

# YANKEE ATOMIC ELECTRIC COMPANY

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March 14, 2007  
BYR 2007-026

U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555-001

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Subject: 2006 Annual Radiological Environmental Operating Report

Yankee Atomic Electric Company (YAEC) herewith submits the 2006 Annual Radiological Environmental Operating Report. This document includes a summary of the findings of the Radiological Environmental Monitoring Program conducted by YAEC in the vicinity of the Rowe site. This information is submitted in accordance with the Quality Assurance Program (formerly referred to as the Yankee Decommissioning Quality Assurance Program).

Should you have any questions regarding this submittal, please contact me at (860)267-3938.

Sincerely,

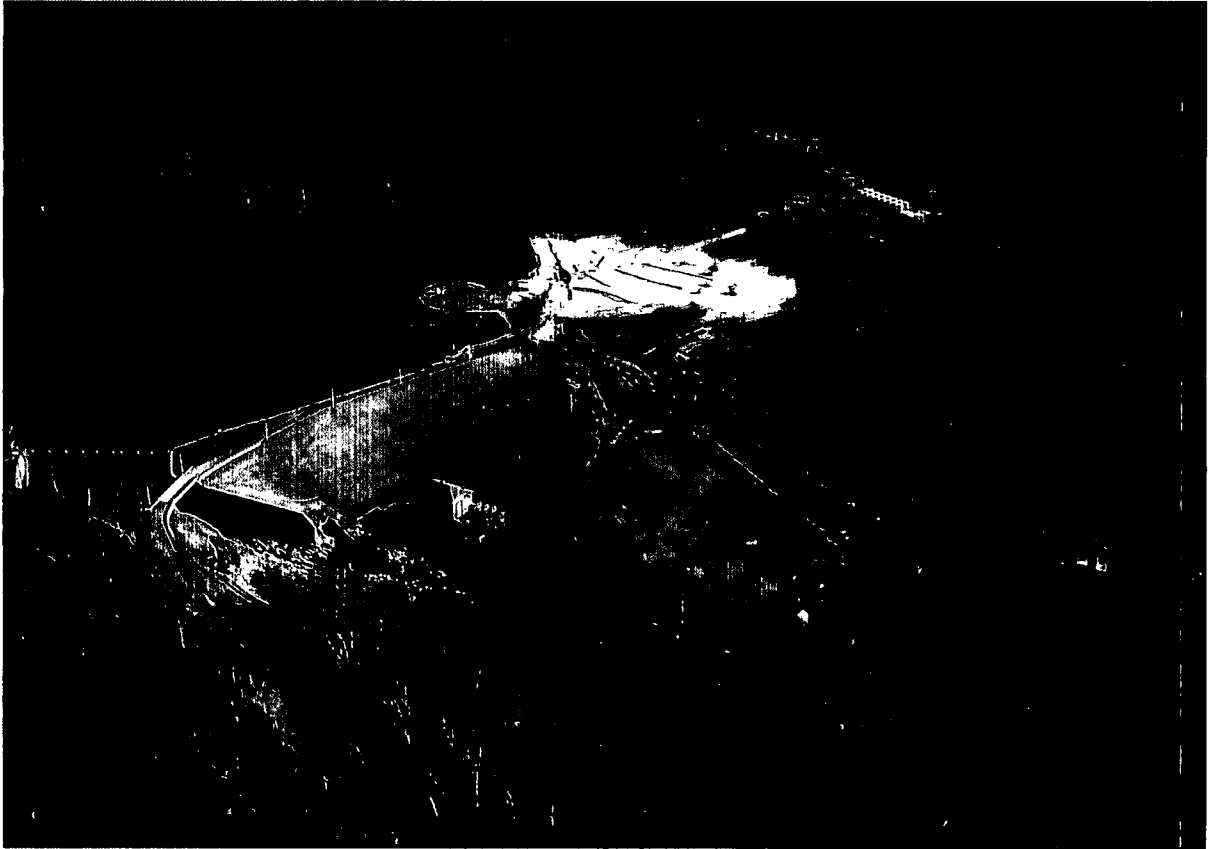
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**ANNUAL RADIOLOGICAL  
ENVIRONMENTAL OPERATING REPORT  
(AREOR)**

**YANKEE NUCLEAR POWER STATION  
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM**

**JANUARY 1, 2006 - DECEMBER 31, 2006**

**DOCKET NO. 50-29  
LICENSE NO. DPR-3**

**YANKEE ATOMIC ELECTRIC COMPANY  
Rowe, Massachusetts**

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## **1.0 EXECUTIVE SUMMARY**

The radiological environmental monitoring program for the Yankee Atomic Electric Company's Rowe site (YR) continued for the period January through December 2006, in compliance with the Yankee Quality Assurance Program (YQAP), Appendix D, and the Off-Site Dose Calculation Manual (ODCM). This annual report was prepared by the Yankee Atomic Electric Company (YAEC). YAEC and Normandeau Associates performed sample collection and field preparation activities during 2006. Gamma exposure rate measurements and laboratory analyses were performed by the AREVA Environmental Laboratory (E-LAB).

Thermoluminescent dosimeters (TLDs) were used to measure direct gamma exposure in the vicinity of the site and as far away as 22.2 kilometers. Radiochemical and radiological analyses of samples were performed to detect the presence of any site-related radioactivity. Samples collected include air-particulate filters, river water, well water, storm drain water, bottom and shoreline sediment, and fish.

In evaluating the results of those analyses it is necessary to consider the variability of natural and man-made sources of radioactivity, distribution in the environment and uptake in environmental media. This variability is dependent on many factors including, past spatial variability of radioactive fallout from nuclear weapons tests and on-going redistribution of the fallout, contribution from cosmically produced radioactivity, ground water dynamics and soil characteristics. Any one of these factors could cause significant variations in measured levels of radioactivity. Therefore, these factors need to be considered in order to properly explain any variations in radiation detected and to distinguish between natural and station related radioactivity.

Yankee Nuclear Power Station (YNPS) was permanently shutdown in 1991. Activities at the site are now focused on fuel storage. By the end of 2006, decommissioning of the site was complete. The radiological monitoring through this REMP was substantially reduced to only include direct radiation by the end of 2006.

The predominant radioactivity detected by the monitoring program during 2006 was that from non-station sources, which includes fallout from past nuclear weapons tests and naturally occurring radionuclides. As has been typical of previous years, site-related radioactivity was observed in some of the monitoring samples. The specific observations of possible site effects included Cesium-137 in bottom sediment near the former plant discharge point and tritium in ground water. Air particulate analysis results collected in 2006 demonstrated that no site-related airborne particulate activity was present in samples collected beyond the site boundary or at the ISFSI.

## **2.0 INTRODUCTION**

### **2.1 GENERAL SITE INFORMATION**

The Yankee Atomic Electric Company's Rowe (YR) site is located on over 1800 acres in a predominantly rural area of northwestern Massachusetts, three-quarters of a mile south of the Vermont border. The site resides in the town of Rowe, Massachusetts, approximately 9 air miles east-northeast of North Adams, Massachusetts. The surrounding area is heavily forested and lightly populated. Hills bounding the river valley rise 500 to 1000 feet above the site, reaching elevations of 2100 feet.

The Deerfield River is used extensively for hydroelectric power generation both upstream and downstream of YR. The Sherman Dam, immediately adjacent to the site, operates as a hydroelectric generating station. Sherman Pond, the impoundment behind this dam, had been used as a source of cooling water for the former power plant.

The former nuclear power plant was voluntarily shut down on October 1, 1991 after 31 years of operation. The site was involved in the process of decommissioning over the years which involved the disassembly and removal of the plant components and structures and was completed in 2006. This process took place in strict conformance with USNRC regulations. Oversight of the site closure process will also continue from the U.S. Environmental Protection Agency, the Massachusetts Department of Environmental Protection, and Massachusetts Department of Public Health.

## 2.2 PROGRAM DESIGN

The Radiological Environmental Monitoring Program for the site was designed with specific objectives in mind. These were:

- To provide an early indication of the appearance or accumulation of any radioactive material in the environment caused by YR activities.
- To provide assurance to regulatory agencies and the public that the environmental impact from YR is known and within anticipated limits.
- To verify the adequacy and proper functioning of site effluent controls and monitoring systems.
- To provide standby monitoring capability for rapid assessment of risk to the general public in the event of unanticipated or accidental releases of radioactive material.

These objectives have continued to be in force, to varying degrees, throughout the completion of decommissioning activities at the YR site. Due to the completion of decommissioning of the site most of the objectives have a much more limited degree of importance than in the past.

The Radiological Environmental Monitoring Program was initiated in 1958, approximately two years before the plant began operation in 1960. It has been in operation continuously since that time, with improvements made periodically over those years. The program continued without modification following the shutdown of the plant in 1991 and was reduced in scope beginning in 1997, primarily to reflect the absence of short-lived radionuclides in various pathways resulting from the plant shutdown (no source of production) and the individual radionuclides short half-life (long decay time since the shutdown). Now that the decommissioning process has been completed, the Radiological Environmental Monitoring Program (REMP) has been reduced to eliminate all environmental media and program elements, with the exception of direct radiation.

The program was designed to meet the intent of NRC Regulatory Guide 4.1, *Programs for Monitoring Radioactivity in the Environs of Nuclear Power Plants*; NRC Regulatory Guide 4.8, *Environmental Technical Specifications for Nuclear Power Plants*; the NRC Branch Technical Position of November 1979 entitled, *An Acceptable Radiological Environmental Monitoring Program*; and NRC NUREG-0472, *Radiological Effluent Technical Specifications for PWR's*.

The environmental TLD program was designed and tested around NRC Regulatory Guide 4.13, *Performance, Testing and Procedural Specifications for Thermoluminescence Dosimetry: Environmental Applications*. The quality assurance program was designed around the guidance given in NRC Regulatory Guide 4.15, *Quality Assurance for Radiological Monitoring Programs (Normal Operations) - Effluent Streams and the Environment*.

The monitoring requirements of the REMP are given in Section 2 of the ODCM and in Table 2-1 of this report. The identification of the required sampling locations is given in Section 2 of the ODCM and in Tables 2-2 and 2-3 of this report. The sampling and monitoring locations are shown graphically on the maps in Figures 2-1 through 2-6.

### 2.3 MONITORING ZONES

The REMP is designed to allow comparison of levels of radioactivity in samples from the area possibly influenced by the site to levels found in areas not influenced by the site activities. The first area locations are called "indicators" and the second area locations are called "controls." The distinction between the two areas, depending on the type of sample or sample pathway, is based on one or more of several factors, such as site meteorological history, meteorological dispersion calculations, relative direction from the site, river flow, and distance. Analysis of survey data from the two areas aids in determining if there is a significant difference between the two areas. It can also help in differentiating between radioactivity and radiation due to site-related activities and that due to other fluctuations in the environment, such as atmospheric nuclear weapons test fallout or seasonal variations in the natural background.

### 2.4 PATHWAYS MONITORED

For all or part of 2006, three pathway categories were monitored by the REMP. They are waterborne, ingestion and direct radiation pathways. Each of these three categories is monitored by the collection of one or more sample media, which are listed as follows, and are described in more detail in this section:

- Waterborne Pathways (Eliminated during 2006)
  - River Water Sampling Section 2.5.1
  - Ground Water Sampling Section 2.5.2
  - Sediment Sampling Section 2.5.3
- Ingestion Pathways
  - Fish Sampling (Eliminated during 2006) Section 2.5.4
- Direct Radiation Pathway
  - TLD Monitoring Section 2.5.5

## 2.5 DESCRIPTIONS OF MONITORING PROGRAMS

Sample types and frequency of analysis are given in Table 2-1. The sample locations are listed in Table 2-2 and Table 2-3 and shown in Figures 2-1 to 2-7. ODCM lower limits of detection (LLDs) and required reporting levels are listed in Tables 2-4 and 2-5. The program as described here includes both required samples as specified in the Off-Site Dose Calculation Manual (ODCM) and any extra samples. Following is a detailed description of the sampling program for 2006:

### 2.5.1 River Water Sampling (Eliminated during 2006, Rev. 20 to the ODCM)

An automatic composite sampler is located at one downstream sampling location. The sampler is controlled by a timer that collects an aliquot of river water at least every two hours over a period of one month. In addition, river water grab samples are collected monthly at Sherman Pond, near the plant site, and at one upstream location (control). All river water samples are preserved with HCL and NaHSO<sub>3</sub> or HNO<sub>3</sub> at the laboratory to prevent the plate-out of potentially present radionuclides on the container wall over time. Each sample is analyzed for gross-beta and gamma-emitting radionuclides. The monthly samples are composited quarterly by location and sent to the E-LAB for a tritium analysis. The monthly samples are also analyzed monthly beyond the minimum requirements of the ODCM.

### 2.5.2 Ground Water Sampling (Eliminated during 2006, Rev. 20 to the ODCM)

Grab samples are collected monthly from two on-site locations (potable water well at WG-11 and Sherman Spring, WG-12). The ODCM requires samples to be collected semi-annually. Each sample is required by the ODCM to be analyzed for gamma-emitting radionuclides and tritium. Samples are also analyzed for gross beta activity, which is beyond ODCM requirements. Gross beta analyses are performed to gather additional data that may help to provide early detection of site-related activity.

### 2.5.3 Sediment Sampling (Eliminated during 2006, Rev. 20 to the ODCM)

Shoreline sediment cores are collected annually from two locations, downstream and upstream of the site. At these locations, six two-inch inner diameter plastic coring tubes are driven into the sediment at least six inches deep. The cores are carefully extracted and kept in an upright position and sent to the E-LAB. At the E-LAB, the samples are analyzed for gamma-emitting radionuclides.

### 2.5.4 Fish Sampling (Eliminated during 2006, Rev. 20 to the ODCM)

Fish samples are collected annually at two locations (upstream of the site and in Sherman Pond). The species typically collected are yellow perch, smelt, pickerel, trout, bullheads or suckers. However, the makeup of any individual catch could be dominated by a single species available at the time. No attempt is made to differentiate sample analysis by fish species, such as those who primarily feed on the bottom and are closer to any radioactivity deposited in bottom sediments, from those species that feed higher in the water column. The limiting factor in fish sampling program is the availability of sufficient sample volume needed for analysis, making the differentiation of species typically impractical. The fish samples are frozen and delivered to the environmental laboratory where the edible portions are analyzed for gamma-emitting radionuclides.

### 2.5.5 TLD Monitoring

Direct gamma radiation exposure is continuously monitored with the use of thermoluminescent dosimeters (TLDs). Specifically, Panasonic UD-801AS1 and UD-814AS1 calcium sulfate dosimeters are used, with a total of five elements in place at each monitoring location. Each pair of dosimeters is sealed in a plastic bag, which is in turn housed in a plastic-screened container. This container is attached to an object such as a tree, fence or pole. TLDs are posted at 7 locations (6 indicator and 1 control location) which are required by Revision 20 to the ODCM. This number was reduced from the required numbers in the ODCM, Revision 19. All the TLDs are read out semi-annually.



