I-131	Mi-9327, 9328	A	0.1±0.2;0.2	0.1±0.2;0.2
Sep, 1995	Co-60	Ww-9396, 9397	A	2.1±2.5;2.5	0.7±3.0;3.0
Sep, 1995	Cs-137	Ww-9396, 9397	A	2.7±2.7;2.8	0.8±2.6;2.6
Sep, 1995	Gr. Beta	Ww-9396, 9397	A	0.7±1.4;1.4	1.8±1.3;1.3
Sep, 1995	H-3	Ww-9396, 9397	A	14.9±76.6;76.6	48.9±78.2;78.5
Sep, 1995	H-3	Sw - 10075, 10076	A	262.1±88.0;94.9	265.7±88.1;95.3
Sep, 1995	Sr-89	Sw - 10075, 10076	A	-1.1±1.0;1.0	0.8±1.0;1.0
Sep, 1995	Sr-90	Sw - 10075, 10076	A	0.6±0.3;0.3	0.3±0.2;0.2
Sep, 1995	I-131	Mi-9350, 9351	A	-0.1±0.2;0.2	0.1±0.2;0.2
Sep, 1995	K-40	Mi-9350, 9351	A	1,335.3±163.0;244.0	1,521.4±179.0;273.6
Sep, 1995	I-131	Mi - 9463, 9464	A	0.1±0.2;0.2	0.1±0.2;0.2
Sep, 1995	K-40	Mi-9463, 9464	A	1,814.9±139.0;283.3	1,743.1±180.0;297.7
Sep, 1995	K-40	Bs - 9710, 9711	A	8.3±0.4;0.9	8.8±0.3;0.9
Sep, 1995	Gr. Beta	Cw - 9486, 9487	A	0.4±1.2;1.2	-0.9±1.4;1.4
Sep, 1995	Gr. Beta	Cw-9486, 9487	A	3.2±1.5;1.6	3.4±1.6;1.7
Sep, 1995	Cs-137	So - 9562, 9563	A	0.4±0.0;0.0	0.5±0.0;0.1
Sep, 1995	K-40	So - 9562, 9563	A	15.0±0.4;1.6	15.7±0.7;1.7
Sep, 1995	Co-60	Ve-9515, 9516	A	-0.0±0.0;0.0	-0.0±0.0;0.0
Sep, 1995	Cs-137	Ve-9515, 9516	A	-0.0±0.0;0.0	-0.0±0.0;0.0
Sep, 1995	I-131	Mi-9611, 9612	A	0.1±0.2;0.2	0.1±0.2;0.2
Sep, 1995	K-40	Mi-9611, 9612	A	1,463.6±163.0;257.3	1,381.6±117.0;221.3
Sep, 1995	H-3	Sw-9583, 9584	A	191.8±84.4;88.3	59.6±78.6;79.0
Sep, 1995	Gr. Beta	Lw - 9632, 9633	A	4.9±0.9;1.2	4.2±0.8;1.0
Sep, 1995	Co-60	Lw-9632, 9633	A	0.2±2.5;2.5	0.7±1.9;1.9
Sep, 1995	Cs-137	Lw-9632, 9633	A	-1.0±2.5;2.5	0.3±2.3;2.3
Sep, 1995	Cs-137	Lw-9632, 9633	A	0.7±2.7;2.7	2.0±2.0;2.0
Sep, 1995	I-131	Lw-9632, 9633	A	-0.0±0.2;0.2	0.2±0.2;0.2
Sep, 1995	I-131(g)	Lw-9632, 9633	A	-1.2±7.9;7.9	-1.8±6.9;6.9
Sep, 1995	K-40	Lw-9632, 9633	A	73.2±35.1;35.9	84.5±38.9;39.8
Sep, 1995	I-131	Mi-9677, 9678	A	0.1±0.2;0.2	-0.1±0.2;0.2
Sep, 1995	K-40	Mi-9677, 9678	A	1,579.6±149.0;261.4	1,387.5±150.0;241.1
Sep, 1995	Gr. Beta	Cw-9654, 9655	A	3.9±1.5;1.6	4.0±1.5;1.6
Sep, 1995	Gr. Beta	Cw-9654, 9655	A	-0.4±1.1;1.1	0.2±1.1;1.1
Sep, 1995	Co-60	Mi-9758, 9759	A	0.1±2.3;2.3	-1.1±5.6;5.6
Sep, 1995	Cs-137	Mi-9758, 9759	A	0.2±2.1;2.1	3.3±4.1;4.2
Sep, 1995	I-131	Mi-9758, 9759	A	0.0±0.1;0.1	0.1±0.1;0.1



Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Sep, 1995	K-40	Ve-9781, 9782	A	3.7±0.3;0.5	3.9±0.4;0.5
Sep, 1995	Gr. Alpha	Ww - 9917, 9918	A	1.0±1.2;1.2	0.2±1.3;1.3
Sep, 1995	Gr. Beta	Ww - 9917, 9918	A	2.0±1.6;1.6	1.5±1.5;1.6
Sep, 1995	K-40	Ww - 9917, 9918	A	61.6±27.2;27.9	55.5±30.1;30.6
Sep, 1995	Gr. Beta	Swu - 10054, 10055	A	2.9±0.7;0.8	3.0±0.6;0.8
Sep, 1995	H-3	Swu - 10054, 10055	A	272.2±86.6;94.1	186.8±83.0;86.8
Sep, 1995	Gr. Beta	Cw-9848, 9849	A	10.1±2.1;2.6	10.6±2.0;2.6
Sep, 1995	Gr. Beta	Cw-9848, 9849	A	0.6±1.1;1.1	0.1±1.1;1.1
Sep, 1995	H-3	Cw-9848, 9849	A	2.4±75.6;75.6	-2.9±75.4;75.4
Sep, 1995	I-131	Mi-9873, 9874	A	0.1±0.2;0.2	0.3±0.3;0.3
Sep, 1995	Co-60	Sw - 10174, 10175	A	-0.2±1.9;1.9	0.1±3.3;3.3
Sep, 1995	Cs-137	Sw - 10174, 10175	A	-0.1±2.9;2.9	-0.1±2.9;2.9
Sep, 1995	H-3	Ww-9988, 9989	A	126.1±81.2;83.0	18.3±76.3;76.4
Sep, 1995	Gr. Beta	Swt - 10033, 10034	A	1.8±0.5;0.5	1.9±0.5;0.5
Sep, 1995	H-3	P-10216, 10217	A	75.4±78.7;79.4	74.7±78.6;79.2
Sep, 1995	H-3	Sw-10261, 10262	A	279.1±88.4;96.2	300.6±89.3;98.2
Sep, 1995	Gr. Beta	Ve - 10012, 10013	A	5.7±0.3;0.6	5.0±0.4;0.7
Sep, 1995	I-131	Mi-10120, 10121	A	0.1±0.1;0.1	0.0±0.1;0.1
Sep, 1995	K-40	Mi-10120, 10121	A	1,446.6±163.0;255.5	1,300.9±145.0;228.7
Sep, 1995	H-3	Sw-10195, 10196	A	-19.6±74.7;74.7	103.2±80.3;81.5
Sep, 1995	Gr. Beta	Cw - 10240, 10241	A	2.8±1.4;1.5	3.7±1.5;1.6
Sep, 1995	Gr. Beta	Cw - 10240, 10241	A	0.6±1.2;1.2	2.4±1.3;1.3
Sep, 1995	H-3	Sw-10150, 10151	A	119.1±81.0;82.6	129.8±81.5;83.4
Oct, 1995	Gr. Beta	Sw - 10282, 10283	A	2.2±0.5;0.6	1.9±0.5;0.5
Oct, 1995	H-3	Ww - 10349, 10350	A	64.9±80.2;80.7	47.4±79.4;79.7
Oct, 1995	Co-60	Ww-10349, 10350	A	0.1±1.2;1.2	1.5±2.1;2.1
Oct, 1995	Cs-137	Ww-10349, 10350	A	0.8±1.2;1.2	0.1±2.2;2.2
Oct, 1995	K-40	Ve-10370, 10371	A	3.3±0.5;0.6	3.3±0.5;0.6
Oct, 1995	Co-60	F-10491, 10492	A	-0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	Cs-137	F-10491, 10492	A	-0.0±0.0;0.0	-0.0±0.0;0.0
Oct, 1995	Co-60	Ap - 10752, 10753	A	-0.0±0.0;0.0	-0.0±0.0;0.0
Oct, 1995	Cs-134	Ap - 10752, 10753	A	0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	Cs-137	Ap - 10752, 10753	A	-0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	I-131(g)	Ap - 10752, 10753	A	0.0±0.0;0.0	-0.0±0.0;0.0
Oct, 1995	K-40	Ap - 10752, 10753	A	0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	Co-60	Ap - 11141, 11142	A	0.0±0.0;0.0	0.0±0.0;0.0



Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Oct, 1995	Cs-137	Ap - 11141, 11142	A	0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	Co-60	Mi - 10324, 10325	A	0.3±2.2;2.2	-1.0±3.2;3.2
Oct, 1995	Cs-134	Mi - 10324, 10325	A	1.4±1.9;1.9	-1.0±2.6;2.6
Oct, 1995	Cs-137	Mi - 10324, 10325	A	0.3±2.1;2.1	1.0±2.6;2.6
Oct, 1995	I-131	Mi - 10324, 10325	A	0.1±0.1;0.1	0.1±0.2;0.2
Oct, 1995	I-131(g)	Mi - 10324, 10325	A	-0.9±2.7;2.7	1.2±3.3;3.3
Oct, 1995	K-40	Mi - 10324, 10325	A	1,440.7±88.9;215.2	1,432.5±120.0;228.8
Oct, 1995	Sr-89	Mi - 10324, 10325	A	-0.5±0.9;0.9	-1.3±0.9;0.9
Oct, 1995	Sr-90	Mi - 10324, 10325	A	1.7±0.4;0.4	1.7±0.4;0.4
Oct, 1995	I-131	Wwu-10392, 10393	A	0.0±0.2;0.2	0.0±0.2;0.2
Oct, 1995	Co-60	F-10470, 10471	A	0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	Cs-137	F-10470, 10471	A	0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	H-3	Sw - 10413, 10414	A	41.1±77.4;77.6	62.3±78.3;78.8
Oct, 1995	H-3	Ww-10437, 10438	A	81.6±78.1;78.9	-10.6±73.8;73.9
Oct, 1995	I-131	Mi - 10512, 10513	A	0.1±0.1;0.1	0.1±0.2;0.2
Oct, 1995	Co-60	So - 10577, 10578	A	0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	Cs-134	So - 10577, 10578	A	0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	Cs-137	So - 10577, 10578	A	0.2±0.0;0.0	0.2±0.0;0.0
Oct, 1995	Gr. Beta	So - 10577, 10578	A	18.4±3.0;3.5	20.1±3.0;3.6
Oct, 1995	K-40	So - 10577, 10578	A	19.0±0.6;2.0	18.5±0.6;1.9
Oct, 1995	I-131	Mi - 10598, 10599	A	0.0±0.2;0.2	-0.1±0.1;0.1
Oct, 1995	Co-60	F - 10666, 10667	A	-0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	Cs-137	F - 10666, 10667	A	0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	H-3	Ww - 11206, 11207	A	144.1±82.1;84.4	298.7±106.1;113.6
Oct, 1995	Co-60	F - 10687, 10688	A	-0.0±0.0;0.0	0.0±0.0;0.0
Oct, 1995	Cs-137	F - 10687, 10688	A	0.0±0.0;0.0	-0.0±0.0;0.0
Oct, 1995	I-131	Mi - 10710, 10711	A	-0.1±0.2;0.2	0.0±0.2;0.2
Oct, 1995	H-3	Ww - 10797, 10798	A	255.7±88.0;94.6	190.9±85.4;89.3
Oct, 1995	K-40	F - 10882, 10883	A	2.4±0.3;0.4	2.3±0.5;0.5
Oct, 1995	Gr. Beta	Cw - 10826, 10827	A	2.0±1.3;1.4	1.1±1.3;1.3
Oct, 1995	Gr. Beta	Swu - 10923, 10924	A	2.4±0.6;0.7	2.7±0.6;0.7
Oct, 1995	H-3	Swu - 10923, 10924	A	908.5±108.7;164.6	878.3±107.7;160.9
Oct, 1995	Cs-137	F - 10969, 10970	A	0.0±0.0;0.0	0.1±0.0;0.0
Oct, 1995	Gr. Beta	F - 10969, 10970	A	2.3±0.1;0.2	2.2±0.1;0.2
Oct, 1995	K-40	F - 10969, 10970	A	2.1±0.4;0.4	1.9±0.4;0.4
Oct, 1995	Gr. Beta	Cw - 10773, 10774	A	8.4±1.9;2.3	9.9±2.0;2.5

