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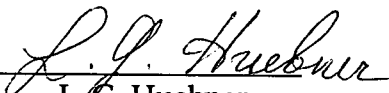
REPORT  
TO  
IOWA ELECTRIC LIGHT AND POWER  
CEDAR RAPIDS, IOWA

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP)  
FOR  
THE DUANE ARNOLD ENERGY CENTER  
CEDAR RAPIDS, IOWA  
Docket No. 50-331

ANNUAL REPORT - PART II  
DATA TABULATIONS AND ANALYSES  
JANUARY - DECEMBER 1992

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PROJECT NO. 8001

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## 1.0 INTRODUCTION

The following constitutes a supplement to the Annual Report for the Radiological Environmental Monitoring Program conducted at the Duane Arnold Energy Center, Cedar Rapids, Iowa in 1992. Results of completed analyses are presented in the attached tables.

For information regarding sampling locations, type and frequency of collection, and sample codes, please see Table 5.3 - 5.5 and Figures 5-1 and 5-2 of Part I.

## 2.0 LISTING OF MISSED SAMPLES

| Sample Type                | Location | Expected<br>Collection<br>Date | Reason                  |
|----------------------------|----------|--------------------------------|-------------------------|
| Milk                       | D-93     | 01-07-92                       | Animal dry.             |
| Milk                       | D-101    | 01-07-92                       | Animal dry.             |
| Air Particulate            | D-3      | 01-23-92                       | Power out at substation |
| Air Particulate            | D-3      | 01-29-92                       | Power out at substation |
| Milk                       | D-101    | 02-04-92                       | Animal dry.             |
| Milk                       | D-101    | 03-03-92                       | Animal dry.             |
| Air Particulate            | D-11     | 03-12-92                       | Filter paper missing .  |
| Milk                       | D-101    | 04-07-92                       | Animal dry.             |
| Air Particulate/Air Iodine | D-15     | 04-16-92                       | No power available.     |
| Air Particulate/Air Iodine | D-15     | 04-23-92                       | No power available.     |
| Milk                       | D-101    | 05-04-92                       | Animal dry.             |
| Milk                       | D-101    | 05-19-92                       | Animal dry.             |
| TLD                        | D-8      | 2nd Qtr 1992                   | TLD lost in the field.  |
| Air Particulate            | D-3      | 11-12-92                       | Filter paper missing.   |
| TLD                        | D-41     | 4th Qtr. 1992                  | TLD lost in the field.  |

### 3.0 DATA TABLES

Table 1. Airborne particulates collected at Location D-1 (Cedar Rapids), analysis for gross beta. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected              | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------------|--------------------------|----------------------------------|
| 01-09-92              | 280                      | 0.034±0.004                      | 07-09-92                    | 288                      | 0.017±0.003                      |
| 01-16-92              | 283                      | 0.030±0.004                      | 07-16-92                    | 288                      | 0.014±0.003                      |
| 01-23-92              | 280                      | 0.029±0.004                      | 07-23-92                    | 287                      | 0.011±0.003                      |
| 01-29-92 <sup>a</sup> | 239                      | 0.023±0.004                      | 07-30-92                    | 288                      | 0.018±0.003                      |
| 02-06-92 <sup>b</sup> | 321                      | 0.026±0.003                      | 08-06-92                    | 288                      | 0.010±0.003                      |
| 02-13-92              | 279                      | 0.019±0.004                      | 08-13-92                    | 290                      | 0.021±0.003                      |
| 02-20-92              | 281                      | 0.023±0.002                      | 08-20-92                    | 287                      | 0.016±0.003                      |
| 02-27-92              | 279                      | 0.023±0.004                      | 08-27-92                    | 295                      | 0.025±0.004                      |
| 03-05-92              | 280                      | 0.020±0.003                      | 09-03-92                    | 293                      | 0.021±0.004                      |
| 03-12-92              | 279                      | 0.015±0.003                      | 09-10-92                    | 293                      | 0.021±0.003                      |
| 03-19-92              | 281                      | 0.017±0.004                      | 09-16-92 <sup>a</sup>       | 252                      | 0.020±0.004                      |
| 03-26-92              | 280                      | 0.018±0.004                      | 09-24-92 <sup>b</sup>       | 341                      | 0.021±0.003                      |
| 04-02-92              | 280                      | <u>0.014±0.003</u>               | <u>09-30-92<sup>a</sup></u> | <u>248</u>               | <u>0.024±0.004</u>               |
| 1st Qtr. mean ± s.d.  |                          | 0.022±0.006                      | 3rd Qtr. mean ± s.d.        |                          | 0.018±0.005                      |
| 04-09-92              | 277                      | 0.018±0.003                      | 10-08-92 <sup>b</sup>       | 336                      | 0.029±0.004                      |
| 04-16-92              | 279                      | 0.020±0.004                      | 10-15-92                    | 295                      | 0.018±0.003                      |
| 04-23-92              | 280                      | 0.010±0.003                      | 10-22-92                    | 294                      | 0.032±0.004                      |
| 04-30-92              | 279                      | 0.019±0.004                      | 10-29-92                    | 296                      | 0.038±0.004                      |
| 05-07-92              | 282                      | 0.015±0.003                      | 11-05-92                    | 294                      | 0.011±0.003                      |
| 05-14-92              | 279                      | 0.018±0.003                      | 11-12-92                    | 290                      | 0.027±0.004                      |
| 05-21-92              | 279                      | 0.018±0.002                      | 11-18-92 <sup>a</sup>       | 253                      | 0.020±0.004                      |
| 05-28-92              | 287                      | 0.015±0.003                      | 11-25-92                    | 297                      | 0.016±0.003                      |
| 06-04-92              | 290                      | 0.027±0.004                      | 12-03-92 <sup>b</sup>       | 334                      | 0.036±0.004                      |
| 06-11-92              | 289                      | 0.022±0.004                      | 12-10-92                    | 290                      | 0.024±0.003                      |
| 06-17-92 <sup>a</sup> | 247                      | 0.030±0.004                      | 12-17-92                    | 292                      | 0.039±0.004                      |
| 06-25-92 <sup>b</sup> | 329                      | 0.017±0.003                      | 12-23-92                    | 249                      | 0.052±0.004                      |
| 07-02-92              | 288                      | <u>0.023±0.004</u>               | <u>12-30-92</u>             | <u>292</u>               | <u>0.033±0.004</u>               |
| 2nd Qtr. mean ± s.d.  |                          | 0.019±0.005                      | 4th Qtr. mean ± s.d.        |                          | 0.029±0.011                      |

<sup>a</sup> Six-day collection.

<sup>b</sup> Eight-day collection.

Table 2. Airborne particulates and iodine collected at Location D-2 (Marion), analysis for gross beta and iodine-131<sup>a</sup>. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------|--------------------------|----------------------------------|
| 01-09-92              | 275                      | 0.030±0.004                      | 07-09-92              | 293                      | 0.018±0.003                      |
| 01-16-92              | 278                      | 0.034±0.004                      | 07-16-92              | 291                      | 0.015±0.003                      |
| 01-23-92              | 276                      | 0.029±0.004                      | 07-23-92              | 291                      | 0.013±0.003                      |
| 01-29-92 <sup>b</sup> | 237                      | 0.021±0.004                      | 07-30-92              | 291                      | 0.018±0.003                      |
| 02-06-92 <sup>c</sup> | 317                      | 0.020±0.003                      | 08-06-92              | 291                      | 0.012±0.003                      |
| 02-13-92              | 278                      | 0.018±0.004                      | 08-13-92              | 291                      | 0.016±0.003                      |
| 02-20-92              | 277                      | 0.023±0.003                      | 08-20-92              | 287                      | 0.021±0.003                      |
| 02-27-92              | 276                      | 0.024±0.004                      | 08-27-92              | 284                      | 0.026±0.004                      |
| 03-05-92              | 278                      | 0.022±0.003                      | 09-03-92              | 285                      | 0.022±0.004                      |
| 03-12-92              | 296                      | 0.017±0.003                      | 09-10-92              | 286                      | 0.020±0.004                      |
| 03-19-92              | 298                      | 0.019±0.003                      | 09-16-92 <sup>b</sup> | 248                      | 0.017±0.004                      |
| 03-26-92              | 296                      | 0.020±0.004                      | 09-24-92 <sup>c</sup> | 332                      | 0.019±0.003                      |
| 04-02-92              | 297                      | 0.016±0.003                      | 09-30-92 <sup>b</sup> | 239                      | 0.021±0.004                      |
| 1st Qtr. mean ± s.d.  |                          | 0.022±0.005                      | 3rd Qtr. mean ± s.d.  |                          | 0.018±0.004                      |
| 04-09-92              | 295                      | 0.020±0.003                      | 10-08-92 <sup>c</sup> | 326                      | 0.030±0.004                      |
| 04-16-92              | 298                      | 0.020±0.003                      | 10-15-92              | 286                      | 0.019±0.003                      |
| 04-23-92              | 297                      | 0.007±0.002                      | 10-22-92              | 286                      | 0.031±0.004                      |
| 04-30-92              | 295                      | 0.021±0.004                      | 10-29-92              | 287                      | 0.043±0.004                      |
| 05-07-92              | 297                      | 0.021±0.003                      | 11-05-92              | 288                      | 0.008±0.003                      |
| 05-14-92              | 297                      | 0.025±0.004                      | 11-12-92              | 301                      | 0.028±0.004                      |
| 05-21-92              | 297                      | 0.022±0.002                      | 11-18-92 <sup>b</sup> | 263                      | 0.022±0.004                      |
| 05-28-92              | 291                      | 0.020±0.004                      | 11-25-92              | 297                      | 0.013±0.003                      |
| 06-04-92              | 293                      | 0.027±0.004                      | 12-03-92 <sup>c</sup> | 348                      | 0.040±0.004                      |
| 06-11-92              | 290                      | 0.004±0.002 <sup>d</sup>         | 12-10-92              | 302                      | 0.025±0.003                      |
| 06-17-92 <sup>b</sup> | 250                      | 0.026±0.004                      | 12-17-92              | 302                      | 0.040±0.004                      |
| 06-25-92 <sup>c</sup> | 333                      | 0.019±0.003                      | 12-23-92 <sup>b</sup> | 277                      | 0.052±0.005                      |
| 07-02-92              | 291                      | <0.004 <sup>e</sup>              | 12-30-92              | 306                      | 0.035±0.004                      |
| 2nd Qtr. mean ± s.d.  |                          | 0.019±0.007                      | 4th Qtr. mean ± s.d.  |                          | 0.030±0.012                      |

<sup>a</sup> Iodine-131 concentrations are <0.07 pCi/m<sup>3</sup> unless noted otherwise.

<sup>b</sup> Six-day collection.

<sup>c</sup> Eight-day collection.

<sup>d</sup> partial filter received.

<sup>e</sup> sample light; filter not sealed in holder.

Table 3. Airborne particulates collected at Location D-3 (Hiawatha), analysis for gross beta. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected              | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------------|--------------------------|----------------------------------|
| 01-09-92              | 294                      | 0.034±0.004                      | 07-09-92                    | 283                      | 0.016±0.003                      |
| 01-16-92              | 171 <sup>a</sup>         | 0.041±0.006                      | 07-16-92                    | 282                      | 0.016±0.003                      |
| 01-23-92              | ND <sup>b</sup>          |                                  | 07-23-92                    | 283                      | 0.012±0.003                      |
| 01-29-92              | ND <sup>b</sup>          |                                  | 07-30-92                    | 282                      | 0.021±0.003                      |
| 02-06-92 <sup>c</sup> | 37                       | 0.030±0.019                      | 08-06-92                    | 284                      | 0.012±0.003                      |
| 02-13-92              | 297                      | 0.019±0.004                      | 08-13-92                    | 284                      | 0.017±0.003                      |
| 02-20-92              | 296                      | 0.024±0.002                      | 08-20-92                    | 281                      | 0.018±0.003                      |
| 02-27-92              | 296                      | 0.022±0.003                      | 08-27-92                    | 282                      | 0.027±0.004                      |
| 03-05-92              | 282                      | 0.024±0.004                      | 09-03-92                    | 281                      | 0.023±0.004                      |
| 03-12-92              | 278                      | 0.018±0.003                      | 09-10-92                    | 283                      | 0.024±0.004                      |
| 03-19-92              | 281                      | 0.017±0.004                      | 09-16-92 <sup>d</sup>       | 241                      | 0.021±0.004                      |
| 03-26-92              | 279                      | 0.019±0.004                      | 09-24-92 <sup>e</sup>       | 327                      | 0.022±0.003                      |
| 04-02-92              | 280                      | <u>0.017±0.003</u>               | <u>09-30-92<sup>d</sup></u> | <u>239</u>               | <u>0.023±0.004</u>               |
| 1st Qtr. mean ± s.d.  |                          | 0.024±0.008                      | 3rd Qtr. mean ± s.d.        |                          | 0.019±0.005                      |
| 04-09-92              | 278                      | 0.017±0.003                      | 10-08-92 <sup>e</sup>       | 323                      | 0.034±0.004                      |
| 04-16-92              | 280                      | 0.018±0.003                      | 10-15-92                    | 283                      | 0.022±0.004                      |
| 04-23-92              | 280                      | 0.010±0.003                      | 10-22-92                    | 284                      | 0.038±0.004                      |
| 04-30-92              | 278                      | 0.019±0.004                      | 10-29-92                    | 284                      | 0.053±0.005                      |
| 05-07-92              | 280                      | 0.018±0.003                      | 11-05-92                    | 284                      | 0.008±0.003                      |
| 05-14-92              | 280                      | 0.020±0.004                      | 11-12-92                    | 281                      | 0.026±0.004                      |
| 05-21-92              | 279                      | 0.022±0.003                      | 11-18-92 <sup>d</sup>       | 244                      | 0.026±0.004                      |
| 05-28-92              | 283                      | 0.013±0.003                      | 11-25-92                    | 281                      | 0.015±0.003                      |
| 06-04-92              | 284                      | 0.026±0.004                      | 12-03-92 <sup>e</sup>       | 328                      | 0.042±0.004                      |
| 06-11-92              | 282                      | 0.021±0.004                      | 12-10-92                    | 285                      | 0.026±0.003                      |
| 06-17-92 <sup>d</sup> | 243                      | 0.031±0.004                      | 12-17-92                    | 284                      | 0.044±0.004                      |
| 06-25-92 <sup>e</sup> | 322                      | 0.018±0.003                      | 12-23-92 <sup>d</sup>       | 245                      | 0.056±0.005                      |
| 07-02-92              | 284                      | <u>0.022±0.004</u>               | <u>12-30-92</u>             | <u>287</u>               | <u>0.040±0.004</u>               |
| 2nd Qtr. mean ± s.d.  |                          | 0.020±0.005                      | 4th Qtr. mean ± s.d.        |                          | 0.033±0.014                      |

<sup>a</sup> Low volume due to interrupted power service at sampler site.

<sup>b</sup> ND = no data; no power to substation.

<sup>c</sup> Power restored 02-05-92.

<sup>d</sup> Six day collection.

<sup>e</sup> Eight day collection.