**TABLE 2-1**

**Radiological Environmental Monitoring Program  
(Sample Types, Collection Frequency, Analysis Requirements)  
(As required by ODCM Section 2)**

| Exposure Pathway<br>And/or<br>Sample Media | Collection                              |   |                         | Analysis                                      |   |
|--|---|---|-------------------------|---|---|
|  | Number of<br>Sample Locations           | Routine<br>Sampling<br>Mode                       | Collection<br>Frequency | Analysis<br>Type                              | Analysis<br>Frequency                             |
| 1. Direct Radiation ( TLDs)                | 6*<br><br>(changed to 6<br>during 2006) | Continuous  | Semi-annually           | Gamma Dose                                    | Each TLD  |
| 2. Waterborne (a)                          |   |   |                         |   |   |
| a. Surface Water                           | 1                                       | Composite at two<br>hour intervals-<br>Downstream | Semi-annually           | Gross Beta<br>Gamma Isotopic<br>Tritium (H-3) | Each Sample<br>Each Sample<br>Quarterly Composite |
|  | 1                                       | Grab -Upstream                                    | Semi-annually           |   |   |
| b. Ground Water                            | 2                                       | Grab  | Semi-annually           | Gamma Isotopic<br>Tritium (H-3)               | Each Sample<br>Each Sample                        |
| c. Shoreline Sediment                      | 2                                       | Grab  | Annually                | Gamma Isotopic                                | Each Sample                                       |
| 3. Ingestion (a)                           |   |   |                         |   |   |
| a. Fish                                    | 2                                       | Grab  | Annually                | Gamma Isotopic on edible<br>portions          | Each sample                                       |

\*Does not include other locations and those TLDs.

(a) Requirements for these locations were discontinued as part of Revision 20 to the ODCM during 2006.

TABLE 2-2

**Radiological Environmental Monitoring Locations (non-TLD) in 2006  
Yankee Rowe Station**

| <u>Exposure</u>   | <u>Station</u> |                            |                            | <u>Distance</u>          | <u>Direction</u>  |
|-------------------|----------------|----------------------------|----------------------------|--------------------------|-------------------|
| <u>Pathway</u>    | <u>Code</u>    | <u>Station Description</u> | <u>Type</u> <sup>(a)</sup> | <u>From Site</u><br>(km) |                   |
| 1. Waterborne (b) |                |                            |                            |                          |                   |
| a. Surface        |                |                            |                            |                          |                   |
|                   | WR-11          | Bear Swamp Lower           | I                          | 6.3                      | Down-river        |
|                   | WR-21          | Harriman Reservoir         | C                          | 10.1                     | Up-river          |
| b. Ground         |                |                            |                            |                          |                   |
|                   | WG-11          | Site Potable               | I                          | On-site                  | --                |
|                   | WG-12          | Sherman Spring             | I                          | 0.2                      | NW                |
| c. Sediment       |                |                            |                            |                          |                   |
|                   | SE-11          | No. 4 Station              | I                          | 36.2                     | Down-river        |
|                   | SE-21          | Harriman Reservoir         | C                          | 10.1                     | Up-river          |
| 2. Ingestion (b)  |                |                            |                            |                          |                   |
| a. Fish           |                |                            |                            |                          |                   |
|                   | FH-11          | Sherman Pond               | I                          | 1.5                      | Near<br>Discharge |
|                   | FH-21          | Harriman Reservoir         | C                          | 10.1                     | Up-river          |

<sup>(a)</sup> I=Indicator Station or C=Control Station

<sup>(b)</sup> Discontinued in 2006 as part of Revision 20 to the ODCM.

TABLE 2-3

**Radiological Environmental Monitoring Locations (TLD) in 2006  
Yankee Rowe Station**

| Station Code         | Station Description                  | Type <sup>(a)</sup> | Distance From Site (km) <sup>(c)</sup> | Direction From Site |
|----------------------|--------------------------------------|---------------------|--|---------------------|
| GM-1 <sup>(d)</sup>  | YAEC Visitors' Center (Furlon House) | I                   | 0.8                                    | SW                  |
| GM-2 <sup>(b)</sup>  | Observation Stand                    | I                   | 0.5                                    | NW                  |
| GM-6 <sup>(b)</sup>  | Readsboro Road Barrier               | I                   | 1.3                                    | N                   |
| GM-13 <sup>(d)</sup> | Restricted Area Fence                | F                   | 0.08                                   | WSW                 |
| GM-14 <sup>(d)</sup> | Restricted Area Fence                | F                   | 0.11                                   | WNW                 |
| GM-15 <sup>(b)</sup> | Restricted Area Fence                | F                   | 0.08                                   | NNW                 |
| GM-16 <sup>(b)</sup> | Restricted Area Fence                | F                   | 0.13                                   | NNE                 |
| GM-17 <sup>(b)</sup> | Restricted Area Fence                | F                   | 0.14                                   | ENE                 |
| GM-18 <sup>(d)</sup> | Restricted Area Fence                | F                   | 0.14                                   | ESE                 |
| GM-19 <sup>(d)</sup> | Restricted Area Fence                | F                   | 0.16                                   | SE                  |
| GM-20 <sup>(d)</sup> | Restricted Area Fence                | F                   | 0.16                                   | SSE                 |
| GM-21 <sup>(b)</sup> | Restricted Area Fence                | F                   | 0.11                                   | SSW                 |
| GM-22 <sup>(d)</sup> | Heartwellville, VT                   | C                   | 12.6                                   | NNW                 |
| GM-27 <sup>(b)</sup> | Number 9 Road                        | C                   | 7.6                                    | ENE                 |
| GM-29 <sup>(d)</sup> | Route 8A                             | O                   | 8.2                                    | ESE                 |

- (a) I = Indicator TLD; C = Control TLD; O = Outer Ring TLD; F = Industrial Area TLD, IF=ISFSI TLD.
- (b) These TLDs are part of the REMP.
- (c) GM station distances and direction are from the former plant stack.
- (d) Requirements for these locations were discontinued as part of Revision 20 to the ODCM during 2006.
- (e) IF station distances and direction from ISFSI pad.

**TABLE 2-3**  
(Continued)

**Radiological Environmental Monitoring Locations (TLD) in 2006**  
**Yankee Rowe Station**

| Station Code         | Station Description                  | Type <sup>(a)</sup> | Distance From Site/ISFSI (km) | Direction From Site/ISFSI |
|----------------------|--------------------------------------|---------------------|-------------------------------|---------------------------|
| GM-31 <sup>(d)</sup> | Legate Hill Road                     | O                   | 7.6 <sup>(c)</sup>            | SSE                       |
| GM-40 <sup>(d)</sup> | Readsboro Road                       | I                   | 0.5 <sup>(c)</sup>            | W                         |
| IF-1 <sup>(d)</sup>  | ISFSI Security Fence                 | IF                  | 0.02 <sup>(e)</sup>           | WNW                       |
| IF-2 <sup>(d)</sup>  | Observation Stand                    | IF                  | 0.56 <sup>(e)</sup>           | NW                        |
| IF-3 <sup>(d)</sup>  | ISFSI Security Fence                 | IF                  | 0.02 <sup>(e)</sup>           | N                         |
| IF-4 <sup>(d)</sup>  | ISFSI Security Fence                 | IF                  | 0.03 <sup>(e)</sup>           | NE                        |
| IF-5 <sup>(d)</sup>  | ISFSI Security Fence                 | IF                  | 0.05 <sup>(e)</sup>           | E                         |
| IF-6 <sup>(d)</sup>  | ISFSI Security Fence                 | IF                  | 0.02 <sup>(e)</sup>           | SE                        |
| IF-7 <sup>(d)</sup>  | ISFSI Security Fence                 | IF                  | 0.02 <sup>(e)</sup>           | S                         |
| IF-8 <sup>(d)</sup>  | ISFSI Security Fence                 | IF                  | 0.04 <sup>(e)</sup>           | SW                        |
| IF-9 <sup>(d)</sup>  | Restricted Area Fence                | IF                  | 0.05 <sup>(e)</sup>           | SE                        |
| IF-10 <sup>(d)</sup> | Restricted Area Fence                | IF                  | 0.05 <sup>(e)</sup>           | SSE                       |
| IF-11 <sup>(d)</sup> | Restricted Area Fence                | IF                  | 0.14 <sup>(e)</sup>           | SW                        |
| IF-12 <sup>(d)</sup> | Restricted Area Fence                | IF                  | 0.21 <sup>(e)</sup>           | N                         |
| IF-18 <sup>(d)</sup> | YNPS CW Intake                       | IF                  | 0.24 <sup>(e)</sup>           | NNW                       |
| IF-19 <sup>(d)</sup> | ISFSI Security Fence Admin. Building | IF                  | 0.17 <sup>(e)</sup>           | W                         |
| IF-20 <sup>(d)</sup> | ISFSI Security Fence Gatehouse       | IF                  | 0.24 <sup>(e)</sup>           | WNW                       |
| IF-40 <sup>(d)</sup> | Readsboro Road                       | IF                  | 0.70 <sup>(e)</sup>           | WNW                       |

- (a) I = Indicator TLD; C = Control TLD; O = Outer Ring TLD; F = Industrial Area TLD, IF=ISFSI TLD.
- (b) These TLDs are part of the REMP.
- (c) GM station distances and direction are from the former plant stack.
- (d) Requirements for these locations were discontinued as part of Revision 20 to the ODCM during 2006.
- (e) IF station distances and direction from ISFSI pad.

TABLE 2-4

**Environmental Lower Limit of Detection (LLD) Sensitivity  
Requirements from ODCM Table 4.3<sup>(a)</sup>**

| <b>Analysis</b> | <b>Water<br/>(pCi/l)</b> | <b>Fish<br/>(pCi/kg)<br/>(wet)</b> | <b>Sediment<br/>(pCi/kg -dry)</b> |
|-----------------|--------------------------|------------------------------------|-----------------------------------|
| Gross-Beta      | 4                        |                                    |                                   |
| H-3             | 2000                     |                                    |                                   |
| Co-58, 60       | 15                       | 130                                |                                   |
| Cs-134          | 15                       | 130                                | 150                               |
| Cs-137          | 18                       | 150                                | 180                               |

- (a) Revision 20 of the ODCM eliminated further consideration of these release pathways due to the elimination of the liquid effluent potential.

TABLE 2-5

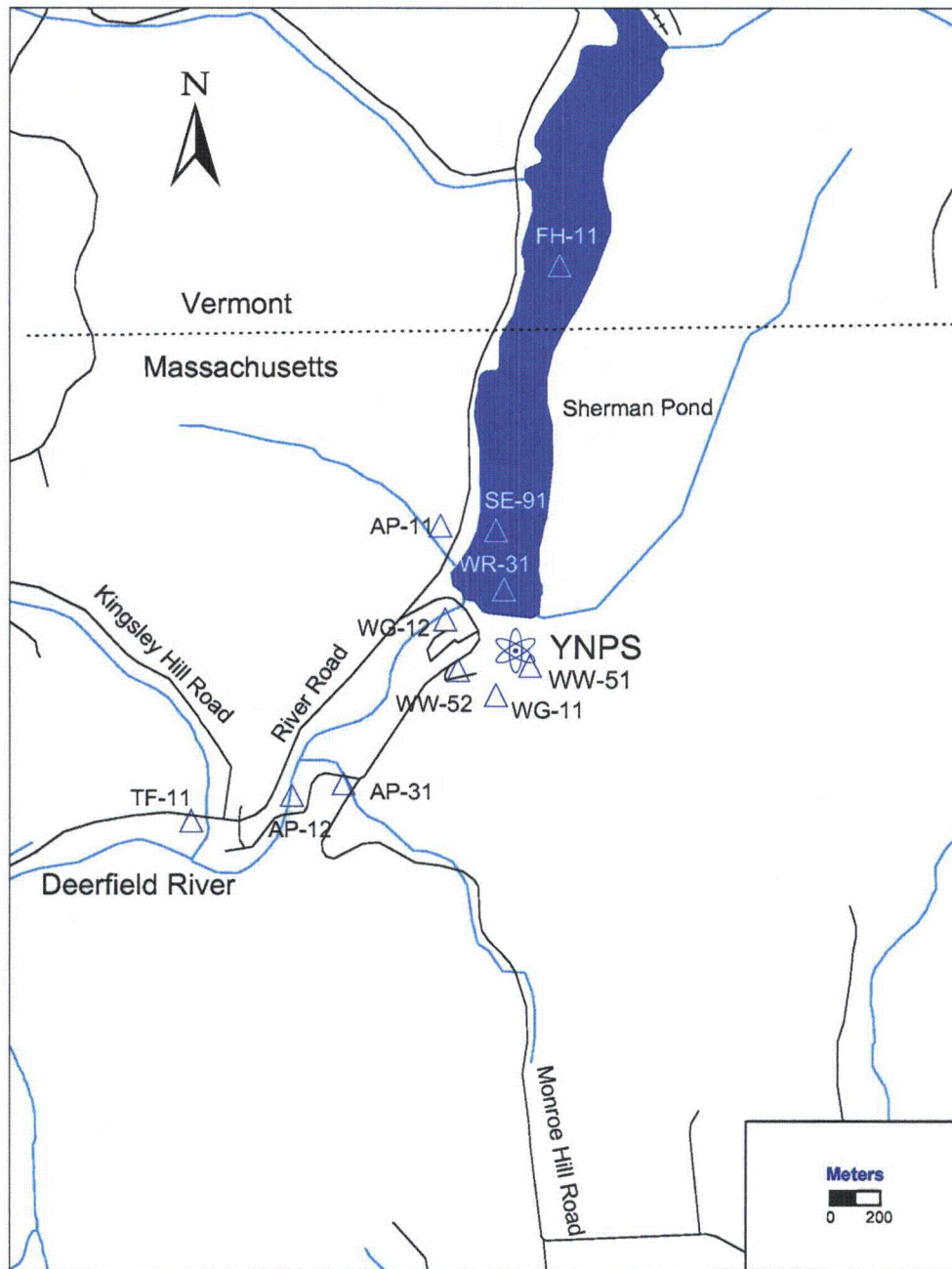
**Reporting Levels for Radioactivity Concentrations  
In Environmental Samples from ODCM Table 4.2<sup>(b)</sup>**

| Analysis | Water<br>(pCi/l) <sup>(a)</sup> | Fish<br>(pCi/kg) |
|----------|---------------------------------|------------------|
| H-3      | 30000                           |                  |
| Mn-54    | 1000                            | 30000            |
| Co-58    | 1000                            | 30000            |
| Co-60    | 300                             | 10000            |
| Zn-65    | 300                             | 20000            |
| Zr-Nb-95 | 400                             |                  |
| Cs-134   | 30                              | 1000             |
| Cs-137   | 50                              | 2000             |