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Oct, 1995	Gr. Beta	Cw - 10773, 10774	A	-0.3±1.1;1.1	0.9±1.1;1.1
Oct, 1995	H-3	Cw - 10773, 10774	A	51.7±77.8;78.1	67.5±78.5;79.0
Oct, 1995	Gr. Beta	Cw - 10858, 10859	A	3.8±1.5;1.6	5.5±1.6;1.8
Oct, 1995	Gr. Beta	Cw - 10858, 10859	A	0.2±1.1;1.1	-0.3±1.1;1.1
Oct, 1995	Cs-137	Bs - 11056, 11057	A	0.3±0.0;0.0	0.3±0.0;0.0
Oct, 1995	K-40	Bs - 11056, 11057	A	18.5±0.4;1.9	18.3±0.4;1.9
Oct, 1995	K-40	F - 11078, 11079	A	2.7±0.2;0.3	2.7±0.1;0.3
Oct, 1995	Gr. Beta	Cw - 11261, 11262	A	3.4±1.5;1.6	3.8±1.5;1.6
Oct, 1995	Gr. Beta	Cw - 11261, 11262	A	-1.0±1.0;1.0	-0.1±1.1;1.1
Oct, 1995	I-131	Mi - 11162, 11163	A	0.2±0.2;0.2	0.1±0.2;0.2
Oct, 1995	Co-60	Lw - 11185, 11186	A	0.3±2.0;2.0	0.1±3.9;3.9
Oct, 1995	Cs-137	Lw - 11185, 11186	A	1.0±2.0;2.0	1.4±3.3;3.3
Oct, 1995	Gr. Beta	Lw - 11185, 11186	A	7.9±1.4;1.8	6.7±1.3;1.6
Oct, 1995	I-131	Mi - 11284, 11285	A	0.2±0.3;0.3	0.2±0.2;0.2
Oct, 1995	K-40	Mi - 11284, 11285	A	1,759.4±182.0;300.6	1,581.9±164.0;270.5
Oct, 1995	Gr. Beta	Dw - 11565, 11566	A	2.4±0.5;0.6	2.6±0.5;0.6
Oct, 1995	I-131	Dw - 11565, 11566	A	-0.1±0.3;0.3	0.2±0.3;0.3
Oct, 1995	Gr. Alpha	Sw - 11309, 11310	A	0.6±0.5;0.5	1.2±0.6;0.6
Oct, 1995	Gr. Beta	Sw - 11309, 11310	A	3.1±0.7;0.8	2.6±0.6;0.7
Oct, 1995	I-131	Mi - 11351, 11352	A	0.0±0.2;0.2	0.0±0.2;0.2
Oct, 1995	K-40	Mi - 11351, 11352	A	1,492.6±166.0;262.2	1,431.8±160.0;252.0
Oct, 1995	H-3	Sw - 11330, 11331	A	83.5±77.8;78.6	106.4±78.9;80.2
Oct, 1995	I-131	Mi - 11407, 11408	A	-0.1±0.2;0.2	0.1±0.2;0.2
Nov, 1995	I-131	Mi - 11433, 11434	A	-0.1±0.2;0.2	0.1±0.1;0.1
Nov, 1995	K-40	Mi - 11433, 11434	A	1,446.0±167.0;258.0	1,450.8±119.0;230.4
Nov, 1995	Sr-89	Mi - 11433, 11434	A	-0.1±1.3;1.3	-0.1±1.2;1.2
Nov, 1995	Sr-90	Mi - 11433, 11434	A	1.9±0.5;0.5	1.9±0.5;0.5
Nov, 1995	Gr. Beta	Bs - 11453, 11454	A	8.3±1.5;1.7	7.1±1.4;1.6
Nov, 1995	K-40	Bs - 11453, 11454	A	13.4±0.7;1.5	14.4±1.0;1.8
Nov, 1995	I-131	Mi - 11476, 11477	A	-0.0±0.2;0.2	0.1±0.2;0.2
Nov, 1995	K-40	Mi - 11476, 11477	A	1,425.6±155.0;248.2	1,379.5±93.1;209.4
Nov, 1995	Sr-89	Mi - 11476, 11477	A	0.2±1.6;1.6	0.7±1.2;1.2
Nov, 1995	Sr-90	Mi - 11476, 11477	A	1.6±0.6;0.6	0.7±0.4;0.4
Nov, 1995	Gr. Beta	Ww - 11657, 11658	A	0.4±0.5;0.5	0.5±0.5;0.5
Nov, 1995	H-3	Ww - 11657, 11658	A	110.2±79.0;80.4	172.2±81.7;85.0
Nov, 1995	H-3	Sw - 11519, 11520	A	86.1±78.0;78.8	10.3±74.5;74.5