Table 4. Airborne particulates and iodine collected at Location D-5 (Palo), analysis for gross beta and iodine-131<sup>a</sup>. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected              | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------------|--------------------------|----------------------------------|
| 01-09-92              | 282                      | 0.030±0.004                      | 07-09-92                    | 295                      | 0.017±0.003                      |
| 01-16-92              | 283                      | 0.030±0.004                      | 07-16-92                    | 293                      | 0.016±0.003                      |
| 01-23-92              | 283                      | 0.032±0.004                      | 07-23-92                    | 294                      | 0.009±0.003                      |
| 01-29-92 <sup>b</sup> | 241                      | 0.020±0.004                      | 07-30-92                    | 294                      | 0.017±0.003                      |
| 02-06-92 <sup>c</sup> | 324                      | 0.022±0.003                      | 08-06-92                    | 294                      | 0.013±0.003                      |
| 02-13-92              | 282                      | 0.019±0.004                      | 08-13-92                    | 295                      | 0.016±0.003                      |
| 02-20-92              | 283                      | 0.022±0.002                      | 08-20-92                    | 285                      | 0.024±0.004                      |
| 02-27-92              | 305                      | 0.022±0.003                      | 08-27-92                    | 285                      | 0.031±0.004                      |
| 03-05-92              | 305                      | 0.023±0.003                      | 09-03-92                    | 284                      | 0.029±0.004                      |
| 03-12-92              | 306                      | 0.016±0.003                      | 09-10-92                    | 286                      | 0.025±0.004                      |
| 03-19-92              | 307                      | 0.018±0.003                      | 09-16-92 <sup>b</sup>       | 242                      | 0.022±0.004                      |
| 03-26-92              | 305                      | 0.021±0.003                      | 09-24-92 <sup>c</sup>       | 332                      | 0.027±0.003                      |
| 04-02-92              | 305                      | <u>0.010±0.003</u>               | <u>09-30-92<sup>b</sup></u> | <u>241</u>               | <u>0.030±0.004</u>               |
| 1st Qtr. mean ± s.d.  |                          | 0.022±0.006                      | 3rd Qtr. mean ± s.d.        |                          | 0.021±0.007                      |
| 04-09-92              | 302                      | 0.016±0.003                      | 10-08-92 <sup>c</sup>       | 326                      | 0.039±0.004                      |
| 04-16-92              | 306                      | 0.014±0.003                      | 10-15-92                    | 286                      | 0.024±0.004                      |
| 04-23-92              | 305                      | 0.007±0.002                      | 10-22-92                    | 285                      | 0.046±0.004                      |
| 04-30-92              | 306                      | 0.016±0.003                      | 10-29-92                    | 288                      | 0.058±0.005                      |
| 05-07-92              | 304                      | 0.015±0.003                      | 11-05-92                    | 287                      | 0.014±0.003                      |
| 05-14-92              | 296                      | 0.021±0.003                      | 11-12-92                    | ND <sup>d</sup>          | ND <sup>d</sup>                  |
| 05-21-92              | 293                      | 0.020±0.002                      | 11-18-92 <sup>b</sup>       | 245                      | 0.021±0.004                      |
| 05-28-92              | 293                      | 0.019±0.003                      | 11-19-92                    | 41 <sup>e</sup>          | 0.014±0.011                      |
| 06-04-92              | 295                      | 0.029±0.004                      | 11-25-92 <sup>b</sup>       | 282                      | 0.012±0.003                      |
| 06-11-92              | 293                      | 0.022±0.004                      | 12-03-92 <sup>c</sup>       | 329                      | 0.035±0.004                      |
| 06-17-92 <sup>b</sup> | 252                      | 0.030±0.004                      | 12-10-92                    | 285                      | 0.025±0.003                      |
| 06-25-92 <sup>c</sup> | 336                      | 0.018±0.003                      | 12-17-92                    | 283                      | 0.040±0.004                      |
| 07-02-92              | 295                      | <u>0.027±0.004</u>               | 12-23-92 <sup>b</sup>       | 244                      | 0.044±0.005                      |
|                       |                          |                                  | <u>12-30-92</u>             | <u>287</u>               | <u>0.034±0.004</u>               |
| 2nd Qtr. mean ± s.d.  |                          | 0.020±0.006                      | 4th Qtr. mean ± s.d.        |                          | 0.031±0.014                      |

<sup>a</sup> Iodine-131 concentrations are <0.07 pCi/m<sup>3</sup> unless noted otherwise.

<sup>b</sup> Six-day collection.

<sup>c</sup> Eight-day collection.

<sup>d</sup> ND = No Data; filter paper missing.

<sup>e</sup> Filter paper changed out due to practice emergency drill, one day sample.

Table 5. Airborne particulates collected at Location D-6 (Center Point), analysis for gross beta. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------|--------------------------|----------------------------------|
| 01-09-92              | 301                      | 0.032±0.004                      | 07-09-92              | 280                      | 0.015±0.003                      |
| 01-16-92              | 303                      | 0.032±0.004                      | 07-16-92              | 279                      | 0.014±0.003                      |
| 01-23-92              | 303                      | 0.030±0.004                      | 07-23-92              | 280                      | 0.009±0.003                      |
| 01-29-92 <sup>a</sup> | 258                      | 0.028±0.004                      | 07-30-92              | 280                      | 0.021±0.003                      |
| 02-06-92 <sup>b</sup> | 347                      | 0.024±0.003                      | 08-06-92              | 281                      | 0.013±0.003                      |
| 02-13-92              | 302                      | 0.021±0.004                      | 08-13-92              | 277                      | 0.017±0.003                      |
| 02-20-92              | 303                      | 0.027±0.002                      | 08-20-92              | 280                      | 0.019±0.003                      |
| 02-27-92              | 293                      | 0.023±0.003                      | 08-27-92              | 280                      | 0.029±0.004                      |
| 03-05-92              | 295                      | 0.020±0.003                      | 09-03-92              | 287                      | 0.022±0.004                      |
| 03-12-92              | 124 <sup>c</sup>         | 0.024±0.007                      | 09-10-92              | 290                      | 0.021±0.004                      |
| 03-19-92              | 254                      | 0.018±0.004                      | 09-16-92 <sup>a</sup> | 245                      | 0.020±0.004                      |
| 03-26-92              | 276                      | 0.023±0.004                      | 09-24-92 <sup>b</sup> | 334                      | 0.020±0.003                      |
| 04-02-92              | 276                      | 0.018±0.003                      | 09-30-92 <sup>a</sup> | 244                      | 0.020±0.004                      |
| 1st Qtr. mean ± s.d.  |                          | 0.025±0.005                      | 3rd Qtr. mean ± s.d.  |                          | 0.018±0.005                      |
| 04-09-92              | 276                      | 0.019±0.003                      | 10-08-92 <sup>b</sup> | 329                      | 0.036±0.004                      |
| 04-16-92              | 278                      | 0.021±0.004                      | 10-15-92              | 289                      | 0.016±0.003                      |
| 04-23-92              | 277                      | 0.011±0.003                      | 10-22-92              | 289                      | 0.030±0.004                      |
| 04-30-92              | 277                      | 0.018±0.004                      | 10-29-92              | 291                      | 0.044±0.004                      |
| 05-07-92              | 276                      | 0.019±0.004                      | 11-05-92              | 290                      | 0.010±0.003                      |
| 05-14-92              | 268                      | 0.022±0.004                      | 11-12-92              | 285                      | 0.027±0.004                      |
| 05-21-92              | 138 <sup>d</sup>         | 0.022±0.004                      | 11-18-92 <sup>a</sup> | 245                      | 0.023±0.004                      |
| 05-28-92              | 239                      | 0.022±0.004                      | 11-25-92              | 279                      | 0.015±0.003                      |
| 06-04-92              | 281                      | 0.029±0.004                      | 12-03-92 <sup>b</sup> | 329                      | 0.040±0.004                      |
| 06-11-92              | 279                      | 0.024±0.004                      | 12-10-92              | 285                      | 0.024±0.003                      |
| 06-17-92 <sup>a</sup> | 240                      | 0.034±0.004                      | 12-17-92              | 284                      | 0.036±0.004                      |
| 06-25-92 <sup>b</sup> | 320                      | 0.016±0.003                      | 12-23-92 <sup>a</sup> | 245                      | 0.048±0.005                      |
| 07-02-92              | 280                      | 0.025±0.004                      | 12-30-92              | 287                      | 0.039±0.004                      |
| 2nd Qtr. mean ± s.d.  |                          | 0.022±0.006                      | 4th Qtr. mean ± s.d.  |                          | 0.030±0.012                      |

<sup>a</sup> Six-day collection.

<sup>b</sup> Eight-day collection.

<sup>c</sup> Low volume due to sampler pump malfunction.

<sup>d</sup> Low volume due to interrupted power supply.

Table 6. Airborne particulates and iodine collected at Location D-7 (Shellsburg), analysis for gross beta and iodine-131<sup>a</sup>. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------|--------------------------|----------------------------------|
| 01-09-92              | 290                      | 0.032±0.004                      | 07-09-92              | 289                      | 0.015±0.003                      |
| 01-16-92              | 291                      | 0.034±0.004                      | 07-16-92              | 287                      | 0.014±0.003                      |
| 01-23-92              | 292                      | 0.037±0.004                      | 07-23-92              | 288                      | 0.011±0.003                      |
| 01-29-92 <sup>b</sup> | 248                      | 0.026±0.004                      | 07-30-92              | 288                      | 0.020±0.003                      |
| 02-06-92 <sup>c</sup> | 334                      | 0.026±0.003                      | 08-06-92              | 288                      | 0.012±0.003                      |
| 02-13-92              | 291                      | 0.020±0.004                      | 08-13-92              | 290                      | 0.013±0.003                      |
| 02-20-92              | 291                      | 0.029±0.003                      | 08-20-92              | 289                      | 0.012±0.003                      |
| 02-27-92              | 294                      | 0.022±0.003                      | 08-27-92              | 153 <sup>d</sup>         | 0.024±0.006                      |
| 03-05-92              | 294                      | 0.020±0.003                      | 09-03-92              | 287                      | 0.022±0.004                      |
| 03-12-92              | 294                      | 0.015±0.003                      | 09-10-92              | 289                      | 0.023±0.004                      |
| 03-19-92              | 295                      | 0.015±0.003                      | 09-16-92 <sup>b</sup> | 245                      | 0.021±0.004                      |
| 03-26-92              | 293                      | 0.017±0.003                      | 09-24-92 <sup>c</sup> | 335                      | 0.017±0.003                      |
| 04-02-92              | 299                      | 0.011±0.003                      | 09-30-92 <sup>b</sup> | 244                      | 0.021±0.004                      |
| 1st Qtr. mean ± s.d.  |                          | 0.023±0.008                      | 3rd Qtr. mean ± s.d.  |                          | 0.017±0.005                      |
| 04-09-92              | 291                      | 0.018±0.003                      | 10-08-92 <sup>c</sup> | 329                      | 0.032±0.004                      |
| 04-16-92              | 295                      | 0.016±0.003                      | 10-15-92              | 282                      | 0.018±0.003                      |
| 04-23-92              | 294                      | 0.009±0.003                      | 10-22-92              | 288                      | 0.032±0.004                      |
| 04-30-92              | 295                      | 0.018±0.003                      | 10-29-92              | 290                      | 0.044±0.004                      |
| 05-07-92              | 292                      | 0.017±0.003                      | 11-05-92              | 290                      | 0.004±0.003                      |
| 05-14-92              | 296                      | 0.020±0.003                      | 11-12-92              | 289                      | 0.016±0.003                      |
| 05-21-92              | 287                      | 0.021±0.002                      | 11-18-92 <sup>b</sup> | 247                      | 0.016±0.004                      |
| 05-28-92              | 288                      | 0.017±0.003                      | 11-25-92              | 283                      | 0.006±0.003                      |
| 06-04-92              | 290                      | 0.028±0.004                      | 12-03-92 <sup>c</sup> | 332                      | 0.032±0.003                      |
| 06-11-92              | 288                      | 0.021±0.004                      | 12-10-92              | 285                      | 0.025±0.003                      |
| 06-17-92 <sup>b</sup> | 247                      | 0.033±0.004                      | 12-17-92              | 281                      | 0.035±0.004                      |
| 06-25-92 <sup>c</sup> | 330                      | 0.018±0.003                      | 12-23-92 <sup>b</sup> | 247                      | 0.042±0.005                      |
| 07-02-92              | 289                      | 0.024±0.004                      | 12-30-92              | 287                      | 0.010±0.003                      |
| 2nd Qtr. mean ± s.d.  |                          | 0.020±0.006                      | 4th Qtr. mean ± s.d.  |                          | 0.024±0.013                      |

<sup>a</sup> Iodine-131 concentrations are <0.07 pCi/m<sup>3</sup> unless noted otherwise.

<sup>b</sup> Six-day collection.

<sup>c</sup> Eight-day collection.

<sup>d</sup> Low volume due to power outage at pump site.

Table 7. Airborne particulates and iodine collected at Location D-8 (Urbana), analysis for gross beta and iodine-131<sup>a</sup>. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------|--------------------------|----------------------------------|
| 01-09-92              | 276                      | 0.025±0.004                      | 07-09-92              | 292                      | 0.015±0.003                      |
| 01-16-92              | 277                      | 0.032±0.004                      | 07-16-92              | 290                      | 0.014±0.003                      |
| 01-23-92              | 277                      | 0.028±0.004                      | 07-23-92              | 291                      | 0.011±0.003                      |
| 01-29-92 <sup>b</sup> | 236                      | 0.019±0.004                      | 07-30-92              | 291                      | 0.020±0.003                      |
| 02-06-92 <sup>c</sup> | 318                      | 0.022±0.003                      | 08-06-92              | 291                      | 0.013±0.003                      |
| 02-13-92              | 276                      | 0.023±0.004                      | 08-13-92              | 292                      | 0.019±0.003                      |
| 02-20-92              | 277                      | 0.026±0.003                      | 08-20-92              | 285                      | 0.025±0.004                      |
| 02-27-92              | 297                      | 0.024±0.004                      | 08-27-92              | 285                      | 0.028±0.004                      |
| 03-05-92              | 298                      | 0.021±0.003                      | 09-03-92              | 284                      | 0.024±0.004                      |
| 03-12-92              | 296                      | 0.014±0.003                      | 09-10-92              | 287                      | 0.024±0.004                      |
| 03-19-92              | 298                      | 0.020±0.004                      | 09-16-92 <sup>b</sup> | 242                      | 0.022±0.004                      |
| 03-26-92              | 296                      | 0.020±0.004                      | 09-24-92 <sup>c</sup> | 332                      | 0.022±0.003                      |
| 04-02-92              | 296                      | 0.016±0.003                      | 09-30-92 <sup>b</sup> | 241                      | 0.025±0.004                      |
| 1st Qtr. mean ± s.d.  |                          | 0.022±0.005                      | 3rd Qtr. mean ± s.d.  |                          | 0.020±0.005                      |
| 04-09-92              | 296                      | 0.016±0.003                      | 10-08-92 <sup>c</sup> | 326                      | 0.037±0.004                      |
| 04-16-92              | 298                      | 0.017±0.003                      | 10-15-92              | 286                      | 0.018±0.003                      |
| 04-23-92              | 297                      | 0.004±0.002                      | 10-22-92              | 286                      | 0.031±0.004                      |
| 04-30-92              | 297                      | 0.018±0.003                      | 10-29-92              | 287                      | 0.049±0.003                      |
| 05-07-92              | 295                      | 0.017±0.003                      | 11-05-92              | 287                      | 0.011±0.003                      |
| 05-14-92              | 299                      | 0.020±0.003                      | 11-12-92              | 285                      | 0.028±0.004                      |
| 05-21-92              | 296                      | 0.023±0.002                      | 11-18-92 <sup>b</sup> | 245                      | 0.025±0.004                      |
| 05-28-92              | 290                      | 0.013±0.003                      | 11-25-92              | 282                      | 0.014±0.003                      |
| 06-04-92              | 295                      | 0.026±0.003                      | 12-03-92 <sup>c</sup> | 328                      | 0.040±0.004                      |
| 06-11-92              | 290                      | 0.020±0.003                      | 12-10-92              | 285                      | 0.026±0.003                      |
| 06-17-92 <sup>b</sup> | 250                      | 0.030±0.004                      | 12-17-92              | 284                      | 0.040±0.004                      |
| 06-25-92 <sup>c</sup> | 333                      | 0.018±0.003                      | 12-23-92 <sup>b</sup> | 245                      | 0.060±0.005                      |
| 07-02-92              | 292                      | 0.025±0.004                      | 12-30-92              | 287                      | 0.034±0.004                      |
| 2nd Qtr. mean ± s.d.  |                          | 0.019±0.006                      | 4th Qtr. mean ± s.d.  |                          | 0.032±0.14                       |

<sup>a</sup> Iodine-131 concentrations are <0.07 pCi/m<sup>3</sup> unless noted otherwise.

<sup>b</sup> Six-day collection.

<sup>c</sup> Eight-day collection.

Table 8. Airborne particulates collected at Location D-10 (Atkins), analysis for gross beta. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected              | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------------|--------------------------|----------------------------------|
| 01-09-92              | 309                      | 0.045±0.004                      | 07-09-92                    | 285                      | 0.016±0.003                      |
| 01-16-92              | 309                      | 0.037±0.004                      | 07-16-92                    | 286                      | 0.014±0.003                      |
| 01-23-92              | 308                      | 0.034±0.004                      | 07-23-92                    | 286                      | 0.015±0.003                      |
| 01-29-92 <sup>a</sup> | 264                      | 0.025±0.004                      | 07-30-92                    | 285                      | 0.018±0.003                      |
| 02-06-92 <sup>b</sup> | 353                      | 0.033±0.003                      | 08-06-92                    | 285                      | 0.013±0.003                      |
| 02-13-92              | 308                      | 0.027±0.004                      | 08-13-92                    | 288                      | 0.019±0.003                      |
| 02-20-92              | 309                      | 0.030±0.003                      | 08-20-92                    | 284                      | 0.021±0.003                      |
| 02-27-92              | 308                      | 0.026±0.004                      | 08-27-92                    | 286                      | 0.030±0.004                      |
| 03-05-92              | 291                      | 0.024±0.003                      | 09-03-92                    | 273                      | 0.024±0.004                      |
| 03-12-92              | 290                      | 0.016±0.003                      | 09-10-92                    | 274                      | 0.020±0.004                      |
| 03-19-92              | 293                      | 0.020±0.004                      | 09-16-92 <sup>a</sup>       | 234                      | 0.020±0.004                      |
| 03-26-92              | 292                      | 0.022±0.004                      | 09-24-92 <sup>b</sup>       | 316                      | 0.017±0.003                      |
| 04-02-92              | 291                      | <u>0.016±0.003</u>               | <u>09-30-92<sup>a</sup></u> | <u>232</u>               | <u>0.021±0.004</u>               |
| 1st Qtr. mean ± s.d.  |                          | 0.027±0.008                      | 3rd Qtr. mean ± s.d.        |                          | 0.019±0.004                      |
| 04-09-92              | 290                      | 0.017±0.003                      | 10-08-92 <sup>b</sup>       | 313                      | 0.032±0.004                      |
| 04-16-92              | 289                      | 0.019±0.003                      | 10-15-92                    | 275                      | 0.018±0.003                      |
| 04-23-92              | 292                      | 0.010±0.003                      | 10-22-92                    | 292                      | 0.030±0.004                      |
| 04-30-92              | 290                      | 0.018±0.003                      | 10-29-92                    | 293                      | 0.040±0.004                      |
| 05-07-92              | 293                      | 0.020±0.003                      | 11-05-92                    | 273                      | 0.007±0.003                      |
| 05-14-92              | 294                      | 0.017±0.003                      | 11-12-92                    | 286                      | 0.027±0.004                      |
| 05-21-92              | 293                      | 0.017±0.002                      | 11-18-92 <sup>a</sup>       | 236                      | 0.023±0.004                      |
| 05-28-92              | 290                      | 0.016±0.003                      | 11-25-92                    | 283                      | 0.004±0.002                      |
| 06-04-92              | 292                      | 0.024±0.003                      | 12-03-92 <sup>b</sup>       | 327                      | 0.008±0.002                      |
| 06-11-92              | 286                      | 0.020±0.003                      | 12-10-92                    | 285                      | 0.029±0.004                      |
| 06-17-92 <sup>a</sup> | 244                      | 0.031±0.004                      | 12-17-92                    | 285                      | 0.046±0.004                      |
| 06-25-92 <sup>b</sup> | 326                      | 0.016±0.004                      | 12-23-92 <sup>a</sup>       | 245                      | 0.057±0.005                      |
| 07-02-92              | 286                      | <u>0.023±0.004</u>               | <u>12-30-92</u>             | <u>286</u>               | <u>0.036±0.004</u>               |
| 2nd Qtr. mean ± s.d.  |                          | 0.019±0.005                      | 4th Qtr. mean ± s.d.        |                          | 0.028±0.016                      |

<sup>a</sup> Six-day collection.