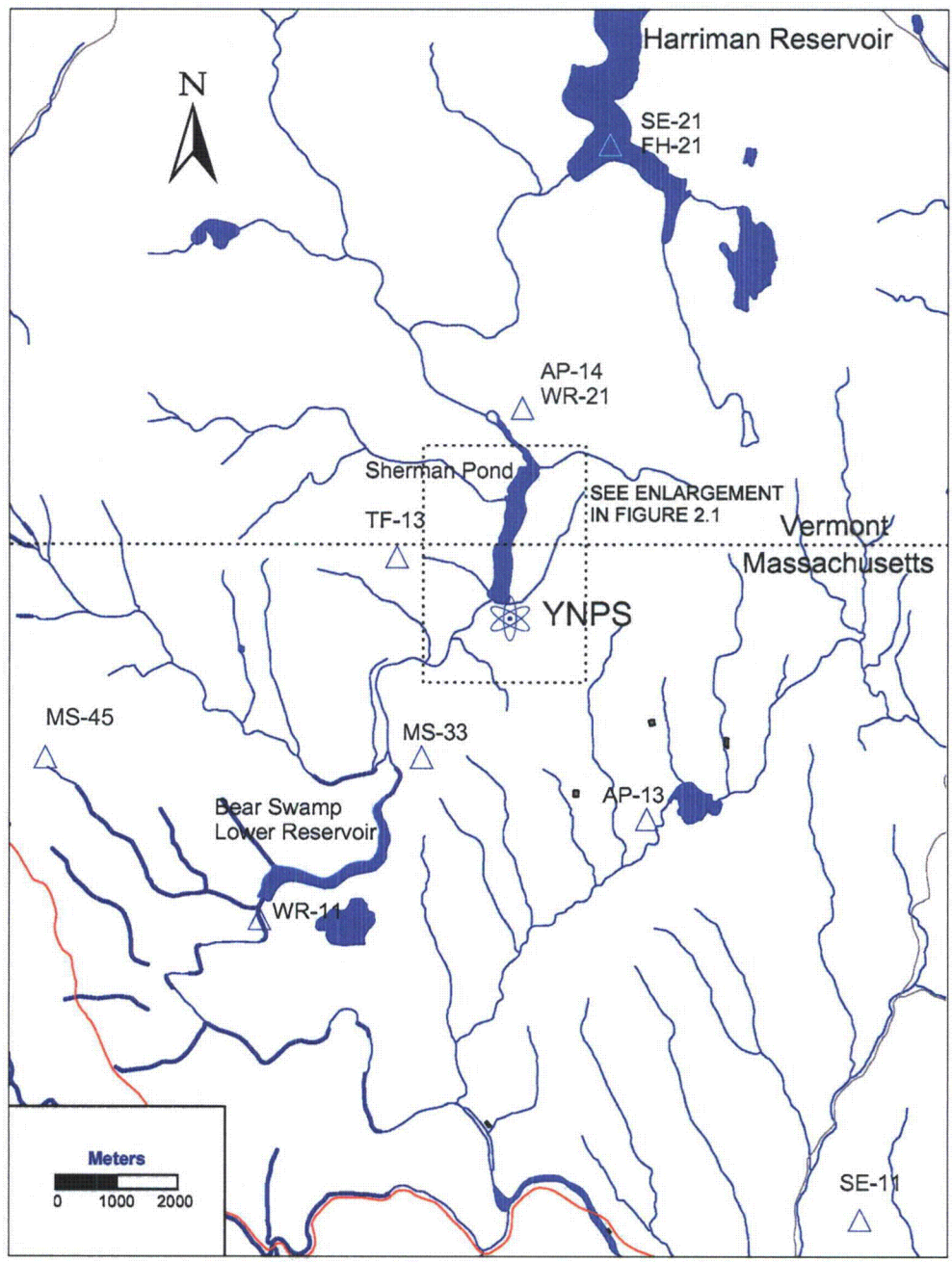
(a) Reporting Level for non-drinking water pathways.

(b) Revision 20 of the ODCM eliminated further consideration of these release pathways due to the elimination of the liquid effluent potential.

**Figure 2-1 Radiological Environmental Sampling Locations  
Within 1 Mile of Yankee Rowe Station  
(See Table 2-2 for Final 2006 REMP Sample Location(s))**



**Figure 2-2 Radiological Environmental Sampling Locations  
Within 12 Miles of Yankee Rowe Station  
(See Table 2-2 for Final 2006 REMP Sample Locations)**





**Figure 2-3 Radiological Environmental Sampling Locations  
Outside 12 Miles of Yankee Rowe Station  
(See Table 2-2 for Final 2006 REMP Sample Locations)**

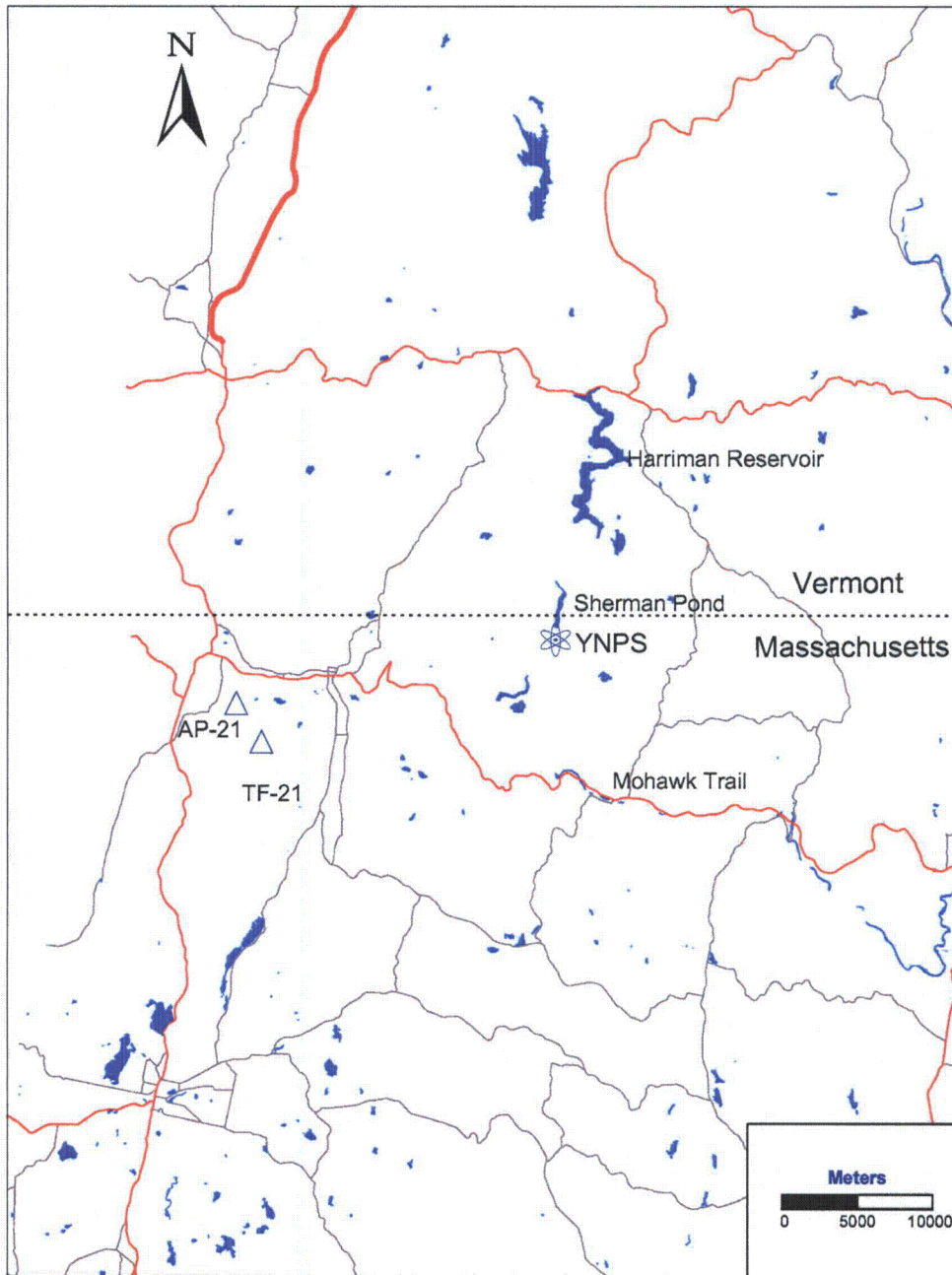
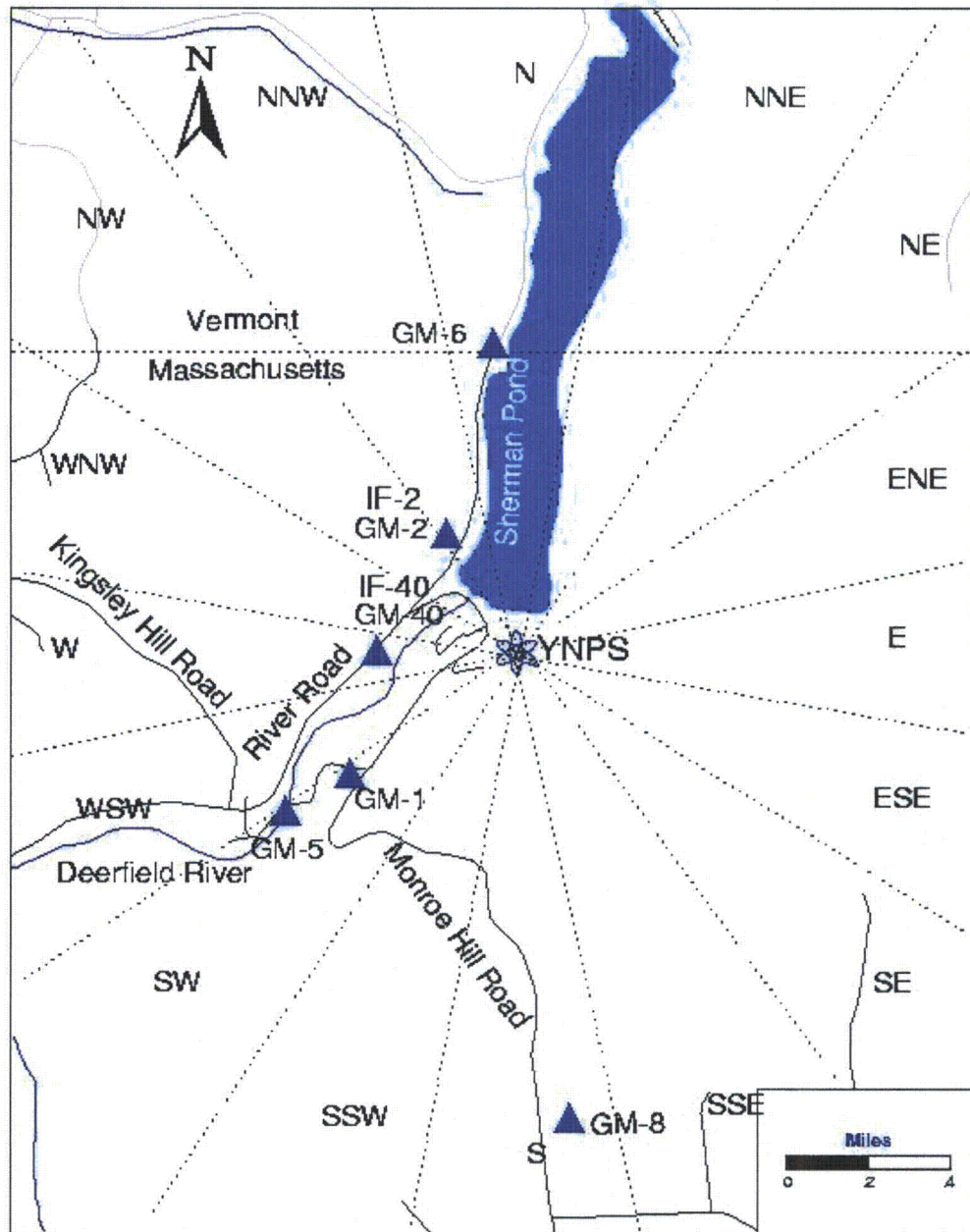
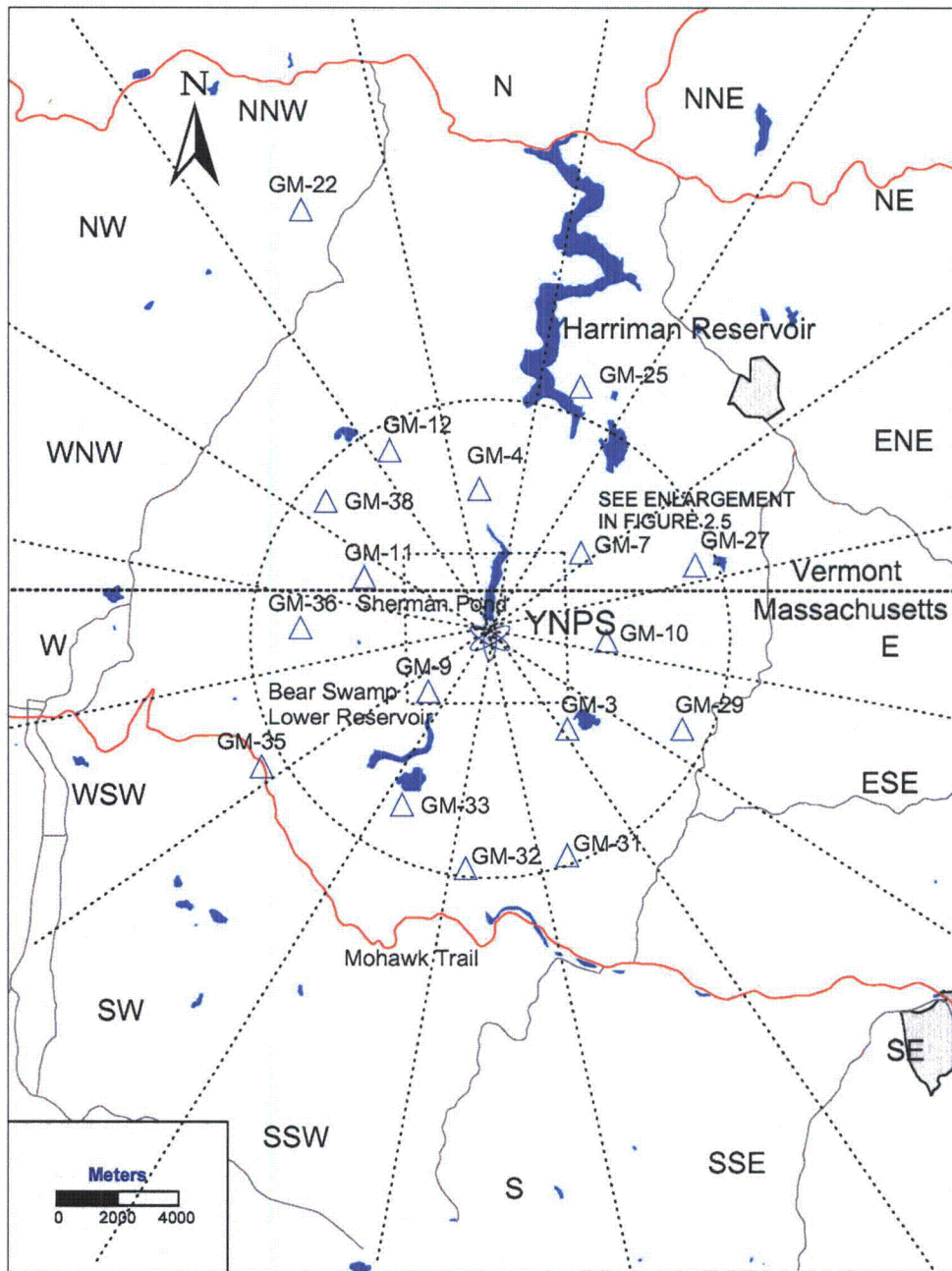