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Nov, 1995	Co-60	Ww - 11837, 11838	A	0.7±1.5;1.5	0.1±3.3;3.3
Nov, 1995	Cs-137	Ww - 11837, 11838	A	0.1±1.7;1.7	-0.5±3.0;3.0
Nov, 1995	K-40	Mi - 11588, 11589	A	1,282.9±161.0;237.4	1,390.4±145.0;238.3
Nov, 1995	I-131	Mi - 11611, 11612	A	0.0±0.2;0.2	0.1±0.2;0.2
Nov, 1995	K-40	Mi - 11611, 11612	A	1,368.1±112.0;217.2	1,291.1±158.0;236.2
Nov, 1995	Gr. Beta	Cw - 11678, 11679	A	2.7±1.5;1.6	2.1±1.4;1.4
Nov, 1995	I-131	Mi - 11786, 11787	A	0.1±0.2;0.2	-0.1±0.2;0.2
Nov, 1995	K-40	Mi - 11786, 11787	A	1,493.0±100.0;226.3	1,459.1±170.0;261.3
Nov, 1995	Gr. Beta	Cw - 11865, 11866	A	2.0±1.4;1.4	1.1±1.3;1.4
Nov, 1995	Co-60	Lw - 11926, 11927	A	-0.7±2.2;2.2	-1.4±3.3;3.3
Nov, 1995	Cs-137	Lw - 11926, 11927	A	1.4±2.0;2.0	1.7±2.7;2.7
Nov, 1995	Gr. Beta	Lw - 11926, 11927	A	3.6±0.9;1.1	4.3±1.0;1.2
Nov, 1995	Co-60	Pw - 12451, 12452	A	0.1±1.6;1.6	1.6±2.0;2.0
Nov, 1995	Cs-137	Pw - 12451, 12452	A	-1.1±1.7;1.7	0.9±2.5;2.5
Nov, 1995	H-3	Ww - 12659, 12660	A	10,454.1±283.5;1,449.8	10,315.0±281.7;1,430.9
Nov, 1995	K-40	G - 12184, 12185	A	7.1±0.5;0.9	7.2±0.6;0.9
Nov, 1995	Gr. Beta	Dw - 12229, 12230	A	1.5±0.4;0.5	1.5±0.5;0.5
Nov, 1995	H-3	Dw - 12229, 12230	A	48.4±76.6;76.8	70.9±77.6;78.2
Dec, 1995	Cs-137	So - 12430, 12431	A	0.2±0.1;0.1	0.2±0.1;0.1
Dec, 1995	Gr. Alpha	So - 12430, 12431	A	15.7±4.5;4.7	10.9±4.1;4.2
Dec, 1995	Gr. Beta	So - 12430, 12431	A	22.4±2.9;3.6	23.1±3.0;3.8
Dec, 1995	K-40	So - 12430, 12431	A	16.7±1.3;2.1	17.7±1.4;2.2
Dec, 1995	Co-60	Lw - 12152, 12153	A	1.4±3.3;3.3	3.4±2.1;2.2
Dec, 1995	Cs-137	Lw - 12152, 12153	A	-0.1±3.2;3.2	0.4±2.9;2.9
Dec, 1995	Gr. Beta	Lw - 12152, 12153	A	5.2±1.3;1.5	4.9±1.2;1.4
Dec, 1995	I-131	Mi - 12250, 12251	A	0.1±0.2;0.2	0.2±0.2;0.2
Dec, 1995	K-40	Mi - 12250, 12251	A	1,470.3±163.0;258.0	1,386.6±126.0;226.8
Dec, 1995	Co-60	Ww - 12298, 12299	A	0.4±2.4;2.4	0.2±4.1;4.1
Dec, 1995	Cs-137	Ww - 12298, 12299	A	0.2±2.1;2.1	1.5±2.8;2.8
Dec, 1995	H-3	Ww - 12298, 12299	A	42.8±78.0;78.2	99.8±80.5;81.7
Dec, 1995	Co-60	Lw - 12380, 12381	A	1.3±2.4;2.4	2.2±2.2;2.3
Dec, 1995	Cs-134	Lw - 12380, 12381	A	0.5±2.1;2.1	2.0±2.2;2.2
Dec, 1995	Cs-137	Lw - 12380, 12381	A	0.8±2.5;2.5	1.2±2.4;2.4
Dec, 1995	I-131	Lw - 12380, 12381	A	0.1±0.1;0.1	0.1±0.2;0.2
Dec, 1995	I-131(g)	Lw - 12380, 12381	A	-7.4±13.8;13.8	4.7±13.4;13.4
Dec, 1995	K-40	Lw - 12380, 12381	A	129.0±41.2;43.2	133.0±34.7;37.2

Table A-4. In-house "duplicate" program.

Date Collected	Analysis	Lab Codes <sup>b</sup>	Accepted <sup>c</sup> Rejected	Concentration in pCi/L <sup>a</sup>	
				First Result	Second Result
Dec, 1995	I-131	Mi - 12325, 12326	A	-0.1±0.2;0.2	0.2±0.2;0.2
Dec, 1995	K-40	Mi - 12325, 12326	A	1,409.0±172.0;257.5	1,438.6±169.0;258.5
Dec, 1995	H-3	Ww - 12347, 12348	A	77.3±78.9;79.6	87.6±79.3;80.2
Dec, 1995	Co-60	F - 12688, 12689	A	0.0±0.0;0.0	0.0±0.0;0.0
Dec, 1995	Cs-134	F - 12688, 12689	A	0.0±0.0;0.0	-0.0±0.0;0.0
Dec, 1995	Cs-137	F - 12688, 12689	A	0.0±0.0;0.0	0.0±0.0;0.0
Dec, 1995	I-131(g)	F - 12688, 12689	A	-0.0±0.0;0.0	0.0±0.0;0.0
Dec, 1995	K-40	F - 12688, 12689	A	2.4±0.3;0.4	2.5±0.4;0.4
Dec, 1995	Co-60	Pw - 12945, 12946	A	0.3±2.8;2.8	1.4±2.0;2.0
Dec, 1995	Cs-137	Pw - 12945, 12946	A	1.5±2.6;2.6	0.1±2.2;2.2

<sup>a</sup> All concentrations are reported in pCi/L, except solid samples, which are reported in pCi/g wet. Results are reported as Activity±Counting Error;Total Propagated Uncertainty (TPU).

<sup>b</sup> Lab codes are comprised of the sample media and the sample numbers. Client codes have been eliminated to protect client anonymity.

<sup>c</sup> Acceptance is based on the difference of the two results divided by the pooled standard deviation being less than two, where, the pooled standard deviation is the square root of the sum of the squares of the TPU's.