<sup>b</sup> Eight-day collection.

Table 9. Airborne particulates and iodine collected at Location D-11 (Toddville), analysis for gross beta and iodine-131<sup>a</sup>. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------|--------------------------|----------------------------------|
| 01-09-92              | 284                      | 0.036±0.004                      | 07-09-92              | 290                      | 0.009±0.003                      |
| 01-16-92              | 287                      | 0.033±0.004                      | 07-16-92              | 287                      | 0.016±0.003                      |
| 01-23-92              | 284                      | 0.026±0.003                      | 07-23-92              | 289                      | 0.010±0.003                      |
| 01-29-92 <sup>b</sup> | 244                      | 0.025±0.004                      | 07-30-92              | 288                      | 0.014±0.003                      |
| 02-06-92 <sup>c</sup> | 327                      | 0.023±0.003                      | 08-06-92              | 287                      | 0.012±0.003                      |
| 02-13-92              | 286                      | 0.018±0.004                      | 08-13-92              | 293                      | 0.015±0.003                      |
| 02-20-92              | 285                      | 0.027±0.003                      | 08-20-92              | 285                      | 0.019±0.003                      |
| 02-27-92              | 285                      | 0.024±0.004                      | 08-27-92              | 288                      | 0.026±0.004                      |
| 03-05-92              | 287                      | 0.019±0.003                      | 09-03-92              | 290                      | 0.024±0.004                      |
| 03-12-92              | ND <sup>d</sup>          |                                  | 09-10-92              | 292                      | 0.020±0.003                      |
| 03-19-92              | 284                      | 0.022±0.004                      | 09-16-92 <sup>b</sup> | 248                      | 0.018±0.004                      |
| 03-26-92              | 281                      | 0.022±0.004                      | 09-24-92 <sup>c</sup> | 337                      | 0.019±0.003                      |
| 04-02-92              | 282 <sup>e</sup>         | <0.004                           | 09-30-92 <sup>b</sup> | 246                      | 0.022±0.004                      |
| 1st Qtr. mean ± s.d.  |                          | 0.025±0.006                      | 3rd Qtr. mean ± s.d.  |                          | 0.017±0.005                      |
| 04-09-92              | 277                      | 0.021±0.003                      | 10-08-92 <sup>c</sup> | 333                      | 0.030±0.004                      |
| 04-16-92              | 283                      | 0.020±0.003                      | 10-15-92              | 291                      | 0.016±0.003                      |
| 04-23-92              | 284                      | 0.013±0.003                      | 10-22-92              | 292                      | 0.028±0.004                      |
| 04-30-92              | 281                      | 0.018±0.003                      | 10-29-92              | 293                      | 0.043±0.004                      |
| 05-07-92              | 282                      | 0.023±0.004                      | 11-05-92              | 292                      | 0.010±0.007                      |
| 05-14-92              | 283                      | 0.023±0.004                      | 11-12-92              | 289                      | 0.022±0.003                      |
| 05-21-92              | 282                      | 0.023±0.003                      | 11-18-92 <sup>b</sup> | 251                      | 0.017±0.004                      |
| 05-28-92              | 287                      | 0.014±0.003                      | 11-25-92              | 281                      | 0.016±0.003                      |
| 06-04-92              | 291                      | 0.030±0.004                      | 12-03-92 <sup>c</sup> | 329                      | 0.041±0.004                      |
| 06-11-92              | 286                      | 0.024±0.004                      | 12-10-92              | 285                      | 0.030±0.004                      |
| 06-17-92 <sup>b</sup> | 248                      | 0.027±0.004                      | 12-17-92              | 282                      | 0.045±0.004                      |
| 06-25-92 <sup>c</sup> | 328                      | 0.018±0.003                      | 12-23-92 <sup>b</sup> | 245                      | 0.053±0.005                      |
| 07-02-92              | 289                      | 0.024±0.004                      | 12-30-92              | 287                      | 0.039±0.004                      |
| 2nd Qtr. mean ± s.d.  |                          | 0.021±0.005                      | 4th Qtr. mean ± s.d.  |                          | 0.030±0.013                      |

<sup>a</sup> Iodine-131 concentrations are <0.07 pCi/m<sup>3</sup> unless noted otherwise.

<sup>b</sup> Six-day collection.

<sup>c</sup> Eight-day collection.

<sup>d</sup> ND = no data; filter missing from holder.

<sup>e</sup> Filter very light.

Table 10. Airborne particulates collected at Location D-13 (Alburnett), analysis for gross beta . Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------|--------------------------|----------------------------------|
| 01-09-92              | 304                      | 0.029±0.004                      | 07-09-92              | 289                      | 0.014±0.003                      |
| 01-16-92              | 306                      | 0.033±0.004                      | 07-16-92              | 287                      | 0.014±0.003                      |
| 01-23-92              | 306                      | 0.026±0.003                      | 07-23-92              | 288                      | 0.010±0.003                      |
| 01-29-92 <sup>a</sup> | 261                      | 0.025±0.004                      | 07-30-92              | 288                      | 0.017±0.003                      |
| 02-06-92 <sup>b</sup> | 350                      | 0.023±0.003                      | 08-06-92              | 288                      | 0.010±0.003                      |
| 02-13-92              | 305                      | 0.018±0.003                      | 08-13-92              | 290                      | 0.017±0.003                      |
| 02-20-92              | 306                      | 0.024±0.002                      | 08-20-92              | 285                      | 0.025±0.004                      |
| 02-27-92              | 288                      | 0.022±0.003                      | 08-27-92              | 284                      | 0.029±0.004                      |
| 03-05-92              | 289                      | 0.019±0.003                      | 09-03-92              | 284                      | 0.022±0.004                      |
| 03-12-92              | 288                      | 0.012±0.003                      | 09-10-92              | 287                      | 0.024±0.004                      |
| 03-19-92              | 289                      | 0.019±0.004                      | 09-16-92 <sup>a</sup> | 220                      | 0.028±0.005                      |
| 03-26-92              | 288                      | 0.018±0.003                      | 09-24-92 <sup>b</sup> | 330                      | 0.022±0.003                      |
| 04-02-92              | 288                      | <u>0.012±0.003</u>               | 09-30-92 <sup>a</sup> | <u>241</u>               | <u>0.028±0.004</u>               |
| 1st Qtr. mean ± s.d.  |                          | 0.022±0.006                      | 3rd Qtr. mean ± s.d.  |                          | 0.020±0.007                      |
| 04-09-92              | 287                      | 0.021±0.003                      | 10-08-92 <sup>b</sup> | 326                      | 0.040±0.004                      |
| 04-16-92              | 289                      | 0.020±0.003                      | 10-15-92              | 286                      | 0.025±0.004                      |
| 04-23-92              | 289                      | 0.008±0.003                      | 10-22-92              | 286                      | 0.042±0.004                      |
| 04-30-92              | 289                      | 0.017±0.003                      | 10-29-92              | 288                      | 0.057±0.005                      |
| 05-07-92              | 287                      | 0.021±0.003                      | 11-05-92              | 287                      | 0.012±0.003                      |
| 05-14-92              | 290                      | 0.016±0.003                      | 11-12-92              | 285                      | 0.034±0.004                      |
| 05-21-92              | 287                      | 0.021±0.002                      | 11-18-92 <sup>a</sup> | 245                      | 0.020±0.004                      |
| 05-28-92              | 288                      | 0.017±0.003                      | 11-25-92              | 282                      | 0.011±0.003                      |
| 06-04-92              | 290                      | 0.029±0.004                      | 12-03-92 <sup>b</sup> | 325                      | 0.034±0.004                      |
| 06-11-92              | 287                      | 0.023±0.004                      | 12-10-92              | 285                      | 0.028±0.004                      |
| 06-17-92 <sup>a</sup> | 247                      | 0.031±0.004                      | 12-17-92              | 284                      | 0.037±0.004                      |
| 06-25-92 <sup>b</sup> | 330                      | 0.019±0.003                      | 12-23-92 <sup>a</sup> | 245                      | 0.051±0.005                      |
| 07-02-92              | 289                      | <u>0.020±0.004</u>               | <u>12-30-92</u>       | <u>287</u>               | <u>0.038±0.004</u>               |
| 2nd Qtr. mean ± s.d.  |                          | 0.020±0.006                      | 4th Qtr. mean ± s.d.  |                          | 0.033±0.014                      |

<sup>a</sup> Six-day collection.

<sup>b</sup> Eight-day collection.

Table 11. Airborne particulates and iodine collected at Location D-15 (On-site), analysis for gross beta and iodine-131<sup>a</sup>. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------|--------------------------|----------------------------------|
| 01-09-92              | 282                      | 0.024±0.003                      | 07-09-92              | 285                      | 0.013±0.003                      |
| 01-16-92              | 283                      | 0.018±0.003                      | 07-16-92              | 285                      | 0.012±0.003                      |
| 01-23-92              | 283                      | 0.022±0.003                      | 07-23-92              | 286                      | 0.011±0.003                      |
| 01-29-92 <sup>b</sup> | 241                      | 0.018±0.004                      | 07-30-92              | 283                      | 0.015±0.003                      |
| 02-06-92 <sup>c</sup> | 324                      | 0.020±0.003                      | 08-06-92              | 286                      | 0.006±0.003                      |
| 02-13-92              | 283                      | 0.016±0.004                      | 08-13-92              | 288                      | 0.010±0.003                      |
| 02-20-92              | 283                      | 0.021±0.002                      | 08-20-92              | 284                      | 0.014±0.003                      |
| 02-27-92              | 283                      | 0.018±0.003                      | 08-27-92              | 292                      | 0.025±0.004                      |
| 03-05-92              | 288                      | 0.020±0.003                      | 09-03-92              | 290                      | 0.017±0.003                      |
| 03-12-92              | 288                      | 0.016±0.003                      | 09-10-92              | 292                      | 0.019±0.003                      |
| 03-19-92              | 288                      | 0.017±0.003                      | 09-16-92 <sup>b</sup> | 248                      | 0.018±0.004                      |
| 03-26-92              | 288                      | 0.015±0.003                      | 09-24-92 <sup>c</sup> | 337                      | 0.017±0.003                      |
| 04-02-92              | 288                      | 0.012±0.003                      | 09-30-92 <sup>b</sup> | 246                      | 0.017±0.005                      |
| 1st Qtr. mean ± s.d.  |                          | 0.018±0.003                      | 3rd Qtr. mean ± s.d.  |                          | 0.015±0.005                      |
| 04-09-92              | 133 <sup>d</sup>         | 0.014±0.006                      | 10-08-92 <sup>c</sup> | 333                      | 0.023±0.003                      |
| 04-16-92              | NS <sup>e</sup>          |                                  | 10-15-92              | 292                      | 0.007±0.003                      |
| 04-23-92              | NS <sup>e</sup>          |                                  | 10-22-92              | 291                      | 0.026±0.004                      |
| 04-30-92              | 236                      | 0.013±0.004                      | 10-29-92              | 293                      | 0.034±0.004                      |
| 05-07-92              | 288                      | 0.019±0.003                      | 11-05-92              | 293                      | 0.007±0.003                      |
| 05-14-92              | 289                      | 0.019±0.003                      | 11-12-92              | 291                      | 0.020±0.003                      |
| 05-21-92              | 288                      | 0.018±0.002                      | 11-18-92 <sup>b</sup> | 250                      | 0.018±0.004                      |
| 05-28-92              | 286                      | 0.012±0.003                      | 11-25-92              | 284                      | 0.018±0.003                      |
| 06-04-92              | 285                      | 0.024±0.004                      | 12-03-92 <sup>c</sup> | 328                      | 0.031±0.003                      |
| 06-11-92              | 286                      | 0.019±0.003                      | 12-10-92              | 285                      | 0.024±0.003                      |
| 06-17-92 <sup>b</sup> | 246                      | 0.025±0.004                      | 12-17-92              | 283                      | 0.037±0.004                      |
| 06-25-92 <sup>c</sup> | 326                      | 0.014±0.002                      | 12-23-92 <sup>b</sup> | 244                      | 0.044±0.005                      |
| 07-02-92              | 285                      | 0.018±0.003                      | 12-30-92              | 287                      | 0.031±0.004                      |
| 2nd Qtr. mean ± s.d.  |                          | 0.018±0.004                      | 4th Qtr. mean ± s.d.  |                          | 0.025±0.011                      |

<sup>a</sup> Iodine-131 concentrations are <0.07 pCi/m<sup>3</sup> unless noted otherwise.

<sup>b</sup> Six-day collection.

<sup>c</sup> Eight-day collection.

<sup>d</sup> Low volume due to power interruption at pump site; LLD for I-131 not met due to low volume; I-131 concentration <0.11 pCi/m<sup>3</sup>

<sup>e</sup> No power available.

Table 12. Airborne particulates and iodine collected at Location D-16 (Onsite), analysis for gross beta. Collection: Weekly.

| Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) | Date Collected        | Volume (m <sup>3</sup> ) | Gross Beta (pCi/m <sup>3</sup> ) |
|-----------------------|--------------------------|----------------------------------|-----------------------|--------------------------|----------------------------------|
| 01-09-92              | 294                      | 0.031±0.004                      | 07-09-92              | 282                      | 0.012±0.003                      |
| 01-16-92              | 294                      | 0.032±0.004                      | 07-16-92              | 282                      | 0.011±0.003                      |
| 01-23-92              | 294                      | 0.032±0.004                      | 07-23-92              | 283                      | 0.009±0.003                      |
| 01-29-92 <sup>a</sup> | 251                      | 0.020±0.004                      | 07-30-92              | 283                      | 0.014±0.003                      |
| 02-06-92 <sup>b</sup> | 336                      | 0.025±0.003                      | 08-06-92              | 283                      | 0.005±0.003                      |
| 02-13-92              | 294                      | 0.020±0.004                      | 08-13-92              | 285                      | 0.015±0.003                      |
| 02-20-92              | 294                      | 0.025±0.002                      | 08-20-92              | 287                      | 0.015±0.003                      |
| 02-27-92              | 297                      | 0.022±0.003                      | 08-27-92              | 289                      | 0.025±0.004                      |
| 03-05-92              | 297                      | 0.023±0.003                      | 09-03-92              | 287                      | 0.019±0.004                      |
| 03-12-92              | 297                      | 0.023±0.003                      | 09-10-92              | 289                      | 0.023±0.004                      |
| 03-19-92              | 297                      | 0.019±0.003                      | 09-16-92 <sup>a</sup> | 245                      | 0.016±0.004                      |
| 03-26-92              | 297                      | 0.019±0.003                      | 09-24-92 <sup>b</sup> | 334                      | 0.017±0.003                      |
| 04-02-92              | 297                      | <u>0.019±0.003</u>               | 09-30-92 <sup>a</sup> | <u>244</u>               | <u>0.017±0.004</u>               |
| 1st Qtr. mean ± s.d.  |                          | 0.024±0.005                      | 3rd Qtr. mean ± s.d.  |                          | 0.015±0.005                      |
| 04-09-92              | 295                      | 0.020±0.003                      | 10-08-92 <sup>b</sup> | 330                      | 0.027±0.004                      |
| 04-16-92              | 297                      | 0.019±0.003                      | 10-15-92              | 289                      | 0.015±0.003                      |
| 04-23-92              | 298                      | 0.009±0.003                      | 10-22-92              | 288                      | 0.028±0.004                      |
| 04-30-92              | 296                      | 0.016±0.003                      | 10-29-92              | 290                      | 0.038±0.004                      |
| 05-07-92              | 296                      | 0.019±0.003                      | 11-05-92              | 290                      | 0.009±0.003                      |
| 05-14-92              | 283                      | 0.019±0.003                      | 11-15-92              | 281                      | 0.024±0.004                      |
| 05-21-92              | 282                      | 0.018±0.002                      | 11-18-92 <sup>a</sup> | 242                      | 0.019±0.004                      |
| 05-28-92              | 283                      | 0.013±0.003                      | 11-25-92              | 279                      | 0.015±0.003                      |
| 06-04-92              | 282                      | 0.020±0.003                      | 12-03-92 <sup>b</sup> | 324                      | 0.036±0.004                      |
| 06-11-92              | 283                      | 0.020±0.003                      | 12-10-92              | 283                      | 0.027±0.004                      |
| 06-17-92 <sup>a</sup> | 243                      | 0.026±0.004                      | 12-17-92              | 282                      | 0.036±0.004                      |
| 06-25-92 <sup>b</sup> | 323                      | 0.015±0.003                      | 12-23-92 <sup>a</sup> | 242                      | 0.055±0.005                      |
| 07-02-92              | 282                      | <u>0.020±0.004</u>               | 12-30-92              | <u>274</u>               | <u>0.037±0.004</u>               |
| 2nd Qtr. mean ± s.d.  |                          | 0.018±0.004                      | 4th Qtr. mean ± s.d.  |                          | 0.028±0.012                      |

<sup>a</sup> Six-day collection.