Figure 2-4 Environmental TLD Monitoring Locations  
Within 1 Mile of Yankee Rowe Station  
(See Table 2-3 for Final 2006 REMP Sample Locations)



**Figure 2-5 Environmental TLD Monitoring Locations  
Within 12 Miles of Yankee Rowe Station  
(See Table 2-3 for Final 2006 REMP Sample Locations)**



**Figure 2-6 Environmental TLD Monitoring Locations  
Outside of 12 Miles from Yankee Rowe Station  
(See Table 2-3 for Final 2006 REMP Sample Locations)**

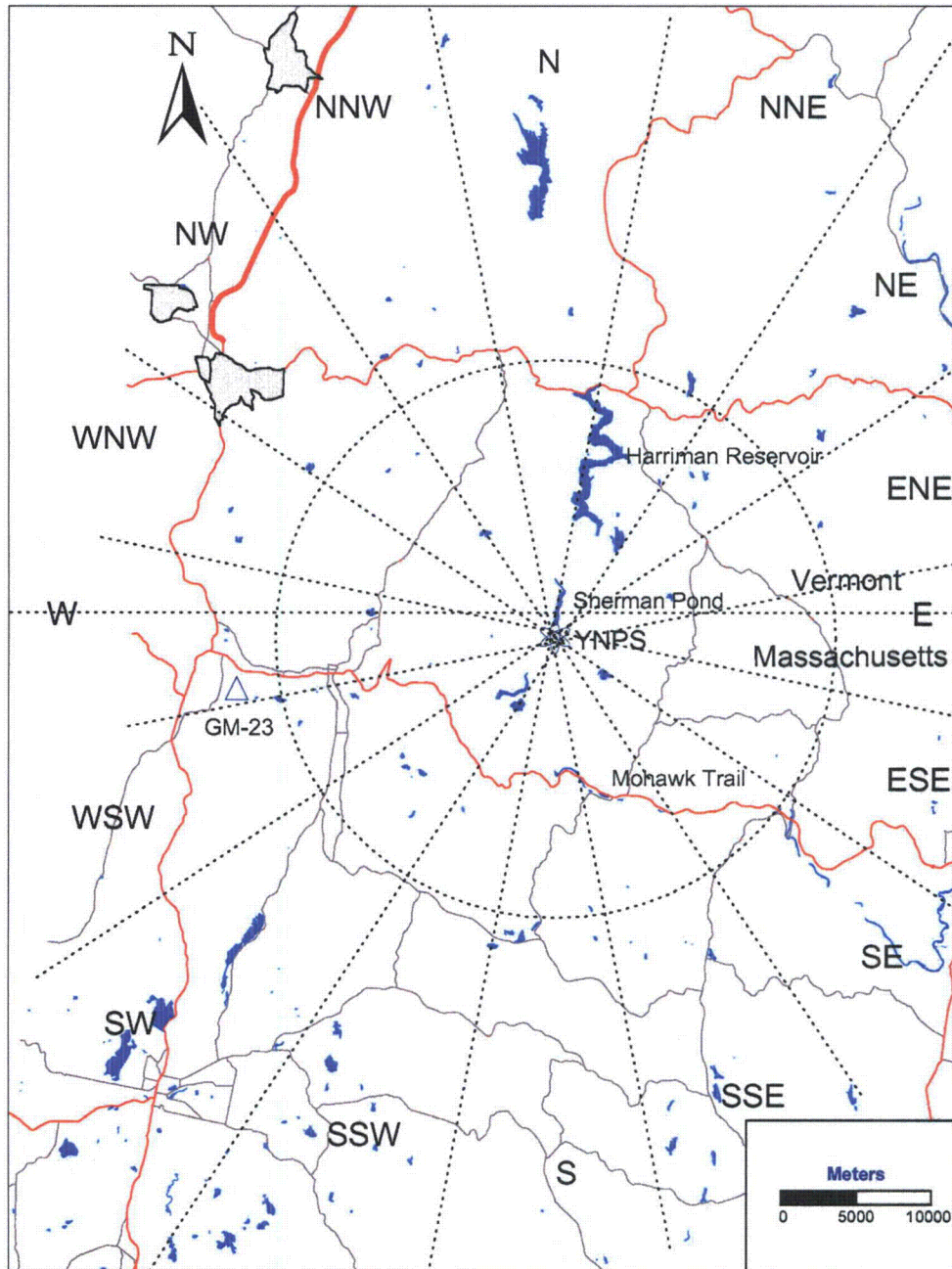
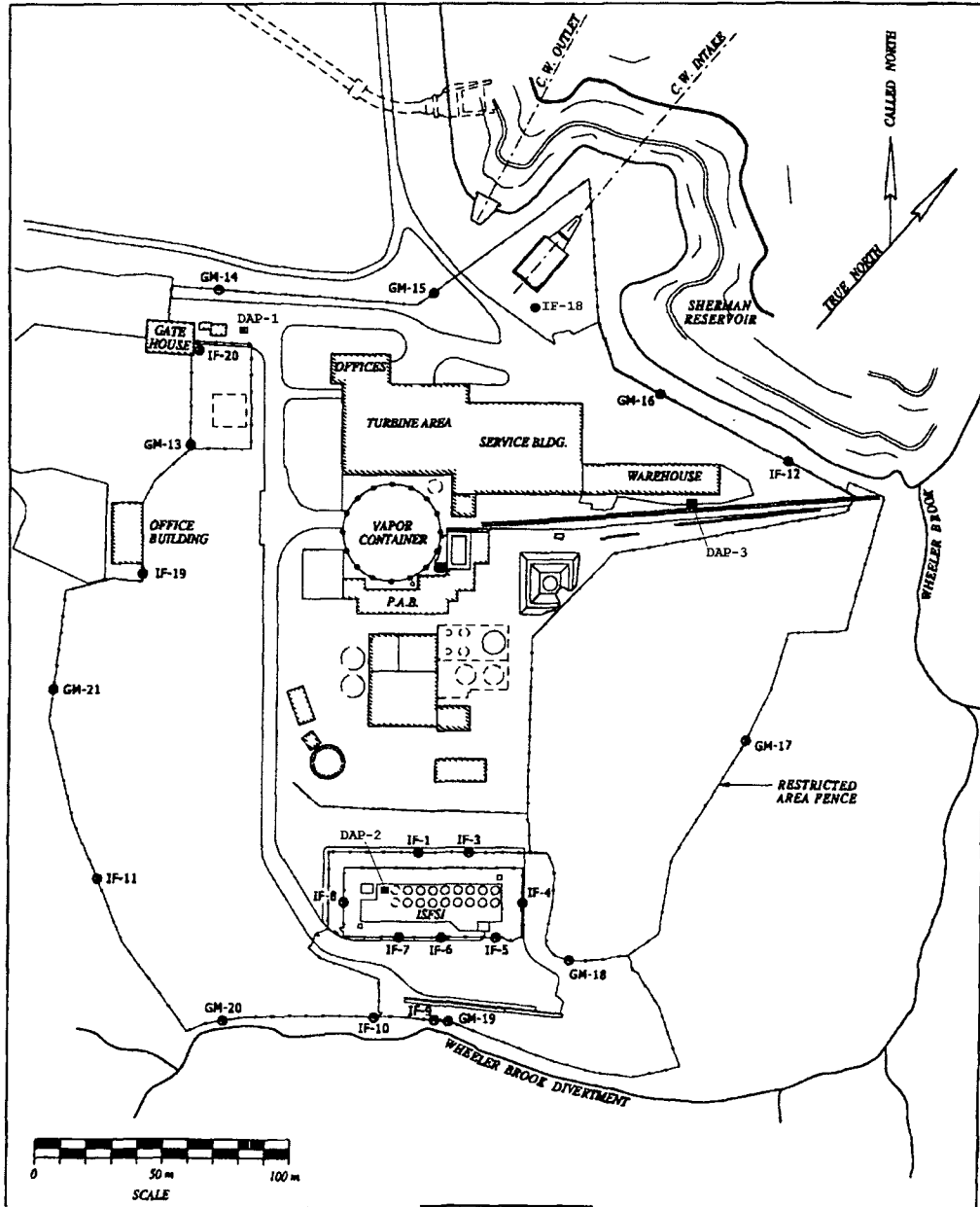


Figure 2-7 Environmental TLD Monitoring Locations  
For the ISFSI Facility at the Yankee Rowe Station (See Table 2-3 for Final 2006 REMP Sample Locations)



### 3.0 RADIOLOGICAL DATA SUMMARY TABLES

This section summarizes the analytical results of the environmental samples that were collected during 2006. These results, shown in Table 3-1, are presented in a format similar to that prescribed in the NRC's Radiological Assessment Branch Technical Position on Environmental Monitoring (Reference 1). The results are ordered by sample media type and then by radionuclide for the pathways described in Section 2.3. A comparison of indicator stations versus control stations is presented. Table 3-2 provides the same information for TLD direct radiation measurements.

The left-most column contains the radionuclide of interest, the total number of analyses for that radionuclide in 2006, and the number of measurements which exceeded the Reporting Levels found in Table 4.2 Revision 19 of the YR ODCM. The latter are classified as "Non-routine" results. The second column lists the required Lower Limit of Detection (LLD) for those radionuclides, as specified in the ODCM. The absence of a value in this column indicates that no LLD is specified in the ODCM for that radionuclide in that media. The target LLD for any analysis is typically 30-40 percent of the most restrictive required LLD. Occasionally the required LLD is not met. This is usually due to malfunctions in sampling equipment, which result in low sample volume. Such cases are addressed in Section 4.2 of this report.

For each radionuclide and media type, the remaining three columns summarize the data for the following categories of monitoring locations: (1) the indicator stations, which are within the range of influence of the site and which could conceivably be affected by site activities; (2) the station which had the highest mean concentration during 2006 for that radionuclide; and (3) the control stations, which are beyond the influence of the site. Direct radiation monitoring stations (using TLDs) are grouped into Indicator and Control stations.

In each of these columns, for each radionuclide, the following are given:

- the mean value of all concentrations including negative values and values that are not considered "detectable",
- the lowest and highest concentration, and
- the number of detectable measurements divided by the total number of measurements.

A sample is considered to yield a "detectable measurement" when the concentration exceeds three times its associated standard deviation. The standard deviation on each measurement represents only the random uncertainty associated with the radioactive decay process (counting statistics), and not the propagation of all possible uncertainties in the analytical procedure.

The radionuclides reported in this section represent those that: 1) had a Reporting Level listed in Table 4.2 of the ODCM (Revision 19) or, a LLD requirement in Table 4.3 of the ODCM, (Revision 19 or 20) had a positive measurement of radioactivity, whether it was naturally-occurring or man-made; or 3) were of specific interest for any other reason. The radionuclides that are routinely analyzed and reported by the E-LAB in a gamma spectroscopy analysis includes: Ac-Th-228, Ag-108m, Ag-110m, Ba-140, Be-7, Ce-141, Ce-144, Co-57, Co-58, Co-60, Cr-51, Cs-134, Cs-137, Fe-59, I-131, K-40, La-140, Mn-54, Nb-95, Ru-103, Ru-106, Sb-124, Sb-125, Se-75, Zn-65 and Zr-95. In no case during 2006 did a radionuclide not shown in Table 3-1 appear as a "detectable measurement".

Data from direct radiation measurements made by TLDs are provided in Table 3-2 in a format essentially the same as above. The complete listing of TLD data is provided in Table 3-3. Table 3-4 contains a list of TLDs placed to monitor the Yankee ISFSI site. Locations of these, including two located offsite, are shown in Figures 2-4 and 2-7.

**Table 3.1  
Radiological Environmental Program Summary  
Yankee Nuclear Power Station, Rowe, MA  
(January - December 2006)**

**MEDIUM: Air Particulates (AP) UNITS: pCi/cubic meter**

| Radionuclides*<br>(No. Analyses)<br>Non-Routine** | Required<br>LLD | Indicator Stations                    |         | Station With Highest Mean             |                                  | Control Stations |
|---|-----------------|---------------------------------------|---------|---------------------------------------|----------------------------------|------------------|
|   |                 | Mean<br>Range<br>No. Detected***      | Station | Mean<br>Range<br>No. Detected***      | Mean<br>Range<br>No. Detected*** |                  |
| <b>GR-B</b><br>(6)<br>(0)                         | 0.01            | 1.8E -2<br>( 1.6 - 2.2)E -2<br>(6/ 6) | 11      | 1.8E -2<br>( 1.6 - 2.2)E -2<br>(6/ 6) |                                  | NO DATA          |
| <b>Be-7</b><br>(1)<br>(0)                         |                 | 8.4E -2<br>(1/ 1)                     | 11      | 8.4E -2<br>(1/ 1)                     |                                  | NO DATA          |
| <b>K-40</b><br>(1)<br>(0)                         |                 | -8.0E -3<br>(0/ 1)                    | 11      | -8.0E -3<br>(0/ 1)                    |                                  | NO DATA          |
| <b>Co-58</b><br>(1)<br>(0)                        |                 | -4.0E -5<br>(0/ 1)                    | 11      | -4.0E -5<br>(0/ 1)                    |                                  | NO DATA          |
| <b>Co-60</b><br>(1)<br>(0)                        |                 | 3.1E -4<br>(0/ 1)                     | 11      | 3.1E -4<br>(0/ 1)                     |                                  | NO DATA          |
| <b>Cs-134</b><br>(1)<br>(0)                       | 0.05            | -2.5E -4<br>(0/ 1)                    | 11      | -2.5E -4<br>(0/ 1)                    |                                  | NO DATA          |
| <b>Cs-137</b><br>(1)<br>(0)                       | 0.06            | -1.3E -4<br>(0/ 1)                    | 11      | -1.3E -4<br>(0/ 1)                    |                                  | NO DATA          |
| <b>Th-232</b><br>(1)<br>(0)                       |                 | 7.2E -4<br>(0/ 1)                     | 11      | 7.2E -4<br>(0/ 1)                     |                                  | NO DATA          |

\* The only radionuclides reported in this table are those with LLD requirements, those for which positive radioactivity was detected, or which were considered important due to past effluent history. See Section 3 of this report for a discussion of other radionuclides that were analyzed.

\*\* Non-Routine refers to those radionuclides that exceeded the Reporting Levels in ODCM Table 4.2 (Rev. 19).

\*\*\* The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.