APPENDIX VI

ERRATA DATA



QUAD CITIES STATION UNIT ONE

ACTUAL 1994

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

PERIOD OF RELEASE - 01/01/94 TO 12/31/94 CALCULATED 03/13/96

INFANT RECEPTOR

TYPE	1ST	2ND	3RD	4TH	ANNUAL
	QUARTER JAN-MAR	QUARTER APR-JUN	QUARTER JUL-SEP	QUARTER OCT-DEC	
GAMMA AIR (MRAD)	1.86E-04 (NNE )	0.00E+00 ( )	5.52E-05 (NNE )	6.73E-06 (NNE )	2.48E-04 (NNE )
BETA AIR (MRAD)	1.70E-05 (ESE )	0.00E+00 ( )	4.64E-06 (ESE )	5.64E-07 (ESE )	2.22E-05 (ESE )
TOT. BODY (MREM)	1.40E-04 (NNE )	0.00E+00 ( )	4.17E-05 (NNE )	5.08E-06 (NNE )	1.87E-04 (NNE )
SKIN (MREM)	1.55E-04 (NNE )	0.30E+00 ( )	4.58E-05 (NNE )	5.57E-06 (NNE )	2.06E-04 (NNE )
ORGAN (MREM)	5.82E-03 (ESE )	4.01E-03 (ESE )	4.13E-03 (ESE )	1.19E-03 (ESE )	1.50E-02 (ESE )

LUNG                      LUNG                      THYROID                      THYROID                      THYROID  
THIS IS A REPORT FOR THE CALENDAR YEAR 1994

COMPLIANCE STATUS - 10CFR 50 APP. I  
INFANT RECEPTOR

----- % OF APP I. -----

	QTRLY	1ST QTR	2ND QTR	3RD QTR	4TH QTR	YRLY	% OF
	OBJ	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	OBJ	APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.01	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.08	0.05	0.06	0.02	15.0	0.10

LUNG                      LUNG                      THYROID                      THYROID                      THYROID

RESULTS BASED UPON:      ODCM ANNEX REVISION      1.0 JANUARY 1994  
                                 ODCM SOFTWARE VERSION      1.1 January 1995  
                                 ODCM DATABASE VERSION      1.1 January 1995



QUAD CITIES STATION UNIT ONE

ACTUAL 1994  
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES  
 PERIOD OF RELEASE - 01/01/94 TO 12/31/94 CALCULATED 03/13/96  
 CHILD RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	1.86E-04 (NNE )	0.00E+00 ( )	5.52E-05 (NNE )	6.73E-06 (NNE )	2.48E-04 (NNE )
BETA AIR (MRAD)	1.70E-05 (ESE )	0.00E+00 ( )	4.64E-06 (ESE )	5.64E-07 (ESE )	2.22E-05 (ESE )
TOT. BODY (MREM)	1.40E-04 (NNE )	0.00E+00 ( )	4.17E-05 (NNE )	5.08E-06 (NNE )	1.87E-04 (NNE )
SKIN (MREM)	1.55E-04 (NNE )	0.00E+00 ( )	4.58E-05 (NNE )	5.57E-06 (NNE )	2.06E-04 (NNE )
ORGAN (MREM)	5.67E-03 (ESE )	5.93E-03 (ESE )	7.41E-03 (ESE )	1.32E-03 (ESE )	2.01E-02 (ESE )
	LUNG	GI_LLI	THYROID	THYROID	THYROID

THIS IS A REPORT FOR THE CALENDAR YEAR 1994

COMPLIANCE STATUS - 10CFR 50 APP. I  
 CHILD RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.01	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.08	0.08	0.10	0.02	15.0	0.13
		LUNG	GI_LLI	THYROID	THYROID		THYROID

RESULTS BASED UPON: ODCM ANNEX REVISION 1.0 JANUARY 1994  
 ODCM SOFTWARE VERSION 1.1 January 1995  
 ODCM DATABASE VERSION 1.1 January 1995

QUAD CITIES STATION UNIT ONE

ACTUAL 1994  
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES  
 PERIOD OF RELEASE - 01/01/94 TO 12/31/94 CALCULATED 03/13/96  
 TEENAGER RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	1.86E-04 (NNE )	0.00E+00 ( )	5.52E-05 (NNE )	6.73E-06 (NNE )	2.48E-04 (NNE )
BETA AIR (MRAD)	1.70E-05 (ESE )	0.00E+00 ( )	4.64E-06 (ESE )	5.64E-07 (ESE )	2.22E-05 (ESE )
TOT. BODY (MREM)	1.40E-04 (NNE )	0.00E+00 ( )	4.17E-05 (NNE )	5.08E-06 (NNE )	1.87E-04 (NNE )
SKIN (MREM)	1.55E-04 (NNE )	0.00E+00 ( )	4.58E-05 (NNE )	5.57E-06 (NNE )	2.06E-04 (NNE )
ORGAN (MREM)	5.32E-03 (ESE )	5.21E-03 (ESE )	6.01E-03 (ESE )	1.10E-03 (ESE )	1.75E-02 (ESE )

LUNG                      GI\_LLI                      GI\_LLI                      THYROID                      GI\_LLI  
 THIS IS A REPORT FOR THE CALENDAR YEAR 1994

COMPLIANCE STATUS - 10CFR 50 APP. I  
 TEENAGER RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.01	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.07	0.07	0.08	0.01	15.0	0.12