<sup>b</sup> Eight-day collection.

Table 13. Airborne particulate samples, quarterly composites of weekly samples, analysis for gamma-emitting isotopes, 1992.

|                          | Sample Description and Activity (pCi/m <sup>3</sup> ) |             |             |             |
|--------------------------|-------------------------------------------------------|-------------|-------------|-------------|
|                          | 1st. Qtr.                                             | 2nd Qtr.    | 3rd Qtr.    | 4th Qtr.    |
|                          | D-1                                                   |             |             |             |
| Lab Code                 | DAP-3021                                              | DAP-3136    | DAP-3274    | DAP-3382    |
| Volume (m <sup>3</sup> ) | 3642                                                  | 3685        | 3738        | 3812        |
| Be-7                     | 0.041±0.009                                           | 0.081±0.018 | 0.058±0.013 | 0.047±0.018 |
| Nb-95                    | <0.0017                                               | <0.0024     | <0.0024     | <0.0038     |
| Zr-95                    | <0.0019                                               | <0.0038     | <0.0028     | <0.0043     |
| Ru-103                   | <0.0009                                               | <0.0017     | <0.0011     | <0.0033     |
| Ru-106                   | <0.0062                                               | <0.013      | <0.0097     | <0.022      |
| Cs-134                   | <0.0006                                               | <0.0015     | <0.0006     | <0.0025     |
| Cs-137                   | <0.0007                                               | <0.0014     | <0.0011     | <0.0023     |
| Ce-141                   | <0.0010                                               | <0.0018     | <0.0013     | <0.0040     |
| Ce-144                   | <0.0026                                               | <0.0057     | <0.0027     | <0.012      |
|                          | D-2                                                   |             |             |             |
| Lab Code                 | DAP-3022                                              | DAP-3137    | DAP-3275    | DAP-3383    |
| Volume (m <sup>3</sup> ) | 3679                                                  | 3824        | 3709        | 3869        |
| Be-7                     | 0.071±0.015                                           | 0.070±0.012 | 0.059±0.027 | 0.048±0.016 |
| Nb-95                    | <0.0022                                               | <0.0019     | <0.0054     | <0.0020     |
| Zr-95                    | <0.0025                                               | <0.0032     | <0.0057     | <0.0042     |
| Ru-103                   | <0.0016                                               | <0.0017     | <0.0035     | <0.0024     |
| Ru-106                   | <0.0094                                               | <0.012      | <0.019      | <0.018      |
| Cs-134                   | <0.0009                                               | <0.0012     | <0.0016     | <0.0019     |
| Cs-137                   | <0.0013                                               | <0.0013     | <0.0026     | <0.0016     |
| Ce-141                   | <0.0025                                               | <0.0025     | <0.0048     | <0.0034     |
| Ce-144                   | <0.0078                                               | <0.0073     | <0.014      | <0.0097     |

Table 13. Airborne particulate samples, quarterly composites of weekly samples, analysis for gamma-emitting isotopes, 1992 (continued)

|                          | Sample Description and Activity (pCi/m <sup>3</sup> ) |             |             |             |
|--------------------------|-------------------------------------------------------|-------------|-------------|-------------|
|                          | 1st. Qtr.                                             | 2nd Qtr.    | 3rd Qtr.    | 4th Qtr.    |
|                          | D-3                                                   |             |             |             |
| Lab Code                 | DAP-3023                                              | DAP-3138    | DAP-3276    | DAP-3384    |
| Volume (m <sup>3</sup> ) | 2791                                                  | 3653        | 3632        | 3693        |
| Be-7                     | 0.071±0.012                                           | 0.11±0.036  | 0.067±0.014 | 0.080±0.025 |
| Nb-95                    | <0.0022                                               | <0.0021     | <0.0022     | <0.0049     |
| Zr-95                    | <0.0028                                               | <0.0072     | <0.0031     | <0.0060     |
| Ru-103                   | <0.0014                                               | <0.0028     | <0.0013     | <0.0033     |
| Ru-106                   | <0.011                                                | <0.020      | <0.011      | <0.029      |
| Cs-134                   | <0.0012                                               | <0.0012     | <0.0013     | <0.0028     |
| Cs-137                   | <0.0012                                               | <0.0026     | <0.0011     | <0.0026     |
| Ce-141                   | <0.0016                                               | <0.0047     | <0.0012     | <0.0048     |
| Ce-144                   | <0.0046                                               | <0.014      | <0.0038     | <0.014      |
|                          | D-5                                                   |             |             |             |
| Lab Code                 | DAP-3024                                              | DAP-3139    | DAP-3277    | DAP-3385    |
| Volume (m <sup>3</sup> ) | 3811                                                  | 3876        | 3720        | 3468        |
| Be-7                     | 0.048±0.008                                           | 0.084±0.018 | 0.083±0.024 | 0.071±0.018 |
| Nb-95                    | <0.0013                                               | <0.0024     | <0.0022     | <0.0032     |
| Zr-95                    | <0.0019                                               | <0.0026     | <0.0028     | <0.0040     |
| Ru-103                   | <0.0009                                               | <0.0016     | <0.0021     | <0.0030     |
| Ru-106                   | <0.0068                                               | <0.013      | <0.014      | <0.021      |
| Cs-134                   | <0.0008                                               | <0.0012     | <0.0014     | <0.0025     |
| Cs-137                   | <0.0009                                               | <0.0013     | <0.0021     | <0.0018     |
| Ce-141                   | <0.0012                                               | <0.0019     | <0.0035     | <0.0038     |
| Ce-144                   | <0.0034                                               | <0.0054     | <0.0093     | <0.012      |

Table 13. Airborne particulate samples, quarterly composites of weekly samples, analysis for gamma-emitting isotopes, 1992 (continued)

|                   | Sample Description and Activity (pCi/m <sup>3</sup> ) |             |             |             |
|-------------------|-------------------------------------------------------|-------------|-------------|-------------|
|                   | 1st. Qtr.                                             | 2nd Qtr.    | 3rd Qtr.    | 4th Qtr.    |
| D-6               |                                                       |             |             |             |
| Lab Code          | DAP-3025                                              | DAP-3140    | DAP-3278    | DAP-3386    |
| Volume            | 3635                                                  | 3429        | 3637        | 3727        |
| (m <sup>3</sup> ) |                                                       |             |             |             |
| Be-7              | 0.044±0.008                                           | 0.094±0.018 | 0.065±0.014 | 0.057±0.023 |
| Nb-95             | <0.0014                                               | <0.0018     | <0.0025     | <0.0044     |
| Zr-95             | <0.0021                                               | <0.0045     | <0.0031     | <0.0072     |
| Ru-103            | <0.0012                                               | <0.0009     | <0.0011     | <0.0042     |
| Ru-106            | <0.0083                                               | <0.011      | <0.0097     | <0.026      |
| Cs-134            | <0.0008                                               | <0.0011     | <0.0010     | <0.0027     |
| Cs-137            | <0.0009                                               | <0.0016     | <0.0008     | <0.0025     |
| Ce-141            | <0.0018                                               | <0.0018     | <0.0013     | <0.0053     |
| Ce-144            | <0.0051                                               | <0.0035     | <0.0036     | <0.016      |
| D-7               |                                                       |             |             |             |
| Lab Code          | DAP-3026                                              | DAP-3141    | DAP-3279    | DAP-3387    |
| Volume            | 3806                                                  | 3782        | 3572        | 3730        |
| (m <sup>3</sup> ) |                                                       |             |             |             |
| Be-7              | 0.041±0.009                                           | 0.081±0.014 | 0.062±0.026 | 0.018±0.008 |
| Nb-95             | <0.0010                                               | <0.0023     | <0.0042     | <0.0018     |
| Zr-95             | <0.0019                                               | <0.0032     | <0.0041     | <0.0027     |
| Ru-103            | <0.0008                                               | <0.0018     | <0.0029     | <0.0017     |
| Ru-106            | <0.0066                                               | <0.012      | <0.015      | <0.011      |
| Cs-134            | <0.0007                                               | <0.0014     | <0.0017     | <0.0012     |
| Cs-137            | <0.0008                                               | <0.0013     | <0.0020     | <0.0011     |
| Ce-141            | <0.0011                                               | <0.0027     | <0.0051     | <0.0021     |
| Ce-144            | <0.0025                                               | <0.0081     | <0.014      | <0.0060     |

Table 13. Airborne particulate samples, quarterly composites of weekly samples, analysis for gamma-emitting isotopes, 1992 (continued)

|                          | Sample Description and Activity (pCi/m <sup>3</sup> ) |             |             |             |
|--------------------------|-------------------------------------------------------|-------------|-------------|-------------|
|                          | 1st. Qtr.                                             | 2nd Qtr.    | 3rd Qtr.    | 4th Qtr.    |
|                          | D-8                                                   |             |             |             |
| Lab Code                 | DAP-3027                                              | DAP-3142    | DAP-3280    | DAP-3388    |
| Volume (m <sup>3</sup> ) | 3718                                                  | 3828        | 3703        | 3713        |
| Be-7                     | 0.073±0.020                                           | 0.076±0.019 | 0.070±0.014 | 0.044±0.012 |
| Nb-95                    | <0.0022                                               | <0.0018     | <0.0017     | <0.0013     |
| Zr-95                    | <0.0033                                               | <0.0022     | <0.0023     | <0.0024     |
| Ru-103                   | <0.0015                                               | <0.0011     | <0.0015     | <0.0015     |
| Ru-106                   | <0.012                                                | <0.0082     | <0.0066     | <0.0096     |
| Cs-134                   | <0.0014                                               | <0.0011     | <0.0006     | <0.0011     |
| Cs-137                   | <0.0016                                               | <0.0004     | <0.0012     | <0.0010     |
| Ce-141                   | <0.0028                                               | <0.0013     | <0.0014     | <0.0017     |
| Ce-144                   | <0.0081                                               | <0.0037     | <0.0032     | <0.0044     |
|                          | D-10                                                  |             |             |             |
| Lab Code                 | DAP-3028                                              | DAP-3143    | DAP-3281    | DAP-3389    |
| Volume (m <sup>3</sup> ) | 3925                                                  | 3765        | 3614        | 3679        |
| Be-7                     | 0.058±0.009                                           | 0.096±0.027 | 0.079±0.022 | 0.049±0.013 |
| Nb-95                    | <0.0008                                               | <0.0040     | <0.0035     | <0.0018     |
| Zr-95                    | <0.0014                                               | <0.0045     | <0.0048     | <0.0026     |
| Ru-103                   | <0.0008                                               | <0.0026     | <0.0025     | <0.0017     |
| Ru-106                   | <0.0047                                               | <0.020      | <0.013      | <0.0097     |
| Cs-134                   | <0.0004                                               | <0.0020     | <0.0015     | <0.0015     |
| Cs-137                   | <0.0006                                               | <0.0026     | <0.0019     | <0.0014     |
| Ce-141                   | <0.0012                                               | <0.0057     | <0.0036     | <0.0015     |
| Ce-144                   | <0.0030                                               | <0.017      | <0.010      | <0.0040     |

Table 13. Airborne particulate samples, quarterly composites of weekly samples, analysis for gamma-emitting isotopes, 1992 (continued)

| Sample Description and Activity (pCi/m <sup>3</sup> ) |             |             |             |             |
|-------------------------------------------------------|-------------|-------------|-------------|-------------|
|                                                       | 1st. Qtr.   | 2nd Qtr.    | 3rd Qtr.    | 4th Qtr.    |
| D-11                                                  |             |             |             |             |
| Lab Code                                              | DAP-3029    | DAP-3144    | DAP-3282    | DAP-3390    |
| Volume (m <sup>3</sup> )                              | 3416        | 3701        | 3720        | 3750        |
| Be-7                                                  | 0.042±0.012 | 0.074±0.021 | 0.063±0.016 | 0.060±0.018 |
| Nb-95                                                 | <0.0017     | <0.0027     | <0.0026     | <0.0030     |
| Zr-95                                                 | <0.0021     | <0.0032     | <0.0022     | <0.0048     |
| Ru-103                                                | <0.0012     | <0.0018     | <0.0015     | <0.0034     |
| Ru-106                                                | <0.0071     | <0.0095     | <0.012      | <0.020      |
| Cs-134                                                | <0.0007     | <0.0016     | <0.0012     | <0.0025     |
| Cs-137                                                | <0.0008     | <0.0009     | <0.0010     | <0.0021     |
| Ce-141                                                | <0.0023     | <0.0017     | <0.0017     | <0.0036     |
| Ce-144                                                | <0.0064     | <0.0049     | <0.0037     | <0.011      |
| D-13                                                  |             |             |             |             |
| Lab Code                                              | DAP-3030    | DAP-3145    | DAP-3283    | DAP-3391    |
| Volume (m <sup>3</sup> )                              | 3868        | 3749        | 3661        | 3711        |
| Be-7                                                  | 0.044±0.008 | 0.090±0.032 | 0.059±0.026 | 0.052±0.020 |
| Nb-95                                                 | <0.0016     | <0.0035     | <0.0038     | <0.0045     |
| Zr-95                                                 | <0.0018     | <0.0051     | <0.0048     | <0.0058     |
| Ru-103                                                | <0.0010     | <0.0027     | <0.0032     | <0.0037     |
| Ru-106                                                | <0.0078     | <0.018      | <0.014      | <0.019      |
| Cs-134                                                | <0.0008     | <0.0022     | <0.0022     | <0.0025     |
| Cs-137                                                | <0.0009     | <0.0022     | <0.0021     | <0.0024     |
| Ce-141                                                | <0.0012     | <0.0048     | <0.0055     | <0.0042     |
| Ce-144                                                | <0.0032     | <0.012      | <0.010      | <0.013      |

Table 13. Airborne particulate samples, quarterly composites of weekly samples, analysis for gamma-emitting isotopes, 1992 (continued)

| Sample Description and Activity (pCi/m <sup>3</sup> ) |             |             |             |             |
|-------------------------------------------------------|-------------|-------------|-------------|-------------|
|                                                       | 1st. Qtr.   | 2nd Qtr.    | 3rd Qtr.    | 4th Qtr.    |
| D-15                                                  |             |             |             |             |
| Lab Code                                              | DAP-3031    | DAP-3146    | DAP-3284    | DAP-3392    |
| Volume (m <sup>3</sup> )                              | 3702        | 2948        | 3704        | 3754        |
| Be-7                                                  | 0.037±0.007 | 0.070±0.023 | 0.061±0.018 | 0.036±0.011 |
| Nb-95                                                 | <0.0012     | <0.0029     | <0.0035     | <0.0021     |
| Zr-95                                                 | <0.0017     | <0.0052     | <0.0038     | <0.0028     |
| Ru-103                                                | <0.0010     | <0.0020     | <0.0016     | <0.0017     |
| Ru-106                                                | <0.0068     | <0.0083     | <0.013      | <0.0099     |
| Cs-134                                                | <0.0008     | <0.0011     | <0.0012     | <0.0012     |
| Cs-137                                                | <0.0008     | <0.0010     | <0.0011     | <0.0011     |
| Ce-141                                                | <0.0012     | <0.0021     | <0.0014     | <0.0013     |
| Ce-144                                                | <0.0032     | <0.0048     | <0.0038     | <0.0038     |
| D-16                                                  |             |             |             |             |
| Lab Code                                              | DAP-3032    | DAP-3147    | DAP-3285    | DAP-3393    |
| Volume (m <sup>3</sup> )                              | 3839        | 3743        | 3962        | 3694        |
| Be-7                                                  | 0.052±0.017 | 0.081±0.029 | 0.066±0.022 | 0.058±0.021 |
| Nb-95                                                 | <0.0017     | <0.0022     | <0.0037     | <0.0044     |
| Zr-95                                                 | <0.0034     | <0.0052     | <0.0049     | <0.0062     |
| Ru-103                                                | <0.0016     | <0.0024     | <0.0021     | <0.0033     |
| Ru-106                                                | <0.012      | <0.022      | <0.016      | <0.023      |
| Cs-134                                                | <0.0012     | <0.0018     | <0.0015     | <0.0026     |
| Cs-137                                                | <0.0016     | <0.0024     | <0.0022     | <0.0023     |
| Ce-141                                                | <0.0027     | <0.0044     | <0.0042     | <0.0046     |
| Ce-144                                                | <0.0076     | <0.013      | <0.011      | <0.014      |