**Table 3-1  
Radiological Environmental Program Summary  
Yankee Nuclear Power Station, Rowe, MA  
(January - December 2006)**

**MEDIUM: Fish (FH) UNITS: pCi/kg**

| Radionuclides*<br>(No. Analyses)<br>Non-Routine** | Required<br>LLD | Indicator Stations               |  | Station With Highest Mean |                                  | Control Stations                 |
|---|-----------------|----------------------------------|--|---------------------------|----------------------------------|----------------------------------|
|   |                 | Mean<br>Range<br>No. Detected*** |  | Station                   | Mean<br>Range<br>No. Detected*** | Mean<br>Range<br>No. Detected*** |
| <b>K-40</b> (2)<br>(0)                            |                 | 3.3E 3<br>(1/ 1)                 |  | <b>11</b>                 | 3.3E 3<br>(1/ 1)                 | 1.8E 3<br>(1/ 1)                 |
| <b>Mn-54</b> (2)<br>(0)                           | 130             | 0.0E 0<br>(0/ 1)                 |  | <b>11</b>                 | 0.0E 0<br>(0/ 1)                 | -3.2E 0<br>(0/ 1)                |
| <b>Co-58</b> (2)<br>(0)                           | 130             | 3.0E 0<br>(0/ 1)                 |  | <b>21</b>                 | 7.0E 0<br>(0/ 1)                 | 7.0E 0<br>(0/ 1)                 |
| <b>Fe-59</b> (2)<br>(0)                           |                 | 1.3E 1<br>(0/ 1)                 |  | <b>11</b>                 | 1.3E 1<br>(0/ 1)                 | -7.0E 0<br>(0/ 1)                |
| <b>Co-60</b> (2)<br>(0)                           | 130             | -1.0E 1<br>(0/ 1)                |  | <b>21</b>                 | 6.0E 0<br>(0/ 1)                 | 6.0E 0<br>(0/ 1)                 |
| <b>Zn-65</b> (2)<br>(0)                           | 260             | -2.4E 1<br>(0/ 1)                |  | <b>21</b>                 | -1.6E 1<br>(0/ 1)                | -1.6E 1<br>(0/ 1)                |
| <b>Cs-134</b> (2)<br>(0)                          | 130             | 1.3E 0<br>(0/ 1)                 |  | <b>11</b>                 | 1.3E 0<br>(0/ 1)                 | -3.1E 1<br>(0/ 1)                |
| <b>Cs-137</b> (2)<br>(0)                          | 150             | 5.5E 1<br>(0/ 1)                 |  | <b>11</b>                 | 5.5E 1<br>(0/ 1)                 | 4.5E 1<br>(0/ 1)                 |

\* The only radionuclides reported in this table are those with LLD requirements, those for which positive radioactivity was detected, or which were considered important due to past effluent history. See Section 3 of this report for a discussion of other radionuclides that were analyzed.

\*\* Non-Routine refers to those radionuclides that exceeded the Reporting Levels in ODCM Table 4.2 (Rev. 19).

\*\*\* The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.



**Table 3-1**  
**Radiological Environmental Program Summary**  
**Yankee Nuclear Power Station, Rowe, MA**  
**(January - December 2006)**

**MEDIUM: Sediment (SE) UNITS: pCi/kg dry**

| Radionuclides*<br>(No. Analyses)<br>Non-Routine** | Required<br>LLD | Indicator Stations                    | Station With Highest Mean |  | Control Stations                       |
|---|-----------------|---------------------------------------|---------------------------|--|--|
|   |                 | Mean<br>Range<br>No. Detected***      | Station                   | Mean<br>Range<br>No. Detected***       | Mean<br>Range<br>No. Detected***       |
| <b>Be-7</b> (6)<br>(0)                            |                 | -1.5E 2<br>( -5.9 - 2.1)E 2<br>(0/ 3) | <b>21</b>                 | -1.1E 2<br>( -2.8 - -0.1)E 2<br>(0/ 3) | -1.1E 2<br>( -2.8 - -0.1)E 2<br>(0/ 3) |
| <b>K-40</b> (6)<br>(0)                            |                 | 2.0E 4<br>( 1.7 - 2.1)E 4<br>(3/ 3)   | <b>11</b>                 | 2.0E 4<br>( 1.7 - 2.1)E 4<br>(3/ 3)    | 1.6E 4<br>( 1.4 - 1.8)E 4<br>(3/ 3)    |
| <b>Co-58</b> (6)<br>(0)                           |                 | -3.7E 0<br>( -3.7 - 4.2)E 1<br>(0/ 3) | <b>21</b>                 | 9.3E 0<br>( -9.0 - 23.0)E 0<br>(0/ 3)  | 9.3E 0<br>( -9.0 - 23.0)E 0<br>(0/ 3)  |
| <b>Co-60</b> (6)<br>(0)                           |                 | 2.6E 1<br>( 1.0 - 42.0)E 0<br>(0/ 3)  | <b>11</b>                 | 2.6E 1<br>( 1.0 - 42.0)E 0<br>(0/ 3)   | -2.7E 0<br>( -3.5 - 1.8)E 1<br>(0/ 3)  |
| <b>Cs-134</b> (6)<br>(0)                          | 150             | 1.1E 1<br>( -7.0 - 30.0)E 0<br>(0/ 3) | <b>11</b>                 | 1.1E 1<br>( -7.0 - 30.0)E 0<br>(0/ 3)  | 5.0E 0<br>( 0.0 - 8.0)E 0<br>(0/ 3)    |
| <b>Cs-137</b> (6)<br>(0)                          | 180             | 1.4E 2<br>( 1.1 - 1.7)E 2<br>(2/ 3)   | <b>21</b>                 | 3.7E 2<br>( 3.4 - 4.0)E 2<br>(3/ 3)    | 3.7E 2<br>( 3.4 - 4.0)E 2<br>(3/ 3)    |
| <b>Th-232</b> (6)<br>(0)                          |                 | 9.7E 2<br>( 8.6 - 11.6)E 2<br>(3/ 3)  | <b>11</b>                 | 9.7E 2<br>( 8.6 - 11.6)E 2<br>(3/ 3)   | 8.3E 2<br>( 7.1 - 9.5)E 2<br>(3/ 3)    |

\* The only radionuclides reported in this table are those with LLD requirements, those for which positive radioactivity was detected, or which were considered important due to past effluent history. See Section 3 of this report for a discussion of other radionuclides that were analyzed.

\*\* Non-Routine refers to those radionuclides that exceeded the Reporting Levels in ODCM Table 4.2 (Rev. 19).

\*\*\* The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.

**Table 3-1**  
**Radiological Environmental Program Summary**  
**Yankee Nuclear Power Station, Rowe, MA**  
**(January - December 2006)**

**MEDIUM: Ground Water (WG) UNITS: pCi/liter**

| Radionuclides*<br>(No. Analyses)<br>Non-Routine** | Required<br>LLD | Indicator Stations                      |  | Station With Highest Mean |  | Control Stations                 |
|---|-----------------|---|--|---------------------------|--|----------------------------------|
|   |                 | Mean<br>Range<br>No. Detected***        |  | Station                   | Mean<br>Range<br>No. Detected***       | Mean<br>Range<br>No. Detected*** |
| <b>GR-B</b> (13)<br>(0)                           | 4               | 4.0E 0<br>( 2.3 - 6.5)E 0<br>(9/ 13)    |  | <b>12</b>                 | 4.3E 0<br>( 3.1 - 6.5)E 0<br>(7/ 8)    | NO DATA                          |
| <b>H-3</b> (12)<br>(0)                            | 2000            | 2.1E 3<br>( -7.0 - 471.0)E 1<br>(8/ 12) |  | <b>12</b>                 | 3.2E 3<br>( 1.3 - 4.7)E 3<br>(8/ 8)    | NO DATA                          |
| <b>Mn-54</b> (13)<br>(0)                          | 15              | -6.5E -1<br>( -2.8 - 1.7)E 0<br>(0/ 13) |  | <b>12</b>                 | -1.0E -1<br>( -2.4 - 1.7)E 0<br>(0/ 8) | NO DATA                          |
| <b>Co-58</b> (13)<br>(0)                          | 15              | -1.1E 0<br>( -5.8 - 3.6)E 0<br>(0/ 13)  |  | <b>12</b>                 | -3.2E -1<br>( -3.7 - 3.6)E 0<br>(0/ 8) | NO DATA                          |
| <b>Fe-59</b> (13)<br>(0)                          |                 | -4.2E -1<br>( -4.3 - 5.7)E 0<br>(0/ 13) |  | <b>12</b>                 | -2.5E -1<br>( -4.3 - 5.7)E 0<br>(0/ 8) | NO DATA                          |
| <b>Co-60</b> (13)<br>(0)                          | 15              | 4.8E -1<br>( -2.8 - 4.1)E 0<br>(0/ 13)  |  | <b>12</b>                 | 8.6E -1<br>( -2.8 - 4.1)E 0<br>(0/ 8)  | NO DATA                          |
| <b>Zn-65</b> (13)<br>(0)                          | 30              | -2.9E 0<br>( -1.0 - 0.5)E 1<br>(0/ 13)  |  | <b>12</b>                 | -2.7E 0<br>( -1.0 - 0.4)E 1<br>(0/ 8)  | NO DATA                          |
| <b>Zr-95</b> (13)<br>(0)                          | 15              | -2.4E -1<br>( -5.6 - 7.8)E 0<br>(0/ 13) |  | <b>12</b>                 | 4.8E -1<br>( -5.6 - 7.8)E 0<br>(0/ 8)  | NO DATA                          |
| <b>I-131</b> (13)<br>(0)                          |                 | 2.4E 0<br>( -7.0 - 22.0)E 0<br>(0/ 13)  |  | <b>11</b>                 | 3.1E 0<br>( -7.0 - 17.0)E 0<br>(0/ 5)  | NO DATA                          |
| <b>Cs-134</b> (13)<br>(0)                         | 15              | 1.2E -1<br>( -3.6 - 3.4)E 0<br>(0/ 13)  |  | <b>11</b>                 | 2.8E -1<br>( -2.3 - 1.4)E 0<br>(0/ 5)  | NO DATA                          |
| <b>Cs-137</b> (13)<br>(0)                         | 18              | -1.2E 0<br>( -3.6 - 1.3)E 0<br>(0/ 13)  |  | <b>12</b>                 | -1.2E 0<br>( -3.6 - 1.3)E 0<br>(0/ 8)  | NO DATA                          |
| <b>Ba-140</b> (13)<br>(0)                         |                 | -1.8E 0<br>( -9.5 - 0.5)E 0<br>(0/ 13)  |  | <b>11</b>                 | -1.0E 0<br>( -1.6 - -0.5)E 0<br>(0/ 5) | NO DATA                          |

\* The only radionuclides reported in this table are those with LLD requirements, those for which positive radioactivity was detected, or which were considered important due to past effluent history. See Section 3 of this report for a discussion of other radionuclides that were analyzed.

\*\* Non-Routine refers to those radionuclides that exceeded the Reporting Levels in ODCM Table 4.2 (Rev. 19).

\*\*\* The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.

**Table 3-1**  
**Radiological Environmental Program Summary**  
**Yankee Nuclear Power Station, Rowe, MA**  
**(January - December 2006)**

**MEDIUM: River Water (WR) UNITS: pCi/liter**

| Radionuclides*<br>(No. Analyses)<br>Non-Routine** | Required<br>LLD | Indicator Stations                      |         | Station With Highest Mean              |  | Control Stations |
|---|-----------------|---|---------|--|--|------------------|
|   |                 | Mean<br>Range<br>No. Detected***        | Station | Mean<br>Range<br>No. Detected***       | Mean<br>Range<br>No. Detected***       |                  |
| <b>GR-B</b> (21)<br>(0)                           | 4               | 1.6E 0<br>( 5.9 - 38.0)E -1<br>(1/ 12)  | 31      | 1.9E 0<br>( 1.5 - 2.3)E 0<br>(0/ 3)    | 1.5E 0<br>( -3.1 - 27.8)E -1<br>(1/ 9) |                  |
| <b>H-3</b> (18)<br>(0)                            | 2000            | -4.2E 2<br>( -1.0 - 0.4)E 3<br>(0/ 11)  | 21      | -2.7E 2<br>( -9.6 - 1.0)E 2<br>(0/ 7)  | -2.7E 2<br>( -9.6 - 1.0)E 2<br>(0/ 7)  |                  |
| <b>Mn-54</b> (21)<br>(0)                          | 15              | -7.7E -1<br>( -3.4 - 3.3)E 0<br>(0/ 12) | 21      | 8.4E -1<br>( -1.7 - 2.5)E 0<br>(0/ 9)  | 8.4E -1<br>( -1.7 - 2.5)E 0<br>(0/ 9)  |                  |
| <b>Co-58</b> (21)<br>(0)                          | 15              | -2.8E -1<br>( -3.1 - 2.8)E 0<br>(0/ 12) | 31      | 4.7E -1<br>( -1.3 - 2.8)E 0<br>(0/ 3)  | -1.8E 0<br>( -4.0 - 0.4)E 0<br>(0/ 9)  |                  |
| <b>Fe-59</b> (21)<br>(0)                          |                 | -1.8E -1<br>( -5.3 - 6.6)E 0<br>(0/ 12) | 31      | 2.3E 0<br>( -3.3 - 6.6)E 0<br>(0/ 3)   | 1.3E 0<br>( -5.3 - 8.2)E 0<br>(0/ 9)   |                  |
| <b>Co-60</b> (21)<br>(0)                          | 15              | -5.1E -1<br>( -4.1 - 2.7)E 0<br>(0/ 12) | 21      | 4.7E -1<br>( -1.4 - 1.6)E 0<br>(0/ 9)  | 4.7E -1<br>( -1.4 - 1.6)E 0<br>(0/ 9)  |                  |
| <b>Zn-65</b> (21)<br>(0)                          | 30              | -1.8E 0<br>( -8.9 - 4.1)E 0<br>(0/ 12)  | 11      | -1.0E 0<br>( -8.9 - 4.1)E 0<br>(0/ 9)  | -4.7E 0<br>( -1.3 - 0.1)E 1<br>(0/ 9)  |                  |
| <b>Zr-95</b> (21)<br>(0)                          | 15              | -3.4E -1<br>( -5.8 - 3.1)E 0<br>(0/ 12) | 21      | 1.7E 0<br>( -2.4 - 6.1)E 0<br>(0/ 9)   | 1.7E 0<br>( -2.4 - 6.1)E 0<br>(0/ 9)   |                  |
| <b>I-131</b> (21)<br>(0)                          |                 | 3.3E -2<br>( -1.3 - 0.6)E 1<br>(0/ 12)  | 11      | 6.0E -1<br>( -1.3 - 0.6)E 1<br>(0/ 9)  | -9.0E -1<br>( -1.5 - 0.5)E 1<br>(0/ 9) |                  |
| <b>Cs-134</b> (21)<br>(0)                         | 15              | -1.0E -1<br>( -3.1 - 3.9)E 0<br>(0/ 12) | 11      | -3.3E -2<br>( -3.1 - 3.9)E 0<br>(0/ 9) | -3.3E -2<br>( -1.8 - 1.9)E 0<br>(0/ 9) |                  |
| <b>Cs-137</b> (21)<br>(0)                         | 18              | 4.5E -1<br>( -2.7 - 3.4)E 0<br>(0/ 12)  | 11      | 4.7E -1<br>( -2.7 - 3.4)E 0<br>(0/ 9)  | -3.4E -1<br>( -2.5 - 2.0)E 0<br>(0/ 9) |                  |
| <b>Ba-140</b> (21)<br>(0)                         |                 | 2.1E 0<br>( -3.3 - 13.6)E 0<br>(0/ 12)  | 11      | 2.7E 0<br>( -3.3 - 13.6)E 0<br>(0/ 9)  | -2.6E 0<br>( -1.5 - 1.5)E 1<br>(0/ 9)  |                  |

\* The only radionuclides reported in this table are those with LLD requirements, those for which positive radioactivity was detected, or which were considered important due to past effluent history. See Section 3 of this report for a discussion of other radionuclides that were analyzed.