LUNG                      GI\_LLI                      GI\_LLI                      THYROID                      GI\_LLI

RESULTS BASED UPON:      ODCM ANNEX REVISION      1.0 JANUARY 1994  
                                  ODCM SOFTWARE VERSION      1.1 January 1995  
                                  ODCM DATABASE VERSION      1.1 January 1995

QUAD CITIES STATION UNIT ONE

ACTUAL 1994  
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES  
 PERIOD OF RELEASE - 01/01/94 TO 12/31/94 CALCULATED 03/13/96  
 ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	1.86E-04 (NNE )	0.00E+00 ( )	5.52E-05 (NNE )	6.73E-06 (NNE )	2.48E-04 (NNE )
BETA AIR (MRAD)	1.70E-05 (ESE )	0.00E+00 ( )	4.64E-06 (ESE )	5.64E-07 (ESE )	2.22E-05 (ESE )
TOT. BODY (MREM)	1.40E-04 (NNE )	0.00E+00 ( )	4.17E-05 (NNE )	5.08E-06 (NNE )	1.87E-04 (NNE )
SKIN (MREM)	1.55E-04 (NNE )	0.00E+00 ( )	4.58E-05 (NNE )	5.57E-06 (NNE )	2.06E-04 (NNE )
ORGAN (MREM)	5.28E-03 (ESE )	5.09E-03 (ESE )	5.75E-03 (ESE )	1.08E-03 (ESE )	1.72E-02 (ESE )

LUNG            GI\_LLI            GI\_LLI            THYROID            GI\_LLI  
 THIS IS A REPORT FOR THE CALENDAR YEAR 1994

COMPLIANCE STATUS - 10CFR 50 APP. I  
 ADULT RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.01	0.00	0.00	0.00	5.0	0.00
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.07	0.07	0.08	0.01	15.0	0.11

LUNG            GI\_LLI            GI\_LLI            THYROID            GI\_LLI

RESULTS BASED UPON:    ODCM ANNEX REVISION    1.0 JANUARY 1994  
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QUAD CITIES STATION UNIT TWO

ACTUAL 1994  
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES  
 PERIOD OF RELEASE - 01/01/94 TO 12/31/94 CALCULATED 03/13/96  
 INFANT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	9.67E-05 (N )	1.05E-04 (NNE )	1.40E-04 (NNE )	2.09E-05 (NNE )	3.63E-04 (NNE )
BETA AIR (MRAD)	9.42E-06 (ESE )	1.00E-05 (ESE )	1.19E-05 (ESE )	1.85E-06 (ESE )	3.31E-05 (ESE )
TOT. BODY (MREM)	7.30E-05 (N )	7.95E-05 (NNE )	1.06E-04 (NNE )	1.58E-05 (NNE )	2.74E-04 (NNE )
SKIN (MREM)	8.12E-05 (NNE )	8.80E-05 (NNE )	1.16E-04 (NNE )	1.74E-05 (NNE )	3.03E-04 (NNE )
ORGAN (MREM)	3.52E-03 (ESE )	4.48E-03 (ESE )	3.40E-03 (ESE )	1.06E-03 (ESE )	1.24E-02 (ESE )

LUNG                      THYROID                      THYROID                      THYROID                      THYROID  
 THIS IS A REPORT FOR THE CALENDAR YEAR 1994

COMPLIANCE STATUS - 10CFR 50 APP. I  
 INFANT RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.01
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.05	0.06	0.05	0.01	15.0	0.08

LUNG                      THYROID                      THYROID                      THYROID                      THYROID

RESULTS BASED UPON:      ODCM ANNEX REVISION      1.0 JANUARY 1994  
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                                  ODCM DATABASE VERSION      1.1 January 1995

QUAD CITIES STATION UNIT TWO

ACTUAL 1994

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

PERIOD OF RELEASE - 01/01/94 TO 12/31/94 CALCULATED 03/13/96  
CHILD RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	9.67E-05 (N )	1.05E-04 (NNE )	1.40E-04 (NNE )	2.09E-05 (NNE )	3.63E-04 (NNE )
BETA AIR (MRAD)	9.42E-06 (ESE )	1.00E-05 (ESE )	1.19E-05 (ESE )	1.85E-06 (ESE )	3.31E-05 (ESE )
TOT. BODY (MREM)	7.30E-05 (N )	7.95E-05 (NNE )	1.06E-04 (NNE )	1.58E-05 (NNE )	2.74E-04 (NNE )
SKIN (MREM)	8.12E-05 (NNE )	8.80E-05 (NNE )	1.16E-04 (NNE )	1.74E-05 (NNE )	3.03E-04 (NNE )
ORGAN (MREM)	3.35E-03 (ESE )	7.95E-03 (ESE )	7.09E-03 (ESE )	1.28E-03 (ESE )	1.96E-02 (ESE )