Table 14. Ambient gamma radiation (TLD), quarterly exposure.

| Location<br>No.                  | mR/91 days      |                 |                 |                 |
|----------------------------------|-----------------|-----------------|-----------------|-----------------|
|                                  | 1st Quarter     | 2nd Quarter     | 3rd Quarter     | 4th Quarter     |
| <u>Air Particulate Locations</u> |                 |                 |                 |                 |
| D-1                              | 13.1±0.8        | 13.3±0.4        | 13.0±0.6        | 14.6±0.4        |
| D-2                              | 12.8±0.7        | 11.9±0.3        | 13.1±0.5        | 14.2±0.4        |
| D-3                              | 14.1±0.5        | 14.2±1.0        | 14.5±0.4        | 14.6±0.4        |
| D-5                              | 15.4±0.8        | 15.4±0.4        | 16.1±0.8        | 15.9±0.5        |
| D-6                              | 14.4±0.3        | 14.5±0.4        | 13.3±0.3        | 14.8±0.4        |
| D-7                              | 14.0±0.3        | 14.6±0.3        | 13.8±0.5        | 15.0±0.4        |
| D-8                              | 15.4±0.4        | ND <sup>a</sup> | 12.3±0.4        | 14.7±0.5        |
| D-10                             | 13.7±0.4        | 14.8±0.5        | 14.4±0.3        | 14.2±0.5        |
| D-11                             | 13.0±0.7        | 14.2±0.9        | 12.8±0.6        | 14.9±0.5        |
| D-13                             | 13.1±0.7        | 12.2±0.4        | 13.6±0.3        | 12.5±0.5        |
| D-15                             | 14.0±0.5        | 13.8±0.8        | 16.3±0.6        | 14.7±0.3        |
| D-16                             | <u>15.9±0.5</u> | <u>14.2±0.7</u> | <u>15.0±0.5</u> | <u>15.1±0.5</u> |
| Mean ± s.d.                      | 14.1±1.0        | 13.9±1.1        | 14.0±1.3        | 14.6±0.8        |
| <u>Within 0.5 Mile of Stack</u>  |                 |                 |                 |                 |
| D-18                             | 16.0±1.2        | 15.5±0.4        | 17.8±0.3        | 17.0±0.4        |
| D-19                             | 16.2±0.8        | 15.2±0.6        | 18.1±0.4        | 17.4±0.3        |
| D-20                             | 16.9±0.5        | 15.3±0.4        | 19.4±0.3        | 17.8±0.3        |
| D-21                             | 16.2±0.8        | 15.0±0.3        | 17.4±0.3        | 17.5±0.3        |
| D-22                             | 13.0±0.4        | 14.3±0.5        | 14.4±0.3        | 17.2±0.5        |
| D-23                             | 14.2±0.8        | 12.9±0.4        | 15.2±0.3        | 15.2±0.3        |
| D-28                             | 19.6±0.9        | 18.3±0.6        | 20.4±0.4        | 20.5±0.5        |
| D-29                             | 20.3±0.6        | 20.6±0.6        | 21.6±0.4        | 22.3±0.3        |
| D-30                             | 22.5±0.5        | 20.0±0.3        | 24.0±0.7        | 21.4±0.4        |
| D-31                             | 23.1±0.8        | 21.3±1.0        | 24.0±0.3        | 23.3±1.3        |
| D-32                             | 20.2±0.5        | 19.5±0.6        | 20.5±0.4        | 21.0±0.5        |
| D-82                             | 15.6±1.2        | 14.4±1.1        | 16.3±0.7        | 16.2±0.7        |
| D-83                             | 18.2±0.5        | 16.8±0.4        | 18.8±0.3        | 18.2±0.4        |
| D-84                             | 16.0±0.5        | 16.5±0.4        | 16.7±0.7        | 18.2±0.4        |
| D-85                             | 14.8±0.6        | 15.5±0.4        | 16.8±0.7        | 17.9±0.4        |
| D-86                             | 16.8±0.4        | 20.0±0.3        | 17.0±0.7        | 21.8±0.3        |
| D-91                             | <u>13.9±0.4</u> | <u>13.2±0.3</u> | <u>15.2±0.4</u> | <u>15.2±0.4</u> |
| Mean ± s.d.                      | 17.3±2.9        | 16.7±2.7        | 18.4±2.9        | 18.7±2.5        |

<sup>a</sup>ND = no data; TLD lost in the field.

Table 14. Ambient gamma radiation (TLD), quarterly exposure (continued)

| Location<br>No.                  | mR/91 days      |                 |                 |                 |
|----------------------------------|-----------------|-----------------|-----------------|-----------------|
|                                  | 1st Quarter     | 2nd Quarter     | 3rd Quarter     | 4th Quarter     |
| <u>Within 1.0 Mile of Stack</u>  |                 |                 |                 |                 |
| D-43                             | 16.0±1.0        | 15.7±0.6        | 16.4±0.7        | 16.9±0.6        |
| D-44                             | 20.4±0.4        | 18.3±0.6        | 20.4±0.4        | 19.3±0.5        |
| D-45                             | 16.4±1.0        | 17.0±0.4        | 16.6±0.8        | 18.4±0.3        |
| D-46                             | 20.0±0.6        | 20.5±0.4        | 22.6±0.3        | 20.5±0.6        |
| D-47                             | 20.5±0.4        | 17.0±0.4        | 22.5±0.4        | 18.1±0.3        |
| D-48                             | <u>19.7±0.5</u> | <u>20.5±0.5</u> | <u>21.9±0.4</u> | <u>22.8±0.3</u> |
| Mean ± s.d.                      | 18.8±2.1        | 18.2±2.0        | 20.1±2.9        | 19.3±2.1        |
| <u>Within 3.0 Miles of Stack</u> |                 |                 |                 |                 |
| D-33                             | 16.5±1.6        | 13.1±0.4        | 15.0±0.4        | 14.7±0.4        |
| D-34                             | 15.4±0.9        | 15.8±0.6        | 15.5±0.4        | 16.8±0.7        |
| D-35                             | 15.0±0.4        | 13.5±0.4        | 15.1±0.3        | 14.9±0.3        |
| D-36                             | 16.8±0.4        | 16.9±0.3        | 16.9±0.4        | 18.4±0.4        |
| D-37                             | 20.5±0.5        | 20.4±0.4        | 21.8±0.4        | 22.0±0.4        |
| D-38                             | 19.5±1.3        | 19.9±0.8        | 20.1±0.6        | 19.7±0.5        |
| D-39                             | 18.5±0.3        | 17.3±0.5        | 18.5±0.3        | 19.3±0.6        |
| D-40                             | 19.1±0.3        | 16.9±0.3        | 18.1±0.4        | 16.9±0.4        |
| D-41                             | <u>15.7±0.6</u> | <u>17.7±0.4</u> | <u>16.6±0.5</u> | ND <sup>a</sup> |
| Mean ± s.d.                      | 17.4±2.0        | 16.8±2.5        | 17.5±2.3        | 17.8±2.5        |

<sup>a</sup> ND = No Data, TLD missing.

Table 15. Milk samples, analyses for iodine-131 and gamma-emitting isotopes.  
Collection: Monthly during non-grazing season (October 1 through April 30);  
biweekly during grazing season (May 1 through September 30)

| Date<br>Collected    | Lab<br>Code | Concentration (pCi/L) |          |        |        |        |        |
|----------------------|-------------|-----------------------|----------|--------|--------|--------|--------|
|                      |             | I-131                 | K-40     | Cs-134 | Cs-137 | Ba-140 | La-140 |
| <u>Indicator</u>     |             |                       |          |        |        |        |        |
| <u>Location D-63</u> |             |                       |          |        |        |        |        |
| 01-07-92             | DMI-7335,6  | <1.0                  | 1140±100 | <15    | <18    | <60    | <15    |
| 02-04-92             | 7403        | <1.0                  | 1500±160 | <15    | <18    | <60    | <15    |
| 03-03-92             | 7473        | <1.0                  | 1170±90  | <15    | <18    | <60    | <15    |
| 04-07-92             | 7576        | <1.0                  | 1240±160 | <15    | <18    | <60    | <15    |
| 05-04-92             | 7652        | <1.0                  | 1310±160 | <15    | <18    | <60    | <15    |
| 05-19-92             | 7739        | <1.0                  | 1360±170 | <15    | <18    | <60    | <15    |
| 06-02-92             | 7816        | <1.0                  | 1510±120 | <15    | <18    | <60    | <15    |
| 06-16-92             | 7903        | <1.0                  | 1390±110 | <15    | <18    | <60    | <15    |
| 07-01-92             | 7977        | <1.0                  | 1270±120 | <15    | <18    | <60    | <15    |
| 07-14-92             | 8049        | <1.0                  | 1390±160 | <15    | <18    | <60    | <15    |
| 07-28-92             | 8126        | <1.0                  | 1360±170 | <15    | <18    | <60    | <15    |
| 08-11-92             | 8204        | <1.0                  | 1300±170 | <15    | <18    | <60    | <15    |
| 08-25-92             | 8281        | <1.0                  | 1310±140 | <15    | <18    | <60    | <15    |
| 09-09-92             | 8357        | <1.0                  | 1030±260 | <15    | <18    | <60    | <15    |
| 09-22-92             | 8437,8      | <1.0                  | 1150±110 | <15    | <18    | <60    | <15    |
| 10-06-92             | 8519        | <1.0                  | 1220±150 | <15    | <18    | <60    | <15    |
| 11-03-92             | 8651        | <1.0                  | 1110±150 | <15    | <18    | <60    | <15    |
| 12-01-92             | 8723        | <1.0                  | 1210±140 | <15    | <18    | <60    | <15    |

Table 15. Milk samples, analyses for iodine-131 and gamma-emitting isotopes.  
(continued)

| Date Collected       | Lab Code        | Concentration (pCi/L) |          |        |        |        |        |
|----------------------|-----------------|-----------------------|----------|--------|--------|--------|--------|
|                      |                 | I-131                 | K-40     | Cs-134 | Cs-137 | Ba-140 | La-140 |
| <u>Indicator</u>     |                 |                       |          |        |        |        |        |
| <u>Location D-93</u> |                 |                       |          |        |        |        |        |
| 01-07-92             | NS <sup>a</sup> | —                     | —        | —      | —      | —      | —      |
| 02-04-92             | DMI-7404        | <1.0                  | 1490±130 | <15    | <18    | <60    | <15    |
| 03-03-92             | 7474            | <1.0                  | 1320±120 | <15    | <18    | <60    | <15    |
| 04-07-92             | 7577            | <1.0                  | 1720±130 | <15    | <18    | <60    | <15    |
| 05-04-92             | 7653            | <1.0                  | 1550±160 | <15    | <18    | <60    | <15    |
| 05-19-92             | 7740            | <1.0                  | 1530±160 | <15    | <18    | <60    | <15    |
| 06-02-92             | 7817            | <1.0                  | 1540±140 | <15    | <18    | <60    | <15    |
| 06-16-92             | 7904,5          | <1.0                  | 1580±80  | <15    | <18    | <60    | <15    |
| 07-01-92             | 7978            | <1.0                  | 1490±180 | <15    | <18    | <60    | <15    |
| 07-14-92             | 8050,1          | <1.0                  | 1680±140 | <15    | <18    | <60    | <15    |
| 07-28-92             | 8127            | <1.0                  | 1670±150 | <15    | <18    | <60    | <15    |
| 08-11-92             | 8205            | <1.0                  | 1420±170 | <15    | <18    | <60    | <15    |
| 08-25-92             | 8282            | <1.0                  | 1570±160 | <15    | <18    | <60    | <15    |
| 09-09-92             | 8358            | <1.0                  | 1540±180 | <15    | <18    | <60    | <15    |
| 09-22-92             | 8439            | <1.0                  | 1610±150 | <15    | <18    | <60    | <15    |
| 10-06-92             | 8520            | <1.0                  | 1450±150 | <15    | <18    | <60    | <15    |
| 11-03-92             | 8652            | <1.0                  | 1420±170 | <15    | <18    | <60    | <15    |
| 12-01-92             | 8724A           | <1.0                  | 1020±50  | <15    | <18    | <60    | <15    |
| <u>Location D-94</u> |                 |                       |          |        |        |        |        |
| 01-07-92             | DMI-7337        | <1.0                  | 1340±170 | <15    | <18    | <60    | <15    |
| 02-04-92             | 7405            | <1.0                  | 1320±150 | <15    | <18    | <60    | <15    |
| 03-03-92             | 7475            | <1.0                  | 1160±130 | <15    | <18    | <60    | <15    |
| 04-07-92             | 7578            | <1.0                  | 1130±110 | <15    | <18    | <60    | <15    |
| 05-04-92             | 7654            | <1.0                  | 1270±160 | <15    | <18    | <60    | <15    |
| 05-19-92             | 7741            | <1.0                  | 1160±120 | <15    | <18    | <60    | <15    |
| 06-02-92             | 7818            | <1.0                  | 1410±160 | <15    | <18    | <60    | <15    |
| 06-16-92             | 7906            | <1.0                  | 1110±130 | <15    | <18    | <60    | <15    |
| 07-01-92             | 7979            | <1.0                  | 1030±110 | <15    | <18    | <60    | <15    |
| 07-14-92             | 8052            | <1.0                  | 1240±110 | <15    | <18    | <60    | <15    |
| 07-28-92             | 8128            | <1.0                  | 1210±140 | <15    | <18    | <60    | <15    |
| 08-11-92             | 8206            | <1.0                  | 1090±160 | <15    | <18    | <60    | <15    |
| 08-25-92             | 8283            | <1.0                  | 1190±130 | <15    | <18    | <60    | <15    |
| 09-09-92             | 8359            | <1.0                  | 890±130  | <15    | <18    | <60    | <15    |
| 09-22-92             | 8440            | <1.0                  | 1090±120 | <15    | <18    | <60    | <15    |
| 10-06-92             | 8521            | <1.0                  | 1290±140 | <15    | <18    | <60    | <15    |
| 11-03-92             | 8653            | <1.0                  | 1060±130 | <15    | <18    | <60    | <15    |
| 12-01-92             | 8724            | <1.0                  | 1510±160 | <15    | <18    | <60    | <15    |

<sup>a</sup> NS = no sample; sample not available.

Table 15. Milk samples, analyses for iodine-131 and gamma-emitting isotopes.  
(continued)

| Date Collected        | Lab Code        | Concentration (pCi/L) |          |        |        |        |        |
|-----------------------|-----------------|-----------------------|----------|--------|--------|--------|--------|
|                       |                 | I-131                 | K-40     | Cs-134 | Cs-137 | Ba-140 | La-140 |
| <u>Indicator</u>      |                 |                       |          |        |        |        |        |
| <u>Location D-96</u>  |                 |                       |          |        |        |        |        |
| 01-07-92              | DMI-7338        | <1.0                  | 1420±120 | <15    | <18    | <60    | <15    |
| 02-04-92              | 7406            | <1.0                  | 1370±150 | <15    | <18    | <60    | <15    |
| 03-03-92              | 7476            | <1.0                  | 1170±160 | <15    | <18    | <60    | <15    |
| 04-07-92              | 7579            | <1.0                  | 1220±130 | <15    | <18    | <60    | <15    |
| 05-04-92              | 7655            | <1.0                  | 1280±140 | <15    | <18    | <60    | <15    |
| 05-19-92              | 7742            | <1.0                  | 1210±120 | <15    | <18    | <60    | <15    |
| 06-02-92              | 7819            | <1.0                  | 1140±120 | <15    | <18    | <60    | <15    |
| 06-16-92              | 7907            | <1.0                  | 1220±110 | <15    | <18    | <60    | <15    |
| 07-01-92              | 7980            | <1.0                  | 1330±160 | <15    | <18    | <60    | <15    |
| 07-14-92              | 8053            | <1.0                  | 1320±110 | <15    | <18    | <60    | <15    |
| 07-28-92              | 8129            | <1.0                  | 1320±140 | <15    | <18    | <60    | <15    |
| 08-11-92              | 8207            | <1.0                  | 1210±140 | <15    | <18    | <60    | <15    |
| 08-25-92              | 8284            | <1.0                  | 1300±170 | <15    | <18    | <60    | <15    |
| 09-09-92              | 8360            | <1.0                  | 1290±160 | <15    | <18    | <60    | <15    |
| 09-22-92              | 8441            | <1.0                  | 1380±130 | <15    | <18    | <60    | <15    |
| 10-06-92              | 8522            | <1.0                  | 1330±160 | <15    | <18    | <60    | <15    |
| 11-03-92              | 8654            | <1.0                  | 1210±130 | <15    | <18    | <60    | <15    |
| 12-01-92              | 8725            | <1.0                  | 1320±160 | <15    | <18    | <60    | <15    |
| <u>Location D-101</u> |                 |                       |          |        |        |        |        |
| 01-07-92              | NS <sup>a</sup> | —                     | —        | —      | —      | —      | —      |
| 02-04-92              | NS              | —                     | —        | —      | —      | —      | —      |
| 03-03-92              | NS              | —                     | —        | —      | —      | —      | —      |
| 04-07-92              | NS              | —                     | —        | —      | —      | —      | —      |
| 05-04-92              | NS              | —                     | —        | —      | —      | —      | —      |
| 05-19-92              | NS              | —                     | —        | —      | —      | —      | —      |
| 06-02-92              | DMI-7820        | <1.0                  | 1800±130 | <15    | <18    | <60    | <15    |
| 06-16-92              | 7908            | <1.0                  | 1730±160 | <15    | <18    | <60    | <15    |
| 07-01-92              | 7981            | <1.0                  | 1790±200 | <15    | <18    | <60    | <15    |
| 07-14-92              | 8054            | <1.0                  | 1780±140 | <15    | <18    | <60    | <15    |
| 07-28-92              | 8132            | <1.0                  | 1920±180 | <15    | <18    | <60    | <15    |
| 08-11-92              | 8208            | <1.0                  | 1720±170 | <15    | <18    | <60    | <15    |
| 08-25-92              | 8285            | <1.0                  | 1540±160 | <15    | <18    | <60    | <15    |
| 09-09-92              | 8361            | <1.0                  | 1500±140 | <15    | <18    | <60    | <15    |
| 09-22-92              | 8442            | <1.0                  | 1660±170 | <15    | <18    | <60    | <15    |
| 10-06-92              | 8524            | <1.0                  | 1870±150 | <15    | <18    | <60    | <15    |
| 11-03-92              | 8655            | <1.0                  | 1780±200 | <15    | <18    | <60    | <15    |
| 12-01-92              | 8726            | <1.0                  | 1580±160 | <15    | <18    | <60    | <15    |

<sup>a</sup> NS = no sample; sample not available.