\*\* Non-Routine refers to those radionuclides that exceeded the Reporting Levels in ODCM Table 4.2 (Rev. 19).

\*\*\* The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.

**Table 3.1**  
**Radiological Environmental Program Summary**  
**Yankee Nuclear Power Station, Rowe, MA**  
**(January - December 2006)**

**MEDIUM: Storm Drain Water (WW) UNITS: pCi/liter**

| Radionuclides*<br>(No. Analyses)<br>Non-Routine** | Required<br>LLD | Indicator Stations                     | Station With Highest Mean |  | Control Stations                 |
|---|-----------------|--|---------------------------|--|----------------------------------|
|   |                 | Mean<br>Range<br>No. Detected***       | Station                   | Mean<br>Range<br>No. Detected***       | Mean<br>Range<br>No. Detected*** |
| <b>GR-B (7)</b><br>(0)                            | 4               | 4.3E 0<br>( 2.0 - 6.8)E 0<br>(5/ 7)    | <b>52</b>                 | 4.3E 0<br>( 2.0 - 6.8)E 0<br>(5/ 7)    | NO DATA                          |
| <b>H-3 (7)</b><br>(0)                             | 2000            | 1.6E 2<br>( -3.0 - 5.0)E 2<br>(1/ 7)   | <b>52</b>                 | 1.6E 2<br>( -3.0 - 5.0)E 2<br>(1/ 7)   | NO DATA                          |
| <b>Mn-54 (7)</b><br>(0)                           | 15              | -1.3E 0<br>( -3.9 - 2.3)E 0<br>(0/ 7)  | <b>52</b>                 | -1.3E 0<br>( -3.9 - 2.3)E 0<br>(0/ 7)  | NO DATA                          |
| <b>Co-58 (7)</b><br>(0)                           | 15              | -1.2E 0<br>( -3.1 - 1.5)E 0<br>(0/ 7)  | <b>52</b>                 | -1.2E 0<br>( -3.1 - 1.5)E 0<br>(0/ 7)  | NO DATA                          |
| <b>Fe-59 (7)</b><br>(0)                           |                 | -5.0E -1<br>( -4.1 - 2.9)E 0<br>(0/ 7) | <b>52</b>                 | -5.0E -1<br>( -4.1 - 2.9)E 0<br>(0/ 7) | NO DATA                          |
| <b>Co-60 (7)</b><br>(0)                           | 15              | -1.1E -1<br>( -2.9 - 2.1)E 0<br>(0/ 7) | <b>52</b>                 | -1.1E -1<br>( -2.9 - 2.1)E 0<br>(0/ 7) | NO DATA                          |
| <b>Zn-65 (7)</b><br>(0)                           | 30              | -1.9E 0<br>( -9.7 - 11.3)E 0<br>(0/ 7) | <b>52</b>                 | -1.9E 0<br>( -9.7 - 11.3)E 0<br>(0/ 7) | NO DATA                          |
| <b>Zr-95 (7)</b><br>(0)                           | 15              | 4.4E -1<br>( -4.1 - 4.2)E 0<br>(0/ 7)  | <b>52</b>                 | 4.4E -1<br>( -4.1 - 4.2)E 0<br>(0/ 7)  | NO DATA                          |
| <b>I-131 (7)</b><br>(0)                           |                 | 1.4E 0<br>( -2.2 - 5.3)E 0<br>(0/ 7)   | <b>52</b>                 | 1.4E 0<br>( -2.2 - 5.3)E 0<br>(0/ 7)   | NO DATA                          |
| <b>Cs-134 (7)</b><br>(0)                          | 15              | 4.6E -1<br>( -4.8 - 3.6)E 0<br>(0/ 7)  | <b>52</b>                 | 4.6E -1<br>( -4.8 - 3.6)E 0<br>(0/ 7)  | NO DATA                          |
| <b>Cs-137 (7)</b><br>(0)                          | 18              | -2.7E -1<br>( -3.8 - 1.8)E 0<br>(0/ 7) | <b>52</b>                 | -2.7E -1<br>( -3.8 - 1.8)E 0<br>(0/ 7) | NO DATA                          |
| <b>Ba-140 (7)</b><br>(0)                          |                 | 2.7E -1<br>( -2.7 - 3.5)E 0<br>(0/ 7)  | <b>52</b>                 | 2.7E -1<br>( -2.7 - 3.5)E 0<br>(0/ 7)  | NO DATA                          |

\* The only radionuclides reported in this table are those with LLD requirements, those for which positive radioactivity was detected, or which were considered important due to past effluent history. See Section 3 of this report for a discussion of other radionuclides that were analyzed.

\*\* Non-Routine refers to those radionuclides that exceeded the Reporting Levels in ODCM Table 4.2 (Rev. 19).

\*\*\* The fraction of sample analyses yielding detectable measurements (i.e. >3 standard deviations) is shown in parentheses.

**TABLE 3-2  
ENVIRONMENTAL TLD DATA SUMMARY\*  
(JANUARY - DECEMBER 2006)  
μR/hr**

| INDICATOR TLDs             |     |     | OUTER RING TLDs            |     |     | FENCELINE TLDs**           |      |      | CONTROL TLDs               |     |     |
|----------------------------|-----|-----|----------------------------|-----|-----|----------------------------|------|------|----------------------------|-----|-----|
| MEAN                       |     |     | MEAN                       |     |     | MEAN                       |      |      | MEAN                       |     |     |
| RANGE                      |     |     | RANGE                      |     |     | RANGE                      |      |      | RANGE                      |     |     |
| <u>(NO. MEASUREMENTS)*</u> |     |     | <u>(NO. MEASUREMENTS)*</u> |     |     | <u>(NO. MEASUREMENTS)*</u> |      |      | <u>(NO. MEASUREMENTS)*</u> |     |     |
| 7.4                        | ±   | 0.6 | 5.8                        | ±   | 0.3 | 14.4                       | ±    | 0.7  | 6.8                        | ±   | 0.4 |
| 6.9                        | -   | 8.3 | 5.0                        | -   | 6.7 | 7.8                        | -    | 39.6 | 6.3                        | -   | 7.4 |
|                            | (8) |     |                            | (4) |     |                            | (18) |      |                            | (4) |     |

**OFFSITE STATION WITH HIGHEST MEAN**

| STA.<br><u>NO.</u> | MEAN<br>RANGE<br><u>(NO. MEASUREMENTS)*</u> |
|--------------------|---|
| GM-01              | 7.7 ± 0.3<br>7.10 - 8.27<br>2               |

\* Each "measurement" is based on readings from five TLD elements. Measurement units are μR/hr.

\*\* Not part of REMP (TLD locations are inside the site boundary). Increased exposure rates are due to fuel placement on the ISFSI which began in the 2nd half of 2002. Fuel and GTCC placement was completed in June 2003.

**TABLE 3-3**  
**2006 ENVIRONMENTAL TLD MEASUREMENTS\***  
**(Micro-R per hour)**

| Sta. No. | Description           | 1st Half yr |        | 2nd Half yr |        | Annual Average |
|----------|-----------------------|-------------|--------|-------------|--------|----------------|
|          |                       | Expos.      | ±SD*** | Expos.      | ±SD*** | Expos.         |
| GM01     | YR Visitors Center    | 7.10        | 0.28   | 8.27        | 0.40   | 7.7            |
| GM02     | Observation Stand     | 6.93        | 0.70   | 6.88        | 0.47   | 6.9            |
| GM06     | Readsboro Rd. Barrier | 7.20        | 0.52   | 7.66        | 0.35   | 7.4            |
| GM13     | Indust. Area Fence**  | 9.54        | 0.39   | 9.77        | 0.43   | 9.7            |
| GM14     | Indust. Area Fence**  | 7.82        | 0.32   | 8.38        | 0.34   | 8.1            |
| GM15     | Indust. Area Fence**  | 8.00        | 0.40   | 9.08        | 0.36   | 8.5            |
| GM16     | Indust. Area Fence**  | 7.88        | 0.39   | 8.12        | 0.41   | 8.0            |
| GM17     | Indust. Area Fence**  | 8.07        | 0.36   | 7.94        | 0.36   | 8.0            |
| GM18     | Indust. Area Fence**  | 39.59       | 1.58   | 36.54       | 2.59   | 38.1           |
| GM19     | Indust. Area Fence**  | 29.38       | 1.50   | 26.94       | 1.37   | 28.2           |
| GM20     | Indust. Area Fence**  | 12.68       | 0.51   | 12.66       | 0.50   | 12.7           |
| GM21     | Indust. Area Fence**  | 7.93        | 0.66   | 8.01        | 0.43   | 8.0            |
| GM22     | Heartwellville, VT    | 7.24        | 0.31   | 7.37        | 0.40   | 7.3            |
| GM27     | No.9 Road             | 6.30        | 0.51   | 6.26        | 0.33   | 6.3            |
| GM29     | Route 8A              | 5.11        | 0.34   | 5.01        | 0.27   | 5.1            |
| GM31     | Legate Road           | 6.71        | 0.33   | 6.54        | 0.31   | 6.6            |
| GM40     | Readsboro Rd          | 7.95        | 1.78   | 7.36        | 0.34   | 7.7            |

\* Each "measurement" is based on readings from five TLD elements.

\*\* Not part of the REMP. Increased exposure rates inside the site boundary are due to fuel placement on the ISFSI which began in the 2nd half of 2002. Fuel and GTCC placement was completed in June 2003.

\*\*\* SD: Standard Deviation

**TABLE 3-4**  
**2006 ISFSI TLD MEASUREMENTS\***  
**(Micro-R per hour)**

| Sta. No. | Description                            | 1st 6 months |        | 2nd 6 months |        | Annual Average |
|----------|--|--------------|--------|--------------|--------|----------------|
|          |  | Expos.       | ±SD*** | Expos.       | ±SD*** | Expos.         |
| IF-1     | ISFSI Security Fence**                 | 316.75       | 15.39  | 293.44       | 14.48  | 305.1          |
| IF-2     | Observation Stand**                    | 6.67         | 0.39   | 6.84         | 0.33   | 6.8            |
| IF-3     | ISFSI Security Fence**                 | 377.33       | 26.10  | 360.47       | 13.61  | 368.9          |
| IF-4     | ISFSI Security Fence**                 | 123.07       | 5.49   | 114.23       | 7.30   | 118.6          |
| IF-5     | ISFSI Security Fence**                 | 235.68       | 9.91   | 215.48       | 10.71  | 225.6          |
| IF-6     | ISFSI Security Fence**                 | 318.38       | 20.57  | 283.82       | 11.48  | 301.1          |
| IF-7     | ISFSI Security Fence**                 | 157.37       | 5.50   | 142.89       | 7.84   | 150.1          |
| IF-8     | ISFSI Security Fence**                 | 23.75        | 1.44   | 24.96        | 1.08   | 24.4           |
| IF-9     | Restricted Area Fence**                | 43.62        | 1.40   | 41.09        | 1.82   | 42.4           |
| IF-10    | Restricted Area Fence**                | 20.77        | 0.74   | 18.44        | 0.81   | 19.6           |
| IF-11    | Restricted Area Fence**                | 10.47        | 0.47   | 10.08        | 0.48   | 10.3           |
| IF-12    | Restricted Area Fence**                | 8.33         | 0.45   | 8.16         | 0.38   | 8.2            |
| IF-18    | YNPS CW Intake** (a)                   | 7.99         | 0.34   | 8.69         | 0.48   | 8.3            |
| IF-19    | ISFSI Security Fence Admin. Building** | 8.65         | 0.49   | 10.08        | 0.41   | 9.4            |
| IF-20    | ISFSI Security Fence Gatehouse**       | 8.14         | 0.37   | 8.71         | 0.36   | 8.4            |
| IF-40    | Readsboro Road**                       | 7.00         | 0.27   | 7.35         | 0.43   | 7.2            |

\* Each "measurement" is based on readings from five TLD elements.

\*\* Not part of the REMP. Increased exposure rates inside the site boundary are due to fuel placement on the ISFSI which began in the 2nd half of 2002. Fuel and GTCC placement was completed in June 2003.

\*\*\* SD: Standard Deviation.

(a) Note: In 2004, IF-18 was relocated about 60 feet closer to the storage pad. This was necessary when the Screen Well House, upon which the TLD had been mounted, was demolished as part of site decommissioning activities.

## 4.0 ANALYSIS OF ENVIRONMENTAL RESULTS

### 4.1 SAMPLING PROGRAM DEVIATIONS

The ODCM allows for deviations "if specimens are unobtainable due to hazardous conditions, seasonal unavailability or malfunction of automatic sampling equipment." Deviations noted in the REMP during 2006, included the following:

- In February on 2/8 and 2/21 the composite sampler at station WR-11 was found with the hose not in the sampling container. Subsequently, the problem was corrected and a grab sample was taken.

### 4.2 COMPARISON OF ACHIEVED LLDS WITH REQUIREMENTS

Table 4.3 of the ODCM (Revision 19) gives the required Lower Limits of Detection (LLDs) for environmental sample analyses. On occasion, an LLD is not achieved due to situations such as a low sample volume caused by sampling equipment malfunction. In such a case, the ODCM requires a discussion of the situation in the Annual Radiological Environmental Operating Report. At the E-LAB, the target LLD for any analysis is typically 30-40 percent of the most restrictive required LLD. Expressed differently, the typical sensitivities achieved for each analysis are at least 2.5 to 3 times better than that required by the YR ODCM.

For each analysis having an LLD requirement in ODCM Table 4.3, the *a posteriori* or after the fact LLD (or minimum detectable concentration – MDC) calculated for that analysis was compared with the required *a priori* LLD. Of the 2006 analyses performed with a specified LLD requirement, no sample failed to meet the requirements of Table 4.3 of the ODCM for minimum level of detection.

### 4.3 RESULTS COMPARED AGAINST REPORTING LEVELS

The ODCM (Revision 19) required written notification to the NRC within 30 days whenever a Reporting Level in ODCM Table 4.2 is exceeded. Reporting Levels are the environmental concentrations that relate to the ALARA design dose objectives of 10 CFR 50, Appendix I. It should be noted that environmental concentrations are averaged over calendar quarters for the purposes of this comparison, and that Reporting Levels apply only to measured levels of radioactivity due to site effluents (none during 2006). During 2006, no Reporting Levels were exceeded.

### 4.4 DATA ANALYSIS BY MEDIA TYPE

The 2006 REMP data for each media type are discussed below. These are arranged in the same order as in Table 3-1 and are further categorized by pathway. Graphical plots of monitoring data are also shown in Figures 4-1 to 4-9. All values are plotted, whether they are "detectable" or "non-detectable."