LUNG                      THYROID      THYROID      THYROID      THYROID  
THIS IS A REPORT FOR THE CALENDAR YEAR 1994

COMPLIANCE STATUS - 10CFR 50 APP. I  
CHILD RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.01
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.04	0.11	0.09	0.02	15.0	0.13

LUNG                      THYROID      THYROID      THYROID      THYROID

RESULTS, BASED UPON:      ODCM ANNEX REVISION      1.0 JANUARY 1994  
ODCM SOFTWARE VERSION 1.1 January 1995  
ODCM DATABASE VERSION 1.1 January 1995



QUAD CITIES STATION UNIT TWO

ACTUAL 1994

MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES

PERIOD OF RELEASE - 01/01/94 TO 12/31/94 CALCULATED 03/13/96

TEENAGER RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	9.67E-05 (N )	1.05E-04 (NNE )	1.40E-04 (NNE )	2.09E-05 (NNE )	3.63E-04 (NNE )
BETA AIR (MRAD)	9.42E-06 (ESE )	1.00E-05 (ESE )	1.19E-05 (ESE )	1.85E-06 (ESE )	3.31E-05 (ESE )
TOT. BODY (MREM)	7.30E-05 (N )	7.95E-05 (NNE )	1.06E-04 (NNE )	1.58E-05 (NNE )	2.74E-04 (NNE )
SKIN (MREM)	8.12E-05 (NNE )	8.80E-05 (NNE )	1.16E-04 (NNE )	1.74E-05 (NNE )	3.03E-04 (NNE )
ORGAN (MREM)	2.96E-03 (ESE )	5.71E-03 (ESE )	4.99E-03 (ESE )	1.02E-03 (ESE )	1.46E-02 (ESE )

LUNG                      THYROID                      THYROID                      THYROID                      THYROID  
THIS IS A REPORT FOR THE CALENDAR YEAR 1994

COMPLIANCE STATUS - 10CFR 50 APP. I  
TEENAGER RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.01
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.04	0.08	0.07	0.01	15.0	0.10

LUNG                      THYROID                      THYROID                      THYROID                      THYROID

RESULTS BASED UPON:      ODCM ANNEX REVISION      1.0 JANUARY 1994  
                                 ODCM SOFTWARE VERSION      1.1 January 1995  
                                 ODCM DATABASE VERSION      1.1 January 1995



QUAD CITIES STATION UNIT TWO

ACTUAL 1994  
 MAXIMUM DOSES RESULTING FROM AIRBORNE RELEASES  
 PERIOD OF RELEASE - 01/01/94 TO 12/31/94 CALCULATED 03/13/96  
 ADULT RECEPTOR

TYPE	1ST QUARTER JAN-MAR	2ND QUARTER APR-JUN	3RD QUARTER JUL-SEP	4TH QUARTER OCT-DEC	ANNUAL
GAMMA AIR (MRAD)	9.67E-05 (N )	1.05E-04 (NNE )	1.40E-04 (NNE )	2.09E-05 (NNE )	3.63E-04 (NNE )
BETA AIR (MRAD)	9.42E-06 (ESE )	1.00E-05 (ESE )	1.19E-05 (ESE )	1.85E-06 (ESE )	3.31E-05 (ESE )
TOT. BODY (MREM)	7.30E-05 (N )	7.95E-05 (NNE )	1.06E-04 (NNE )	1.58E-05 (NNE )	2.74E-04 (NNE )
SKIN (MREM)	8.12E-05 (NNE )	8.80E-05 (NNE )	1.16E-04 (NNE )	1.74E-05 (NNE )	3.03E-04 (NNE )
ORGAN (MREM)	2.96E-03 (ESE )	5.37E-03 (ESE )	4.64E-03 (ESE )	9.96E-04 (ESE )	1.39E-02 (ESE )

LUNG                      THYROID      THYROID      THYROID      THYROID  
 THIS IS A REPORT FOR THE CALENDAR YEAR 1994

COMPLIANCE STATUS - 10CFR 50 APP. I  
 ADULT RECEPTOR

----- % OF APP I. -----

	QTRLY OBJ	1ST QTR JAN-MAR	2ND QTR APR-JUN	3RD QTR JUL-SEP	4TH QTR OCT-DEC	YRLY OBJ	% OF APP. I
GAMMA AIR (MRAD)	5.0	0.00	0.00	0.00	0.00	10.0	0.00
BETA AIR (MRAD)	10.0	0.00	0.00	0.00	0.00	20.0	0.00
TOT. BODY (MREM)	2.5	0.00	0.00	0.00	0.00	5.0	0.01
SKIN (MREM)	7.5	0.00	0.00	0.00	0.00	15.0	0.00
ORGAN (MREM)	7.5	0.04	0.07	0.06	0.01	15.0	0.09

LUNG                      THYROID      THYROID      THYROID                      THYROID

RESULTS BASED UPON:      ODCM ANNEX REVISION      1.0 JANUARY 1994  
                                  ODCM SOFTWARE VERSION      1.1 January 1995  
                                  ODCM DATABASE VERSION      1.1 January 1995