Table 15. Milk samples, analyses for iodine-131 and gamma-emitting isotopes.  
(continued)

| Date<br>Collected     | Lab<br>Code | Concentration (pCi/L) |          |        |        |        |        |
|-----------------------|-------------|-----------------------|----------|--------|--------|--------|--------|
|                       |             | I-131                 | K-40     | Cs-134 | Cs-137 | Ba-140 | La-140 |
| <u>Indicator</u>      |             |                       |          |        |        |        |        |
| <u>Location D-106</u> |             |                       |          |        |        |        |        |
| 01-07-92              | DMI-7340    | <1.0                  | 1240±150 | <15    | <18    | <60    | <15    |
| 02-04-92              | 7408        | <1.0                  | 1500±150 | <15    | <18    | <60    | <15    |
| 03-03-92              | 7478        | <1.0                  | 1130±150 | <15    | <18    | <60    | <15    |
| 04-07-92              | 7582        | <1.0                  | 1280±160 | <15    | <18    | <60    | <15    |
| 05-04-92              | 7657,8      | <1.0                  | 1200±110 | <15    | <18    | <60    | <15    |
| 05-19-92              | 7744        | <1.0                  | 1240±140 | <15    | <18    | <60    | <15    |
| 06-02-92              | 7822,3      | <1.0                  | 1370±80  | <15    | <18    | <60    | <15    |
| 06-16-92              | 7910        | <1.0                  | 1350±130 | <15    | <18    | <60    | <15    |
| 07-01-92              | 7983        | <1.0                  | 1270±110 | <15    | <18    | <60    | <15    |
| 07-14-92              | 8056        | <1.0                  | 1120±140 | <15    | <18    | <60    | <15    |
| 07-28-92              | 8131        | <1.0                  | 1160±150 | <15    | <18    | <60    | <15    |
| 08-11-92              | 8210        | <1.0                  | 1020±140 | <15    | <18    | <60    | <15    |
| 08-25-92              | 8287        | <1.0                  | 1070±130 | <15    | <18    | <60    | <15    |
| 09-09-92              | 8363        | <1.0                  | 1180±160 | <15    | <18    | <60    | <15    |
| 09-22-92              | 8444        | <1.0                  | 1230±110 | <15    | <18    | <60    | <15    |
| 10-06-92              | 8523        | <1.0                  | 1310±150 | <15    | <18    | <60    | <15    |
| 11-03-92              | 8657        | <1.0                  | 1530±170 | <15    | <18    | <60    | <15    |
| 12-01-92              | 8728        | <1.0                  | 1660±130 | <15    | <18    | <60    | <15    |
| <u>Control</u>        |             |                       |          |        |        |        |        |
| <u>Location D-105</u> |             |                       |          |        |        |        |        |
| 01-07-92              | DMI-7339    | <1.0                  | 1280±140 | <15    | <18    | <60    | <15    |
| 02-04-92              | 7407        | <1.0                  | 1200±160 | <15    | <18    | <60    | <15    |
| 03-03-92              | 7477        | <1.0                  | 1150±100 | <15    | <18    | <60    | <15    |
| 04-07-92              | 7580,1      | <1.0                  | 1340±110 | <15    | <18    | <60    | <15    |
| 05-04-92              | 7656        | <1.0                  | 1180±160 | <15    | <18    | <60    | <15    |
| 05-19-92              | 7743        | <1.0                  | 1360±100 | <15    | <18    | <60    | <15    |
| 06-02-92              | 7821        | <1.0                  | 1370±150 | <15    | <18    | <60    | <15    |
| 06-16-92              | 7909        | <1.0                  | 1460±130 | <15    | <18    | <60    | <15    |
| 07-01-92              | 7982        | <1.0                  | 1310±160 | <15    | <18    | <60    | <15    |
| 07-14-92              | 8055        | <1.0                  | 900±120  | <15    | <18    | <60    | <15    |
| 07-28-92              | 8130        | <1.0                  | 1370±160 | <15    | <18    | <60    | <15    |
| 08-11-92              | 8209        | <1.0                  | 1260±150 | <15    | <18    | <60    | <15    |
| 08-25-92              | 8286        | <1.0                  | 1330±150 | <15    | <18    | <60    | <15    |
| 09-09-92              | 8362        | <1.0                  | 1340±140 | <15    | <18    | <60    | <15    |
| 09-22-92              | 8443        | <1.0                  | 1390±120 | <15    | <18    | <60    | <15    |
| 10-06-92              | 8525        | <1.0                  | 1420±150 | <15    | <18    | <60    | <15    |
| 11-03-92              | 8656        | <1.0                  | 1360±170 | <15    | <18    | <60    | <15    |
| 12-01-92              | 8727        | <1.0                  | 1420±130 | <15    | <18    | <60    | <15    |

Table 16. Ground water samples, analysis for gross beta and tritium.  
Collection: Quarterly, 1992.

| Location and<br>Collection Period  | Lab Code | Concentration pCi/L |                |
|------------------------------------|----------|---------------------|----------------|
|                                    |          | Gross Beta          | H-3            |
| <u>D-53</u>                        |          |                     |                |
| Treated Municipal Water            |          |                     |                |
| 1st Quarter                        | DWW-5192 | 1.6±0.3             | <330           |
| 2nd Quarter                        | 6335     | 2.5±0.3             | <330           |
| 3rd Quarter                        | 7470     | 2.5±0.5             | <330           |
| 4th Quarter                        | 8559     | <u>2.1±0.5</u>      | <u>&lt;330</u> |
| Annual Mean ± s.d.                 |          | 2.2±0.4             | <330           |
| <u>D-54</u>                        |          |                     |                |
| Inlet to Municipal Water Treatment |          |                     |                |
| 1st Quarter                        | DWW-5193 | 2.6±0.6             | <330           |
| 2nd Quarter                        | 6336     | 2.7±0.3             | <330           |
| 3rd Quarter                        | 7471     | 2.8±0.6             | <330           |
| 4th Quarter                        | 8560     | <u>3.5±0.7</u>      | <u>&lt;330</u> |
| Annual Mean ± s.d.                 |          | 2.9±0.4             | <330           |
| <u>D-55</u>                        |          |                     |                |
| On-site Well                       |          |                     |                |
| 1st Quarter                        | DWW-5194 | 0.9±0.4             | <330           |
| 2nd Quarter                        | 6337     | <0.8                | <330           |
| 3rd Quarter                        | 7472     | <1.0                | <330           |
| 4th Quarter                        | 8561     | <u>&lt;0.8</u>      | <u>&lt;330</u> |
| Annual Mean ± s.d.                 |          | 0.9±0.4             | <330           |
| <u>D-57</u>                        |          |                     |                |
| Bull Farm                          |          |                     |                |
| 1st Quarter                        | DWW-5195 | 1.2±0.5             | <330           |
| 2nd Quarter                        | 6338     | 1.1±0.6             | <330           |
| 3rd Quarter                        | 7473     | 1.2±0.6             | <330           |
| 4th Quarter                        | 8562     | <u>1.0±0.6</u>      | <u>&lt;330</u> |
| Annual Mean ± s.d.                 |          | 1.1±0.1             | <330           |

Table 16. Ground water samples, analysis for gross beta and tritium, 1992 (continued).

| Location and<br>Collection Period | Lab Code   | Concentration pCi/L |                |
|-----------------------------------|------------|---------------------|----------------|
|                                   |            | Gross Beta          | H-3            |
| <u>D-58</u>                       |            |                     |                |
| Franz Farm                        |            |                     |                |
| 1st Quarter                       | DWW-5196   | 4.5±0.6             | <330           |
| 2nd Quarter                       | 6339       | 3.9±0.7             | <330           |
| 3rd Quarter                       | 7474       | 5.0±0.8             | <330           |
| 4th Quarter                       | 8563       | <u>8.4±0.8</u>      | <u>&lt;330</u> |
| Annual Mean ± s.d.                |            | 5.4±2.0             | <330           |
| <u>D-72</u>                       |            |                     |                |
| Van Note Farm                     |            |                     |                |
| 1st Quarter                       | DWW-5197,8 | 0.7±0.3             | <330           |
| 2nd Quarter                       | 6340       | 0.9±0.6             | <330           |
| 3rd Quarter                       | 7475       | <1.1                | <330           |
| 4th Quarter                       | 8564       | <u>1.0±0.6</u>      | <u>&lt;330</u> |
| Annual Mean ± s.d.                |            | 0.9±0.2             | <330           |

Table 17. Vegetation samples, (broadleaf) analysis for I-131 and gamma-emitting isotopes.  
Collection: Annually.

| Sample Description and Activity (pCi/g wet)    |                     |                     |                     |                     |
|------------------------------------------------|---------------------|---------------------|---------------------|---------------------|
| Location<br>Date Collected<br>Type<br>Lab Code | Indicator           |                     |                     | Control             |
|                                                | D-57                | D-63                | D-72                | D-105               |
|                                                | 07-29-92            | 07-28-92            | 07-29-92            | 07-28-92            |
|                                                | Lettuce<br>DVE-1356 | Cabbage<br>DVE-1348 | Lettuce<br>DVE-1357 | Cabbage<br>DVE-1351 |
| I-131                                          | <0.009              | <0.025              | <0.030              | <0.060              |
| K-40                                           | 2.23±0.38           | 2.68±0.42           | 3.02±0.31           | 6.30±0.63           |
| Mn-54                                          | <0.009              | <0.022              | <0.016              | <0.038              |
| Co-58                                          | <0.009              | <0.022              | <0.016              | <0.041              |
| Co-60                                          | <0.009              | <0.026              | <0.015              | <0.042              |
| Nb-95                                          | <0.008              | <0.023              | <0.017              | <0.043              |
| Zr-95                                          | <0.015              | <0.040              | <0.028              | <0.077              |
| Ru-103                                         | <0.007              | <0.019              | <0.016              | <0.039              |
| Ru-106                                         | <0.071              | <0.19               | <0.11               | <0.34               |
| Cs-134                                         | <0.007              | <0.021              | <0.012              | <0.038              |
| Cs-137                                         | <0.008              | <0.022              | <0.014              | <0.039              |
| Ce-141                                         | <0.010              | <0.029              | <0.024              | <0.064              |
| Ce-144                                         | <0.042              | <0.12               | <0.089              | <0.26               |
| Location<br>Date Collected<br>Type<br>Lab Code | D-93                | D-94                | D-106               | D-16                |
|                                                | 07-28-92            | 07-28-92            | 09-11-92            | 10-06-92            |
|                                                | Lettuce             | Lettuce             | Lettuce             | Mustard             |
|                                                | DVE-1349            | DVE-1350            | DVE-1477            | DVE-1513            |
| I-131                                          | <0.023              | <0.027              | <0.057              | <0.043              |
| K-40                                           | 2.88±0.32           | 1.96±0.43           | 2.52±0.31           | 10.90±0.47          |
| Mn-54                                          | <0.017              | <0.026              | <0.021              | <0.016              |
| Co-58                                          | <0.019              | <0.030              | <0.017              | <0.018              |
| Co-60                                          | <0.018              | <0.030              | <0.019              | <0.016              |
| Nb-95                                          | <0.017              | <0.026              | <0.023              | <0.019              |
| Zr-95                                          | <0.032              | <0.050              | <0.035              | <0.031              |
| Ru-103                                         | <0.018              | <0.024              | <0.020              | <0.016              |
| Ru-106                                         | <0.15               | <0.21               | <0.15               | <0.13               |
| Cs-134                                         | <0.017              | <0.025              | <0.014              | <0.016              |
| Cs-137                                         | <0.019              | <0.029              | <0.017              | <0.015              |
| Ce-141                                         | <0.032              | <0.033              | <0.049              | <0.024              |
| Ce-144                                         | <0.13               | <0.14               | <0.16               | <0.078              |

Table 18. Vegetation samples, analysis for gamma-emitting isotopes.  
Collection: Annually.

| Sample Description and Activity (pCi/g wet)    |            |            |            |            |
|------------------------------------------------|------------|------------|------------|------------|
| Location<br>Date Collected<br>Type<br>Lab Code | Indicator  |            |            |            |
|                                                | D-16       | D-57       | D-63       | D-72       |
|                                                | 07-29-92   | 07-29-92   | 07-28-92   | 07-29-92   |
|                                                | Hay        | Hay        | Hay        | Hay        |
|                                                | DVE-1358   | DVE-1359   | DVE-1361   | DVE-1360   |
| K-40                                           | 3.45±0.55  | 21.64±1.51 | 11.40±0.84 | 14.40±0.69 |
| Mn-54                                          | <0.033     | <0.051     | <0.041     | <0.032     |
| Co-58                                          | <0.032     | <0.051     | <0.041     | <0.032     |
| Co-60                                          | <0.036     | <0.040     | <0.041     | <0.033     |
| Nb-95                                          | <0.037     | <0.046     | <0.044     | <0.034     |
| Zr-95                                          | <0.060     | <0.082     | <0.078     | <0.058     |
| Ru-103                                         | <0.032     | <0.039     | <0.040     | <0.033     |
| Ru-106                                         | <0.31      | <0.34      | <0.33      | <0.027     |
| Cs-134                                         | <0.038     | <0.038     | <0.038     | <0.029     |
| Cs-137                                         | <0.036     | <0.043     | <0.038     | <0.030     |
| Ce-141                                         | <0.057     | <0.065     | <0.058     | <0.059     |
| Ce-144                                         | <0.22      | <0.24      | <0.22      | <0.24      |
| Location<br>Date Collected<br>Type<br>Lab Code | Indicator  |            |            | Control    |
|                                                | D-93       | D-94       | D-106      | D-105      |
|                                                | 07-28-92   | 07-28-92   | 07-28-92   | 07-28-92   |
|                                                | Hay        | Hay        | Hay        | Hay        |
|                                                | DVE-1362   | DVE-1363   | DVE-1365,6 | DVE-1364   |
| K-40                                           | 14.33±0.42 | 13.40±0.95 | 10.11±0.56 | 11.90±0.91 |
| Mn-54                                          | <0.018     | <0.033     | <0.037     | <0.039     |
| Co-58                                          | <0.015     | <0.037     | <0.035     | <0.040     |
| Co-60                                          | <0.016     | <0.038     | <0.036     | <0.041     |
| Nb-95                                          | <0.018     | <0.035     | <0.040     | <0.041     |
| Zr-95                                          | <0.028     | <0.061     | <0.058     | <0.064     |
| Ru-103                                         | <0.017     | <0.037     | <0.038     | <0.035     |
| Ru-106                                         | <0.12      | <0.25      | <0.33      | <0.29      |
| Cs-134                                         | <0.013     | <0.029     | <0.035     | <0.039     |
| Cs-137                                         | <0.014     | <0.037     | <0.038     | <0.035     |
| Ce-141                                         | <0.041     | <0.055     | <0.065     | <0.064     |
| Ce-144                                         | <0.14      | <0.23      | <0.25      | <0.24      |

Table 18. Vegetation samples, analysis for gamma-emitting isotopes (continued).  
Collection: Annually.