#### 4.4.1 River Water (Not required in Revision 20 of the ODCM Issued in October 2006) (See Figure 4-1)

Aliquots of river water were automatically collected every two hours from the Deerfield River downstream from the site (WR-11 at Bear Swamp Lower Reservoir). These composited samples were collected periodically and sent to the environmental laboratory for gamma, tritium, and gross beta analyses. Monthly grab samples were also collected at the

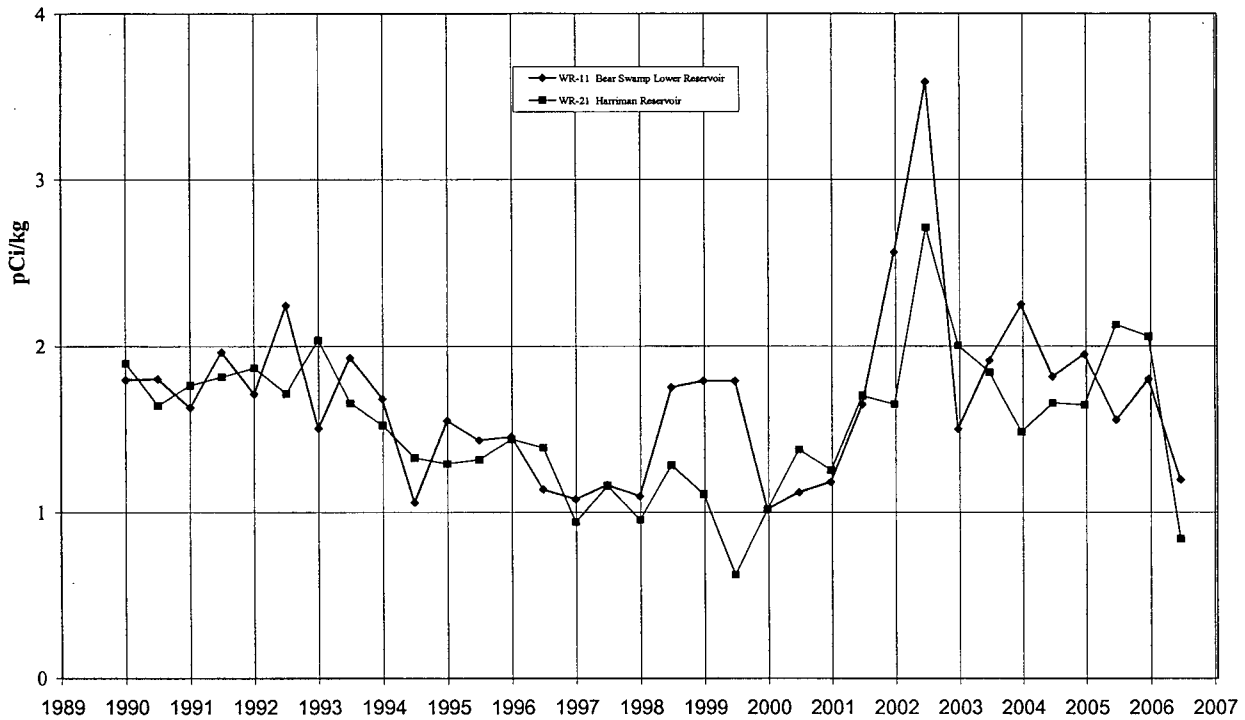


Harriman Reservoir control location and at Sherman Pond near the discharge area (WR-21 and -31, respectively).

Table 3-1 shows that gross-beta measurements were positive in five of the twenty-one samples collected from indicator locations, and two of twelve samples from the control site. This result is consistent with past measurement history in the water. No detectable levels of site-related radioactivity were found in any of the 2006 river water samples by tritium or gamma spectroscopy analyses.

The historical concentrations of gross beta activity at the indicator and control locations have not been significantly different, as shown in Figure 4-1, except during the last half of 1992, 1998-1999, and in 2002 when the levels at WR-11 were slightly elevated relative to the control, but no tritium or site related gamma emitter was detected in any sample set for these years of elevated gross beta activity. The gross beta activity was attributed to naturally-occurring radioactivity as discussed in the earlier Annual Radiological Environmental Operating Reports. For 2006, the control station gross beta results and the indicator station values are generally in close agreement, suggesting no significant difference between the control location and indicator samples in 2006.

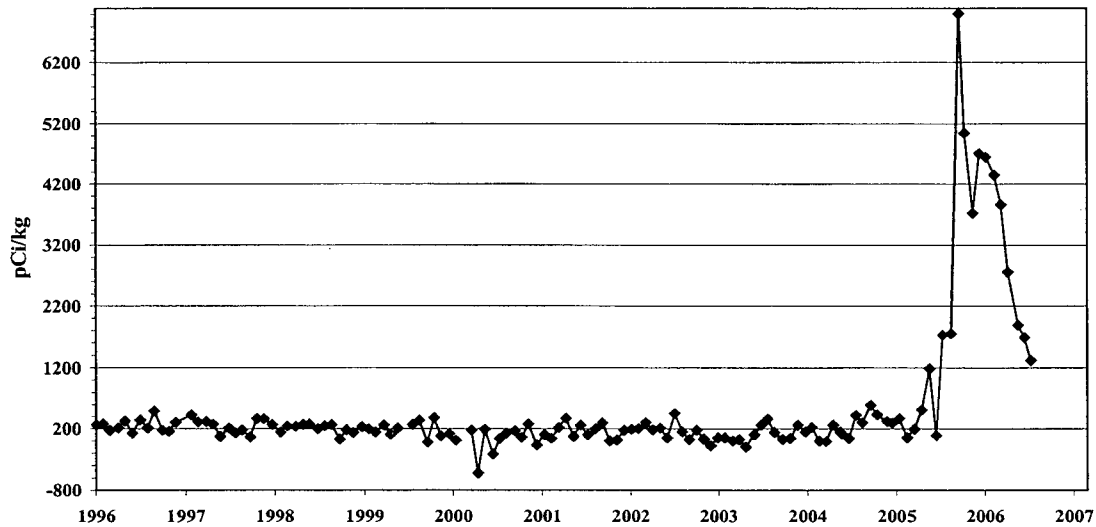
Figure 4-1  
 Gross-Beta Measurements of River Water  
 (Semi-Annual Averages)



4.4.2 Ground Water (Not Required in Revision 20 of the ODCM issued in October 2006)  
 (See Figure 4-2)

Periodic ground water samples were collected from two on-site locations during 2006, the site potable water well (WG-11) and Sherman Spring (WG-12). Table 3-1 shows that gross-beta measurements were positive in most of the samples, an outcome typical for ground water samples. This is due to naturally-occurring radionuclides in the water.

Tritium was detected in the samples from WG-12 (Sherman Spring) during 2006. Concentrations are elevated above the range of values for the past 9 years during which a very low or non-detectable concentration of tritium had been observed (Figure 4-2). The detected increases are attributed to disturbance of the aquifer associated with source removal during decommissioning and increased infiltration due to removal of structures, pavement and storm water drainage systems. Peak tritium concentration remained well below ODCM reporting levels. Water from Sherman Spring flows into the Deerfield River. Neither the Deerfield River nor Sherman Spring is used for drinking water. No tritium was detected in any of the samples from the on-site potable water well (WG-11). No gamma-emitting radionuclides were detected in any of the ground water samples from either WG-11 or WG-12.

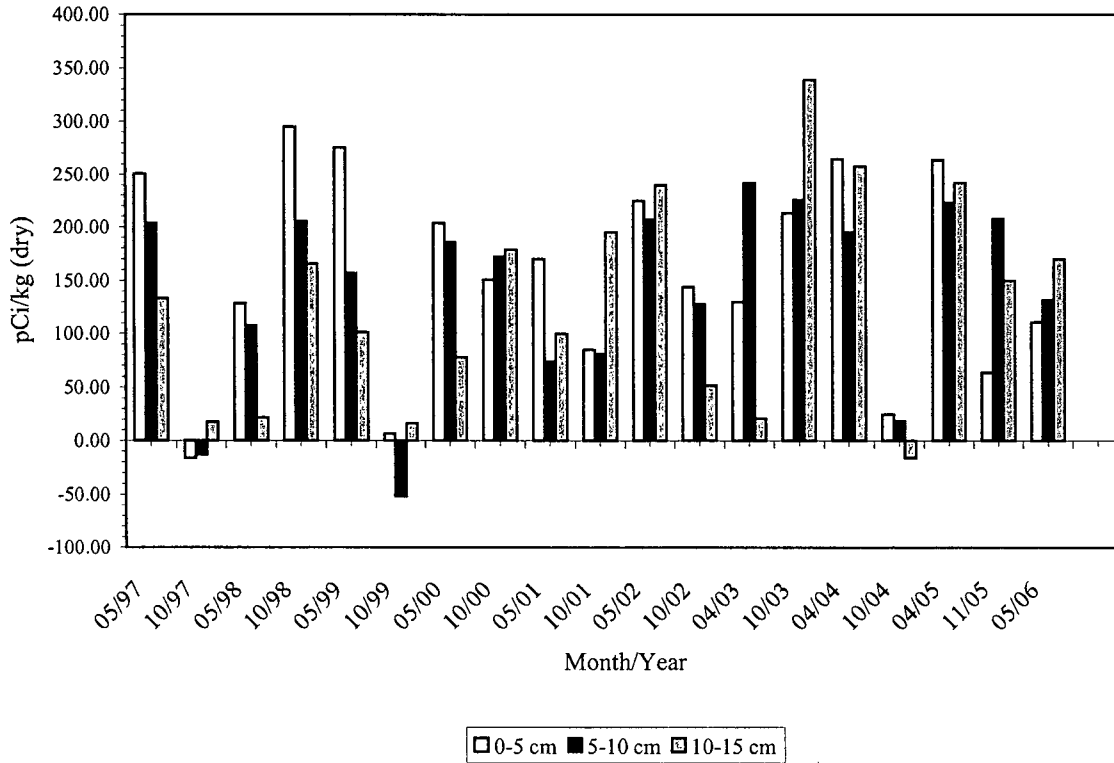
**Figure 4-2****Tritium in Ground Water  
Station WG-12, Sherman Spring**

4.4.3 Sediment (Not Required in Revision 20 of the ODCM issued in October 2006)  
(See Figures 4-3, 4-4, & 4-5)

Periodic semiannual sediment core samples were collected from two locations during 2006. Indicator station SE-11 is located downstream about 24 river miles at No. 4 Dam in Charlemont, MA. Control station SE-21 is located upstream (control) at Harriman Reservoir. Each sample is segmented by depth (0-5, 5-10, 10-15 cm) and analyzed for gamma-emitting radionuclides. As would be expected, naturally-occurring K-40 and Th-232 were detected in all of the samples. In addition to those naturally-occurring radionuclides, Cs-137 was also detected in three locations. These results are consistent with what has been measured in previous years. Presence of Cs-137 at Station SE-11 and SE-21 is attributed to nuclear weapons testing fallout as the far downstream location and the upstream control location indicate similar levels of Cs-137. Stations SE-11 and SE-21 are taken from the shoreline. Figure 4-3 shows the consistent range in Cs-137 levels over the last nine years in the down stream (24 miles) sampling location.

FIGURE 4-3

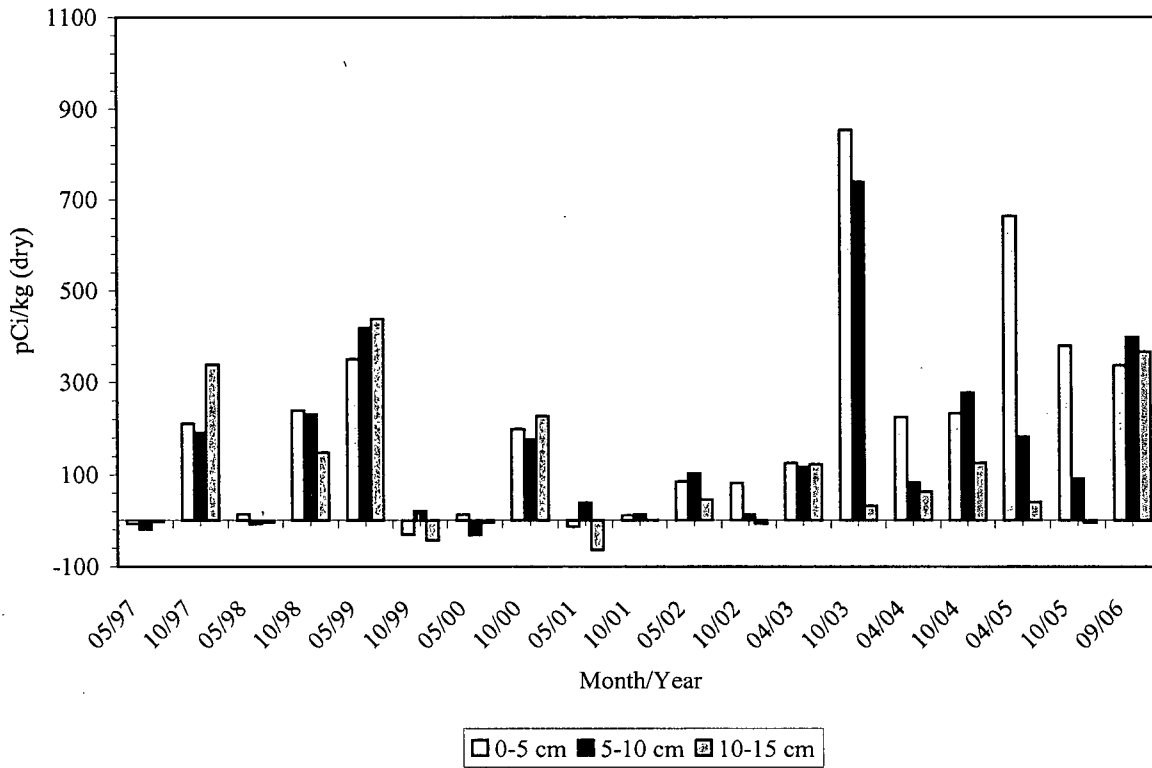
CESIUM-137 IN SHORELINE SEDIMENT STATION SE-11



Results for sediment samples from the upstream control location (SE-21) (Figure 4-4) are bounded by levels previously reported at that location for recent years. At both the indicator and the control location, the character of the sediment is highly dependent on the specific location sampled, and it also can depend on the water level in Harriman Reservoir or on the Deerfield River shoreline at the time of sampling. The diverse character of the sediment at either location, and the fact that Cs-137 tends to bind more to finer-grained sediment containing organic matter than to sandy and rocky sediment, as well as the dynamic nature of their fluvial environments, leads to a wide range of Cs-137 concentrations, as shown in Figures 4-3 and 4.4.