| Sample Description and Activity (pCi/g wet)    |           |           |             |
|------------------------------------------------|-----------|-----------|-------------|
| Location<br>Date Collected<br>Type<br>Lab Code | Indicator |           |             |
|                                                | D-58      | D-63      | D-72        |
|                                                | 11-03-92  | 11-03-92  | 11-03-92    |
|                                                | Corn      | Corn      | Corn        |
|                                                | DVE-1518  | DVE-1519  | DVE-1520    |
| K-40                                           | 2.00±0.29 | 1.80±0.33 | 2.38±0.34   |
| Mn-54                                          | <0.015    | <0.019    | <0.019      |
| Co-58                                          | <0.016    | <0.019    | <0.018      |
| Co-60                                          | <0.015    | <0.022    | <0.018      |
| Nb-95                                          | <0.017    | <0.020    | <0.018      |
| Zr-95                                          | <0.027    | <0.033    | <0.030      |
| Ru-103                                         | <0.014    | <0.018    | <0.015      |
| Ru-106                                         | <0.097    | <0.14     | <0.14       |
| Cs-134                                         | <0.014    | <0.022    | <0.014      |
| Cs-137                                         | <0.014    | <0.01     | <0.0159     |
| Ce-141                                         | <0.019    | <0.024    | <0.022      |
| Ce-144                                         | <0.072    | <0.092    | <0.083      |
| Location<br>Date Collected<br>Type<br>Lab Code | Indicator |           | Control     |
|                                                | D-94      | D-106     | D-105       |
|                                                | 11-03-92  | 11-03-92  | 11-03-92    |
|                                                | Corn      | Corn      | Corn        |
|                                                | DVE-1521  | DVE-1524  | DVE-1522,23 |
| K-40                                           | 2.19±0.33 | 2.23±0.32 | 2.72±0.52   |
| Mn-54                                          | <0.016    | <0.016    | <0.018      |
| Co-58                                          | <0.016    | <0.018    | <0.018      |
| Co-60                                          | <0.014    | <0.024    | <0.018      |
| Nb-95                                          | <0.017    | <0.016    | <0.017      |
| Zr-95                                          | <0.031    | <0.028    | <0.030      |
| Ru-103                                         | <0.016    | <0.014    | <0.016      |
| Ru-106                                         | <0.13     | <0.12     | <0.13       |
| Cs-134                                         | <0.016    | <0.012    | <0.015      |
| Cs-137                                         | <0.015    | <0.015    | <0.016      |
| Ce-141                                         | <0.021    | <0.018    | <0.021      |
| Ce-144                                         | <0.080    | <0.072    | <0.087      |

Table 19. Surface water samples, analysis for Iodine-131 and gamma-emitting isotopes.  
Collection: Monthly.

| Sample Description and Concentration (pCi/L) |          |          |                  |                  |          |            |
|----------------------------------------------|----------|----------|------------------|------------------|----------|------------|
| <u>Indicator</u>                             |          |          |                  |                  |          |            |
| <u>D-50 - Plant Intake</u>                   |          |          |                  |                  |          |            |
| Date Collected                               | 01-22-92 | 02-24-92 | 03-24-92         | 04-29-92         | 05-26-92 | 06-30-92   |
| Lab Code                                     | DSW-4430 | DSW-4720 | DSW-5200         | DSW-5597         | DSW-5954 | DSW-6330,1 |
| I-131                                        | <2.0     | <2.0     | <2.0             | <2.0             | <2.0     | <2.0       |
| Mn-54                                        | <15      | <15      | <15              | <15              | <15      | <15        |
| Fe-59                                        | <30      | <30      | <30              | <30              | <30      | <30        |
| Co-58                                        | <15      | <15      | <15              | <15              | <15      | <15        |
| Co-60                                        | <15      | <15      | <15              | <15              | <15      | <15        |
| Zn-65                                        | <30      | <30      | <30              | <30              | <30      | <30        |
| Nb-95                                        | <15      | <15      | <15              | <15              | <15      | <15        |
| Zr-95                                        | <30      | <30      | <30              | <30              | <30      | <30        |
| Cs-134                                       | <15      | <15      | <15              | <15              | <15      | <15        |
| Cs-137                                       | <15      | <15      | <15              | <15              | <15      | <15        |
| Ba-140                                       | <60      | <60      | <60              | <60              | <60      | <60        |
| La-140                                       | <15      | <15      | <15              | <15              | <15      | <15        |
| Date Collected                               | 07-29-92 | 08-28-92 | 09-18-92         | 10-14-92         | 11-18-92 | 12-16-92   |
| Lab Code                                     | DSW-6715 | DSW-7121 | DSW-7466         | DSW-7898         | DSW-8322 | DSW-8555   |
| I-131                                        | <2.0     | <2.0     | <2.0             | <2.0             | <2.0     | <2.0       |
| Mn-54                                        | <15      | <15      | <15              | <15              | <15      | <15        |
| Fe-59                                        | <30      | <30      | <30              | <30              | <30      | <30        |
| Co-58                                        | <15      | <15      | <15              | <15              | <15      | <15        |
| Co-60                                        | <15      | <15      | <15              | <15              | <15      | <15        |
| Zn-65                                        | <30      | <30      | <30              | <30              | <30      | <30        |
| Nb-95                                        | <15      | <15      | <15              | <15              | <15      | <15        |
| Zr-95                                        | <30      | <30      | <30              | <30              | <30      | <30        |
| Cs-134                                       | <15      | <15      | <15              | <15              | <15      | <15        |
| Cs-137                                       | <15      | <15      | <15              | <15              | <15      | <15        |
| Ba-140                                       | <60      | <60      | <60              | <60              | <60      | <60        |
| La-140                                       | <15      | <15      | <19 <sup>a</sup> | <22 <sup>a</sup> | <15      | <15        |

<sup>a</sup> LLD not met; original collection date reported in error.

Table 19. Surface water samples, analysis for Iodine-131 and gamma-emitting isotopes.  
(continued)

| Sample Description and Concentration (pCi/L) |          |          |                  |                  |                  |          |
|----------------------------------------------|----------|----------|------------------|------------------|------------------|----------|
| <u>Indicator</u>                             |          |          |                  |                  |                  |          |
| <u>D-51 - Plant Discharge</u>                |          |          |                  |                  |                  |          |
| Date Collected                               | 01-22-92 | 02-24-92 | 03-24-92         | 04-29-92         | 05-26-92         | 06-30-92 |
| Lab Code                                     | DSW-4431 | DSW-4721 | DSW-5201         | DSW-5598         | DSW-5955         | DSW-6332 |
| I-131                                        | <2.0     | <2.0     | <2.0             | <2.0             | <2.0             | <2.0     |
| Mn-54                                        | <15      | <15      | <15              | <15              | <15              | <15      |
| Fe-59                                        | <30      | <30      | <30              | <30              | <30              | <30      |
| Co-58                                        | <15      | <15      | <15              | <15              | <15              | <15      |
| Co-60                                        | <15      | <15      | <15              | <15              | <15              | <15      |
| Zn-65                                        | <30      | <30      | <30              | <30              | <30              | <30      |
| Nb-95                                        | <15      | <15      | <15              | <15              | <15              | <15      |
| Zr-95                                        | <30      | <30      | <30              | <30              | <30              | <30      |
| Cs-134                                       | <15      | <15      | <15              | <15              | <15              | <15      |
| Cs-137                                       | <15      | <15      | <15              | <15              | <15              | <15      |
| Ba-140                                       | <60      | <60      | <60              | <60              | <60              | <60      |
| La-140                                       | <15      | <15      | <15              | <15              | <15              | <15      |
| Date Collected                               | 07-29-92 | 08-28-92 | 09-18-92         | 10-14-92         | 11-18-92         | 12-16-92 |
| Lab Code                                     | DSW-6716 | DSW-7122 | DSW-7467         | DSW-7899         | DSW-8323         | DSW-8556 |
| I-131                                        | <2.0     | <2.0     | <2.0             | <2.0             | <2.0             | <2.0     |
| Mn-54                                        | <15      | <15      | <15              | <15              | <15              | <15      |
| Fe-59                                        | <30      | <30      | <30              | <30              | <30              | <30      |
| Co-58                                        | <15      | <15      | <15              | <15              | <15              | <15      |
| Co-60                                        | <15      | <15      | <15              | <15              | <15              | <15      |
| Zn-65                                        | <30      | <30      | <30              | <30              | <30              | <30      |
| Nb-95                                        | <15      | <15      | <15              | <15              | <15              | <15      |
| Zr-95                                        | <30      | <30      | <30              | <30              | <30              | <30      |
| Cs-134                                       | <15      | <15      | <15              | <15              | <15              | <15      |
| Cs-137                                       | <15      | <15      | <15              | <15              | <15              | <15      |
| Ba-140                                       | <60      | <60      | <60              | <60              | <60              | <60      |
| La-140                                       | <15      | <15      | <27 <sup>a</sup> | <16 <sup>a</sup> | <20 <sup>a</sup> | <15      |

<sup>a</sup> LLD not met; original collection date reported in error.

Table 19. Surface water samples, analysis for Iodine-131 and gamma-emitting isotopes.  
(continued)

| Sample Description and Concentration (pCi/L) |            |          |          |          |          |          |
|----------------------------------------------|------------|----------|----------|----------|----------|----------|
| <u>Indicator</u>                             |            |          |          |          |          |          |
| <u>D-99 - Pleasant Creek</u>                 |            |          |          |          |          |          |
| Date Collected                               | 01-22-92   | 02-24-92 | 03-24-92 | 04-29-92 | 05-26-92 | 06-30-92 |
| Lab Code                                     | DSW-4432   | DSW-4722 | DSW-5202 | DSW-5599 | DSW-5956 | DSW-6333 |
| I-131                                        | <2.0       | <2.0     | <2.0     | <2.0     | <2.0     | <2.0     |
| Mn-54                                        | <15        | <15      | <15      | <15      | <15      | <15      |
| Fe-59                                        | <30        | <30      | <30      | <30      | <30      | <30      |
| Co-58                                        | <15        | <15      | <15      | <15      | <15      | <15      |
| Co-60                                        | <15        | <15      | <15      | <15      | <15      | <15      |
| Zn-65                                        | <30        | <30      | <30      | <30      | <30      | <30      |
| Nb-95                                        | <15        | <15      | <15      | <15      | <15      | <15      |
| Zr-95                                        | <30        | <30      | <30      | <30      | <30      | <30      |
| Cs-134                                       | <15        | <15      | <15      | <15      | <15      | <15      |
| Cs-137                                       | <15        | <15      | <15      | <15      | <15      | <15      |
| Ba-140                                       | <60        | <60      | <60      | <60      | <60      | <60      |
| La-140                                       | <15        | <15      | <15      | <15      | <15      | <15      |
| Date Collected                               | 07-29-92   | 08-28-92 | 09-28-92 | 10-26-92 | 11-24-92 | 12-16-92 |
| Lab Code                                     | DSW-6717,8 | DSW-7123 | DSW-7468 | DSW-7900 | DSW-8324 | DSW-8557 |
| I-131                                        | <2.0       | <2.0     | <2.0     | <2.0     | <2.0     | <2.0     |
| Mn-54                                        | <15        | <15      | <15      | <15      | <15      | <15      |
| Fe-59                                        | <30        | <30      | <30      | <30      | <30      | <30      |
| Co-58                                        | <15        | <15      | <15      | <15      | <15      | <15      |
| Co-60                                        | <15        | <15      | <15      | <15      | <15      | <15      |
| Zn-65                                        | <30        | <30      | <30      | <30      | <30      | <30      |
| Nb-95                                        | <15        | <15      | <15      | <15      | <15      | <15      |
| Zr-95                                        | <30        | <30      | <30      | <30      | <30      | <30      |
| Cs-134                                       | <15        | <15      | <15      | <15      | <15      | <15      |
| Cs-137                                       | <15        | <15      | <15      | <15      | <15      | <15      |
| Ba-140                                       | <60        | <60      | <60      | <60      | <60      | <60      |
| La-140                                       | <15        | <15      | <15      | <15      | <15      | <15      |

Table 19. Surface water samples, analysis for K-40, Iodine-131 and gamma-emitting isotopes (continued)

| Sample Description and Concentration (pCi/L) |                                       |          |          |                   |            |                   |
|----------------------------------------------|---------------------------------------|----------|----------|-------------------|------------|-------------------|
| <u>Indicator</u>                             | <u>D-107 - Plant Sewage Discharge</u> |          |          |                   |            |                   |
| Date Collected                               | 01-22-92                              | 02-24-92 | 03-24-92 | 04-29-92          | 05-26-92   | 06-30-92          |
| Lab Code                                     | DSW-4433                              | DSW-4723 | DSW-5203 | DSW-5600          | DSW-5957   | DSW-6334          |
| K-40 <sup>a</sup>                            | 30.3                                  | 15.8     | 27.9     | 24.0              | 20.2       | 21.1              |
| I-131                                        | <2.0                                  | <2.0     | <2.0     | <2.0              | <2.0       | <2.0              |
| Mn-54                                        | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Fe-59                                        | <30                                   | <30      | <30      | <30               | <30        | <30               |
| Co-58                                        | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Co-60                                        | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Zn-65                                        | <30                                   | <30      | <30      | <30               | <30        | <30               |
| Nb-95                                        | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Zr-95                                        | <30                                   | <30      | <30      | <30               | <30        | <30               |
| Cs-134                                       | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Cs-137                                       | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Ba-140                                       | <60                                   | <60      | <60      | <60               | <60        | <60               |
| La-140                                       | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Date Collected                               | 07-29-92                              | 08-28-92 | 09-28-92 | 10-26-92          | 11-24-92   | 12-16-92          |
| Lab Code                                     | DSW-6719                              | DSW-7124 | DSW-7469 | DSW-7901          | DSW-8325,6 | DSW-8558          |
| K-40 <sup>a</sup>                            | 17.1                                  | 19.8     | 15.8     | 20.3 <sup>b</sup> | 20.2       | 19.0 <sup>b</sup> |
| I-131                                        | <2.0                                  | <2.0     | <2.0     | <2.0              | <2.0       | <2.0              |
| Mn-54                                        | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Fe-59                                        | <30                                   | <30      | <30      | <30               | <30        | <30               |
| Co-58                                        | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Co-60                                        | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Zn-65                                        | <30                                   | <30      | <30      | <30               | <30        | <30               |
| Nb-95                                        | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Zr-95                                        | <30                                   | <30      | <30      | <30               | <30        | <30               |
| Cs-134                                       | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Cs-137                                       | <15                                   | <15      | <15      | <15               | <15        | <15               |
| Ba-140                                       | <60                                   | <60      | <60      | <60               | <60        | <60               |
| La-140                                       | <15                                   | <15      | <15      | <15               | <15        | <15               |

<sup>a</sup> Analyzed by flame photometry.

<sup>b</sup> Result of reanalysis.

Table 19. Surface water samples, analysis for Iodine-131 and gamma-emitting isotopes.  
(continued)

| Sample Description and Concentration (pCi/L) |          |          |          |          |            |          |
|----------------------------------------------|----------|----------|----------|----------|------------|----------|
| <u>Control</u>                               |          |          |          |          |            |          |
| <u>D-49 - Lewis Access</u>                   |          |          |          |          |            |          |
| Date Collected                               | 01-22-92 | 02-24-92 | 03-24-92 | 04-29-92 | 05-26-92   | 06-30-92 |
| Lab Code                                     | DSW-4429 | DSW-4719 | DSW-5199 | DSW-5596 | DSW-5952,3 | DSW-6329 |
| I-131                                        | <2.0     | <2.0     | <2.0     | <2.0     | <2.0       | <2.0     |
| Mn-54                                        | <15      | <15      | <15      | <15      | <15        | <15      |
| Fe-59                                        | <30      | <30      | <30      | <30      | <30        | <30      |
| Co-58                                        | <15      | <15      | <15      | <15      | <15        | <15      |
| Co-60                                        | <15      | <15      | <15      | <15      | <15        | <15      |
| Zn-65                                        | <30      | <30      | <30      | <30      | <30        | <30      |
| Nb-95                                        | <15      | <15      | <15      | <15      | <15        | <15      |
| Zr-95                                        | <30      | <30      | <30      | <30      | <30        | <30      |
| Cs-134                                       | <15      | <15      | <15      | <15      | <15        | <15      |
| Cs-137                                       | <15      | <15      | <15      | <15      | <15        | <15      |
| Ba-140                                       | <60      | <60      | <60      | <60      | <60        | <60      |
| La-140                                       | <15      | <15      | <15      | <15      | <15        | <15      |
| Date Collected                               | 07-29-92 | 08-28-92 | 09-28-92 | 10-26-92 | 11-24-92   | 12-16-92 |
| Lab Code                                     | DSW-6714 | DSW-7120 | DSW-7465 | DSW-7897 | DSW-8321   | DSW-8554 |
| I-131                                        | <2.0     | <2.0     | <2.0     | <2.0     | <2.0       | <2.0     |
| Mn-54                                        | <15      | <15      | <15      | <15      | <15        | <15      |
| Fe-59                                        | <30      | <30      | <30      | <30      | <30        | <30      |
| Co-58                                        | <15      | <15      | <15      | <15      | <15        | <15      |
| Co-60                                        | <15      | <15      | <15      | <15      | <15        | <15      |
| Zn-65                                        | <30      | <30      | <30      | <30      | <30        | <30      |
| Nb-95                                        | <15      | <15      | <15      | <15      | <15        | <15      |
| Zr-95                                        | <30      | <30      | <30      | <30      | <30        | <30      |
| Cs-134                                       | <15      | <15      | <15      | <15      | <15        | <15      |
| Cs-137                                       | <15      | <15      | <15      | <15      | <15        | <15      |
| Ba-140                                       | <60      | <60      | <60      | <60      | <60        | <60      |
| La-140                                       | <15      | <15      | <15      | <15      | <15        | <15      |

Table 20. Surface water samples, quarterly composites of monthly samples, analysis for tritium, 1992.

| Location and<br>Collection Period | Lab Code | Concentration (pCi/L)<br>H-3 |
|-----------------------------------|----------|------------------------------|
| <u>Indicator</u>                  |          |                              |
| <u>D-50</u>                       |          |                              |
| 1st Quarter                       | DSW-5224 | <330                         |
| 2nd Quarter                       | 6356     | <330                         |
| 3rd Quarter                       | 7477     | <330                         |
| 4th Quarter                       | 8993     | <330                         |
| Annual Mean $\pm$ s.d.            |          | <330                         |
| <u>D-51</u>                       |          |                              |
| 1st Quarter                       | DSW-5225 | <330                         |
| 2nd Quarter                       | 6357     | <330                         |
| 3rd Quarter                       | 7478     | <330                         |
| 4th Quarter                       | 8994     | <330                         |
| Annual Mean $\pm$ s.d.            |          | <330                         |
| <u>D-99</u>                       |          |                              |
| 1st Quarter                       | DSW-5226 | <330                         |
| 2nd Quarter                       | 6358     | <330                         |
| 3rd Quarter                       | 7479     | <330                         |
| 4th Quarter                       | 8995     | <330                         |
| Annual Mean $\pm$ s.d.            |          | <330                         |
| <u>D-107</u>                      |          |                              |
| 1st Quarter                       | DSW-5227 | <330                         |
| 2nd Quarter                       | 6359     | <330                         |
| 3rd Quarter                       | 7480     | <330                         |
| 4th Quarter                       | 8996     | <330                         |
| Annual Mean $\pm$ s.d.            |          | <330                         |
| <u>Control</u>                    |          |                              |
| <u>D-49</u>                       |          |                              |
| 1st Quarter                       | DSW-5223 | <330                         |
| 2nd Quarter                       | 6355     | <330                         |
| 3rd Quarter                       | 7476     | <330                         |
| 4th Quarter                       | 8992     | <330                         |
| Annual Mean $\pm$ s.d.            |          | <330                         |

Table 21. Fish samples, analysis of edible portion for gamma-emitting isotopes.  
Collection: Semiannually.

| Sample Description and Concentration (pCi/g wet) |                             |                                         |                                         |
|--------------------------------------------------|-----------------------------|-----------------------------------------|-----------------------------------------|
| <u>Indicator</u>                                 |                             |                                         |                                         |
| Downstream D-61                                  |                             |                                         |                                         |
| Date Collected<br>Type<br>Lab Code               | 06-04-92<br>Carp<br>DF-1778 | 06-04-92<br>Carp sucker<br>DF-1779      | 06-04-92<br>Redhorse<br>DF-1780         |
| K-40                                             | 2.73±0.34                   | 3.02±0.42                               | 2.75±0.38                               |
| Mn-54                                            | <0.017                      | <0.027                                  | <0.019                                  |
| Co-58                                            | <0.024                      | <0.036                                  | <0.026                                  |
| Co-60                                            | <0.021                      | <0.022                                  | <0.021                                  |
| Fe-59                                            | <0.087                      | <0.076                                  | <0.093                                  |
| Zn-65                                            | <0.054                      | <0.057                                  | <0.060                                  |
| Nb-95                                            | <0.045                      | <0.060                                  | <0.048                                  |
| Zr-95                                            | <0.045                      | <0.059                                  | <0.049                                  |
| Ru-103                                           | <0.031                      | <0.044                                  | <0.033                                  |
| Ru-106                                           | <0.13                       | <0.18                                   | <0.14                                   |
| Cs-134                                           | <0.015                      | <0.018                                  | <0.017                                  |
| Cs-137                                           | <0.016                      | <0.018                                  | <0.016                                  |
| Ce-141                                           | <0.045                      | <0.12                                   | <0.055                                  |
| Ce-144                                           | <0.075                      | <0.18                                   | <0.088                                  |
| Date Collected<br>Type<br>Lab Code               | 09-18-92<br>Carp<br>DF-1871 | 09-18-92<br>Flathead Catfish<br>DF-1872 | 09-18-92<br>River Carpsucker<br>DF-1873 |
| K-40                                             | 3.03±0.36                   | 3.81±0.48                               | 3.78±0.50                               |
| Mn-54                                            | <0.016                      | <0.026                                  | <0.027                                  |
| Co-58                                            | <0.025                      | <0.032                                  | <0.034                                  |
| Co-60                                            | <0.020                      | <0.025                                  | <0.037                                  |
| Fe-59                                            | <0.081                      | <0.078                                  | <0.090                                  |
| Zn-65                                            | <0.064                      | <0.072                                  | <0.073                                  |
| Nb-95                                            | <0.032                      | <0.043                                  | <0.046                                  |
| Zr-95                                            | <0.040                      | <0.058                                  | <0.059                                  |
| Ru-103                                           | <0.024                      | <0.035                                  | <0.036                                  |
| Ru-106                                           | <0.13                       | <0.19                                   | <0.20                                   |
| Cs-134                                           | <0.015                      | <0.022                                  | <0.021                                  |
| Cs-137                                           | <0.016                      | <0.024                                  | <0.026                                  |
| Ce-141                                           | <0.037                      | <0.054                                  | <0.052                                  |
| Ce-144                                           | <0.078                      | <0.12                                   | <0.11                                   |

Table 21. Fish samples, analysis of edible portion for gamma-emitting isotopes.  
(continued).

| Sample Description and Concentration (pCi/g wet) |                             |                                        |                                         |
|--------------------------------------------------|-----------------------------|----------------------------------------|-----------------------------------------|
| <u>Control</u>                                   |                             |                                        |                                         |
| <u>Upstream D-49</u>                             |                             |                                        |                                         |
| Date Collected<br>Type<br>Lab Code               | 06-04-92<br>Carp<br>DF-1775 | 06-04-92<br>Redhorse<br>DF-1776        | 06-04-92<br>Buffalo<br>DF-1777          |
| K-40                                             | 2.37±0.36                   | 2.74±0.35                              | 3.21±0.34                               |
| Mn-54                                            | <0.020                      | <0.019                                 | <0.013                                  |
| Co-58                                            | <0.028                      | <0.024                                 | <0.021                                  |
| Co-60                                            | <0.022                      | <0.016                                 | <0.017                                  |
| Fe-59                                            | <0.097                      | <0.10                                  | <0.038                                  |
| Zn-65                                            | <0.060                      | <0.047                                 | <0.030                                  |
| Nb-95                                            | <0.046                      | <0.037                                 | <0.035                                  |
| Zr-95                                            | <0.049                      | <0.043                                 | <0.040                                  |
| Ru-103                                           | <0.031                      | <0.023                                 | <0.028                                  |
| Ru-106                                           | <0.15                       | <0.13                                  | <0.12                                   |
| Cs-134                                           | <0.016                      | <0.011                                 | <0.011                                  |
| Cs-137                                           | <0.017                      | <0.009                                 | <0.012                                  |
| Ce-141                                           | <0.055                      | <0.033                                 | <0.048                                  |
| Ce-144                                           | <0.087                      | <0.052                                 | <0.084                                  |
| Date Collected<br>Type<br>Lab Code               | 09-18-92<br>Carp<br>DF-1868 | 09-18-92<br>Channel Catfish<br>DF-1869 | 09-18-92<br>River Carpsucker<br>DF-1870 |
| K-40                                             | 3.15±0.36                   | 2.78±0.42                              | 3.33±0.44                               |
| Mn-54                                            | <0.018                      | <0.030                                 | <0.024                                  |
| Co-58                                            | <0.022                      | <0.030                                 | <0.029                                  |
| Co-60                                            | <0.022                      | <0.025                                 | <0.023                                  |
| Fe-59                                            | <0.077                      | <0.099                                 | <0.090                                  |
| Zn-65                                            | <0.058                      | <0.057                                 | <0.070                                  |
| Nb-95                                            | <0.030                      | <0.050                                 | <0.046                                  |
| Zr-95                                            | <0.037                      | <0.055                                 | <0.056                                  |
| Ru-103                                           | <0.021                      | <0.039                                 | <0.034                                  |
| Ru-106                                           | <0.13                       | <0.19                                  | <0.20                                   |
| Cs-134                                           | <0.014                      | <0.019                                 | <0.021                                  |
| Cs-137                                           | <0.015                      | <0.020                                 | <0.021                                  |
| Ce-141                                           | <0.036                      | <0.099                                 | <0.052                                  |
| Ce-144                                           | <0.075                      | <0.20                                  | <0.11                                   |

Table 22. River sediment samples, analysis for gamma-emitting isotopes.  
Collection: Semiannually.

| Sample Description and Concentration (pCi/g dry) |            |           |             |            |
|--------------------------------------------------|------------|-----------|-------------|------------|
| Control                                          |            |           |             |            |
| Location                                         | D-50       | D-50      |             |            |
| Date Collected                                   | 05-20-92   | 10-01-92  |             |            |
| Lab Code                                         | DBS-1138   | DBS-1184  |             |            |
| K-40                                             | 10.34±0.47 | 6.76±0.92 |             |            |
| Mn-54                                            | <0.021     | <0.060    |             |            |
| Co-58                                            | <0.026     | <0.093    |             |            |
| Co-60                                            | <0.026     | <0.076    |             |            |
| Nb-95                                            | <0.034     | <0.17     |             |            |
| Zr-95                                            | <0.049     | <0.15     |             |            |
| Ru-103                                           | <0.031     | <0.11     |             |            |
| Ru-106                                           | <0.16      | <0.49     |             |            |
| Cs-134                                           | <0.017     | <0.053    |             |            |
| Cs-137                                           | <0.018     | <0.048    |             |            |
| Ce-141                                           | <0.051     | <0.18     |             |            |
| Ce-144                                           | <0.13      | <0.23     |             |            |
| Indicator                                        |            |           |             |            |
| Location                                         | D-51       | D-51      | D-107       | D-107      |
| Date Collected                                   | 05-20-92   | 10-01-92  | 05-20-92    | 10-01-92   |
| Lab Code                                         | DBS-1139   | DBS-1185  | DBS-1140    | DBS-1186   |
| K-40                                             | 8.10±0.44  | 5.52±0.61 | 9.22±0.52   | 5.94±0.47  |
| Mn-54                                            | <0.023     | <0.036    | <0.028      | <0.034     |
| Co-58                                            | <0.026     | <0.052    | <0.029      | <0.046     |
| Co-60                                            | <0.023     | <0.044    | 0.23±0.034  | 0.22±0.034 |
| Nb-95                                            | <0.034     | <0.11     | <0.039      | <0.093     |
| Zr-95                                            | <0.044     | <0.11     | <0.059      | <0.091     |
| Ru-103                                           | <0.029     | <0.079    | <0.042      | <0.075     |
| Ru-106                                           | <0.15      | <0.28     | <0.22       | <0.26      |
| Cs-134                                           | <0.015     | <0.036    | <0.023      | <0.047     |
| Cs-137                                           | <0.017     | <0.032    | 0.062±0.024 | <0.028     |
| Ce-141                                           | <0.056     | <0.12     | <0.080      | <0.14      |
| Ce-144                                           | <0.13      | <0.15     | <0.18       | <0.20      |

Table 23. Precipitation samples, analysis for gamma-emitting isotopes.  
Collection: Monthly, 1992.

| Sample Description and Concentration (pCi/L) |                      |                     |                     |                     |
|----------------------------------------------|----------------------|---------------------|---------------------|---------------------|
| Collection Period<br>Lab Code                | January<br>DP-1115   | February<br>DP-1123 | March<br>DP-1133    | April<br>DP-1142    |
| Mn-54                                        | <5.4                 | <5.9                | <6.8                | <4.7                |
| Fe-59                                        | <16.1                | <13.6               | <15.4               | <14.0               |
| Co-58                                        | <5.5                 | <6.4                | <7.0                | <5.1                |
| Co-60                                        | <6.6                 | <6.4                | <6.1                | <5.9                |
| Zn-65                                        | <11.8                | <13.7               | <14.4               | <11.1               |
| Nb-95                                        | <6.8                 | <6.8                | <7.6                | <5.3                |
| Zr-95                                        | <10.4                | <11.6               | <11.6               | <8.9                |
| I-131                                        | <18.0                | <13.6               | <18.8               | <11.3               |
| Cs-134                                       | <4.9                 | <5.4                | <6.0                | <4.3                |
| Cs-137                                       | <4.7                 | <5.6                | <5.8                | <4.4                |
| Ba-140                                       | <41.7 <sup>a</sup>   | <34.9               | <42.8               | <27.5               |
| La-140                                       | <13.2                | <10.3               | <14.0               | <8.7                |
| Collection Period<br>Lab Code                | May<br>DP-1150       | June<br>DP-1158     | July<br>DP-1162     | August<br>DP-1170   |
| Mn-54                                        | <4.3                 | <4.7                | <4.4                | <3.2                |
| Fe-59                                        | <10.8                | <11.9               | <10.6               | <7.5                |
| Co-58                                        | <4.9                 | <5.0                | <4.6                | <3.4                |
| Co-60                                        | <4.5                 | <4.3                | <4.6                | <3.0                |
| Zn-65                                        | <11.6                | <10.2               | <9.3                | <7.9                |
| Nb-95                                        | <5.8                 | <6.2                | <5.4                | <3.7                |
| Zr-95                                        | <8.9                 | <9.8                | <9.0                | <6.1                |
| I-131                                        | <17.3                | <23.1               | <14.6               | <8.6                |
| Cs-134                                       | <5.3                 | <4.1                | <4.1                | <3.6                |
| Cs-137                                       | <4.5                 | <4.3                | <4.2                | <3.2                |
| Ba-140                                       | <35.3                | <44.3               | <32.1               | <20.1               |
| La-140                                       | <8.5                 | <14.7               | <10.4               | <5.2                |
| Collection Period<br>Lab Code                | September<br>DP-1178 | October<br>DP-1188  | November<br>DP-1202 | December<br>DP-1205 |
| Mn-54                                        | <4.7                 | <6.0                | <4.8                | <3.6                |
| Fe-59                                        | <12.5                | <10.8               | <11.6               | <11.3               |
| Co-58                                        | <5.0                 | <4.6                | <4.9                | <3.8                |
| Co-60                                        | <4.4                 | <4.8                | <5.0                | <4.0                |
| Zn-65                                        | <9.6                 | <10.0               | <10.3               | <7.9                |
| Nb-95                                        | <6.8                 | <5.0                | <6.0                | <4.3                |
| Zr-95                                        | <9.9                 | <8.8                | <9.8                | <6.5                |
| I-131                                        | <35.8                | <6.2                | <22.4               | <6.7                |
| Cs-134                                       | <4.6                 | <4.1                | <4.2                | <3.1                |
| Cs-137                                       | <4.5                 | <4.6                | <4.5                | <3.9                |
| Ba-140                                       | <58.8                | <17.9               | <44.7               | <18.7               |
| La-140                                       | <14.2                | <4.0                | <14.1               | <7.9                |

<sup>a</sup> Corrected result.

Table 24. Precipitation samples, quarterly composites of monthly samples, analysis for tritium, 1992.

| Location and<br>Collection Period | Lab Code | <u>Concentration (pCi/L)</u><br>H-3 |
|-----------------------------------|----------|-------------------------------------|
| 1st Quarter                       | DP-1134  | <330                                |
| 2nd Quarter                       | DP-1159  | <330                                |
| 3rd Quarter                       | DP-1179  | <330                                |
| 4th Quarter                       | DP-8997  | <330                                |

NOTE: Page 44 is intentionally left out.

Table 26. Soil samples, analysis for strontium-90 and gamma-emitting isotopes.  
Collection: Annually, 1992

| Sample Description and Concentration (pCi/g dry) |                             |                             |
|--------------------------------------------------|-----------------------------|-----------------------------|
| Location<br>Date Collected<br>Lab Code           | D-15<br>10-07-92<br>DSO-721 | D-16<br>10-07-92<br>DSO-722 |
| Sr-90                                            | 0.038±0.010                 | 0.043±0.006                 |
| K-40                                             | 10.50±1.06                  | 11.40±0.55                  |
| Mn-54                                            | <0.067                      | <0.026                      |
| Co-58                                            | <0.090                      | <0.027                      |
| Co-60                                            | <0.077                      | <0.033                      |
| Nb-95                                            | <0.16                       | <0.043                      |
| Zr-95                                            | <0.18                       | <0.054                      |
| Ru-103                                           | <0.12                       | <0.036                      |
| Ru-106                                           | <0.52                       | <0.21                       |
| Cs-134                                           | <0.085                      | <0.031                      |
| Cs-137                                           | <0.060                      | 0.26±0.026                  |
| Ce-141                                           | <0.22                       | <0.062                      |
| Ce-144                                           | <0.37                       | <0.16                       |