FIGURE 4-4

CESIUM-137 IN SHORELINE SEDIMENT STATION SE-21

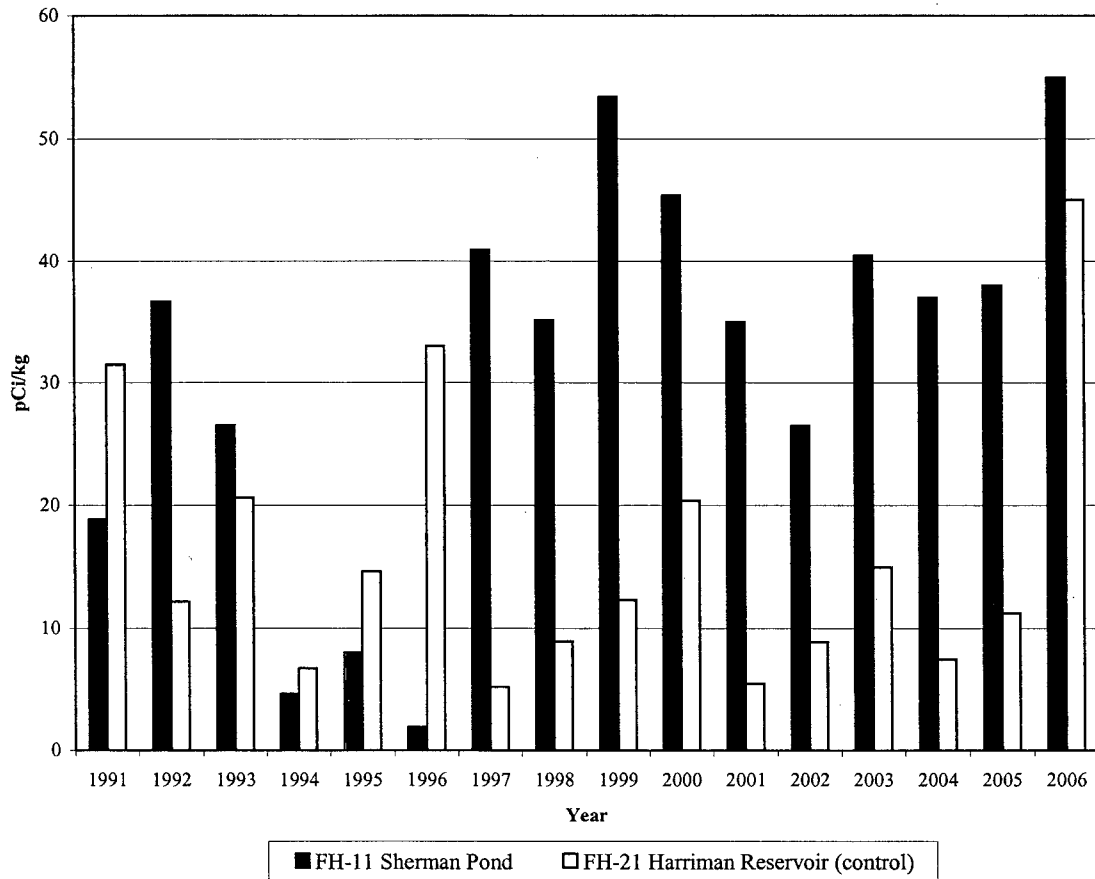


4.4.4 Fish (Not required in Revision 20 of the ODCM issued in October 2006)  
(See Figure 4-6)

Periodic samples of fish were collected from two locations during 2006, FH-11, an indicator station in Sherman Pond, and FH-21, a control station in Harriman Reservoir. The edible portions of each of these samples were analyzed for gamma-emitting radionuclides. As expected in aquatic animals, naturally-occurring K-40 was detected in all samples from both locations. No site-related gamma emitting radionuclides were detected in 2006 fish samples. The average 2006 Cs-137 concentrations shown in Figure 4-6 include the results of counting statistics on sample measurements, even when the analysis counts did not exceed the criteria for a “positive” (detectable) determination. The wide variation in relative Cs-137 activity illustrated in Figure 4-6 over past years is suspected to be due to the different species of fish and their specific eating habits. Fish that are bottom feeders tend to accumulate more of the Cs-137 activity from aquatic sediment than fish that feed higher in the water column. The makeup of any individual catch (fish sample) could be dominated by a single species available at the time, and no attempt is made to differentiate sample analysis by fish species, such as those who primarily feed on the bottom versus those species that feed higher in the water column.

FIGURE 4-6

**CESIUM-137 IN FISH  
ANNUAL AVERAGE CONCENTRATIONS**



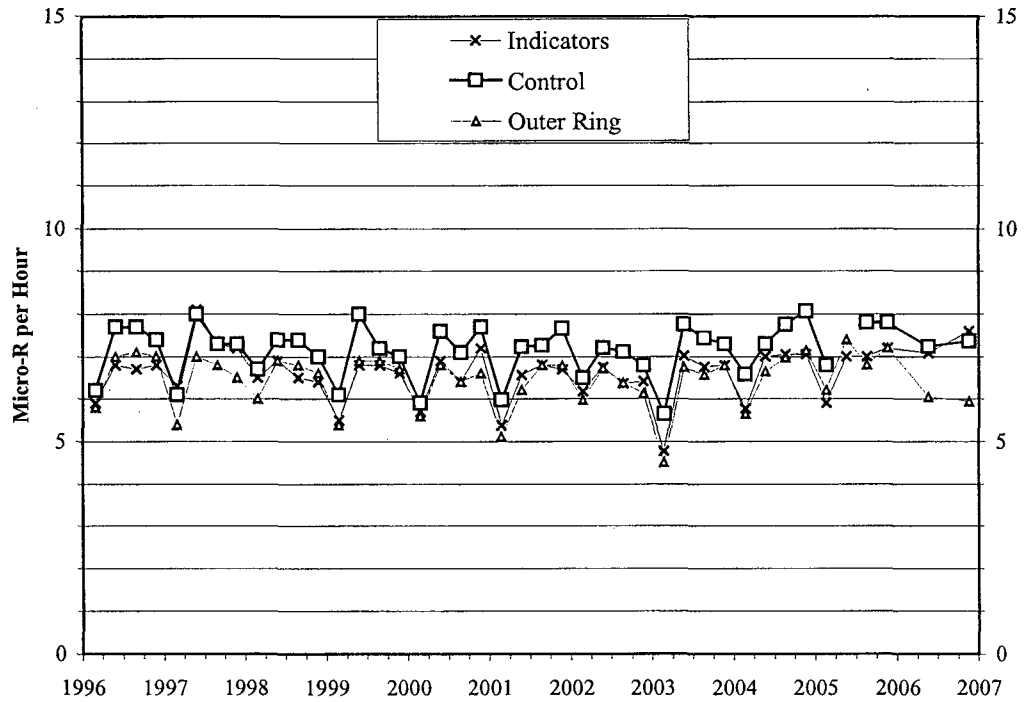
4.4.5 Direct Radiation (Revised in October 2006 with the issuance of Revision 20 of the ODCM)  
(See Figures 4-7, 4-8 & 4-9)

Direct radiation was continuously measured at 33 locations surrounding Yankee Rowe site in 2006 with the use of thermoluminescent dosimeters (TLDs). These were collected periodically during the year for readout at the E-LAB.

As shown in Figure 4-7, there is a distinct annual cycle at both indicator and control locations. The lowest point of the cycle occurs during the winter months. This is due primarily to the attenuating effect of the snow and frozen ground cover on radon emissions and on direct irradiation by naturally-occurring radionuclides in the soil. Differing amounts of these radionuclides in the underlying soil, rock or nearby building materials result in different radiation levels between one field site and another.

Figure 4-7

Exposure Rate at Indicator, Outer Ring and Control TLDs

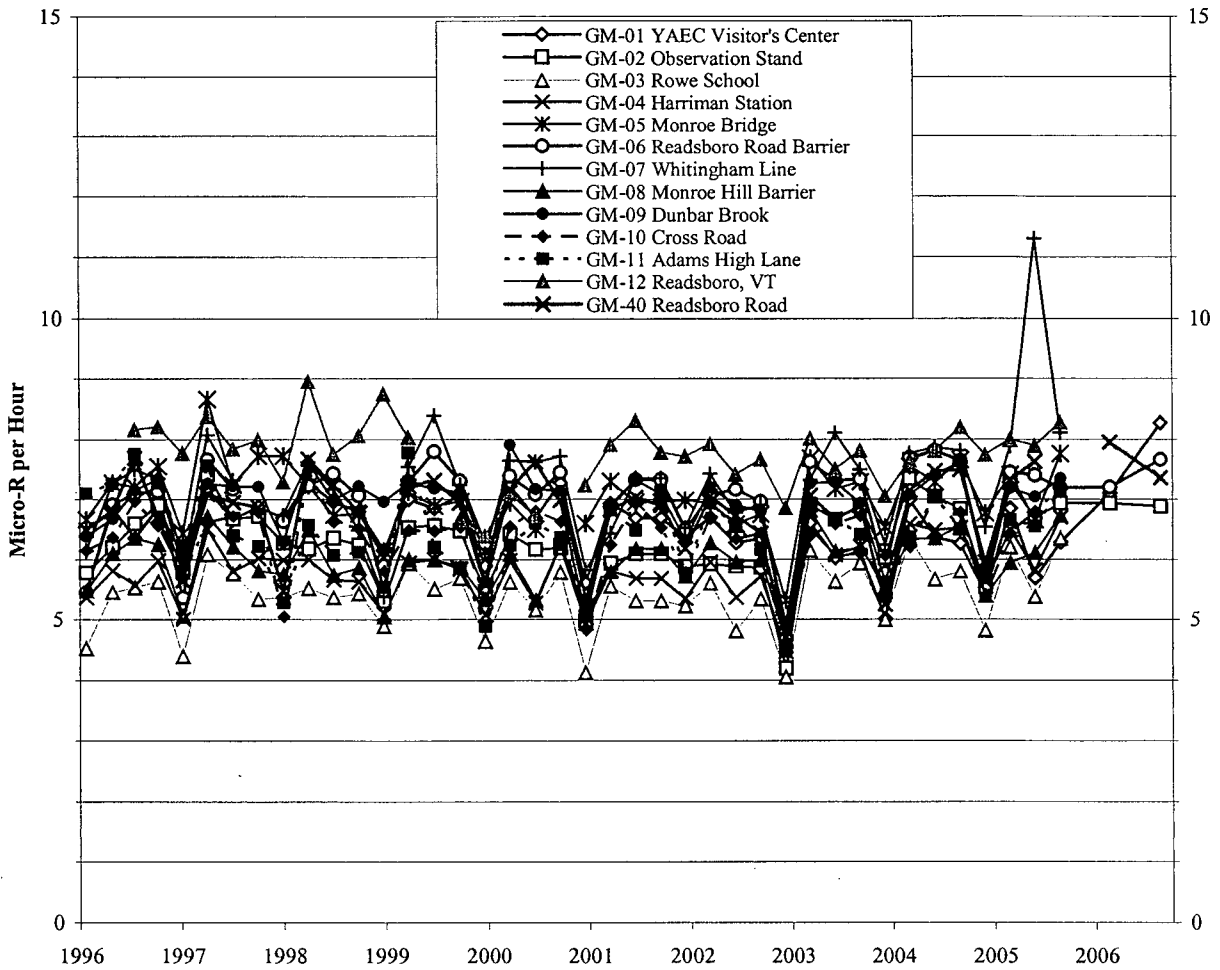


Based on the data in Table 3-2 and 3-3 and illustrated in Figure 4-7, it is evident that the mean exposure rates for the Indicator and Control categories were not significantly different in 2006. This indicates that there was no significant overall increase in direct radiation exposure rates above background in the site vicinity beyond the industrial area of the site.

As shown in Figure 4-8, the levels at offsite locations in 2006 are consistent with or bounded by levels in previous years.

Figure 4-8

Exposure Rate at Indicator TLDs

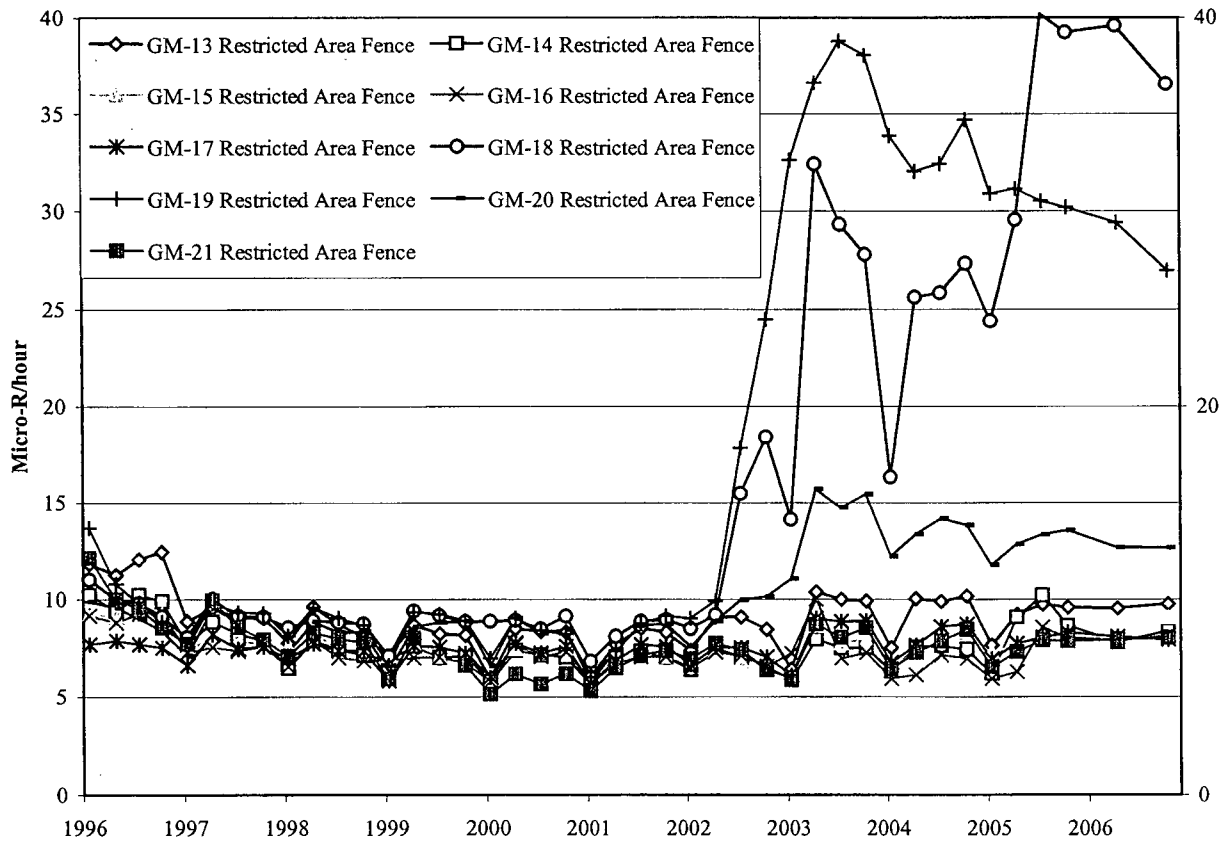


Results from the Fence line TLDs are shown in Figure 4-9 and summarized in Tables 3-2 and 3-3. These TLDs are located on the fence surrounding the inner restricted area within the Yankee Rowe site property bounds, and are influenced by the ISFSI. Specifically, the elevated exposure rates at TLD locations GM-18, -19, and -20 since 2002 are due to fuel and GTCC transfer activities to the ISFSI, completed during 2003, and storage of spent fuel at the ISFSI and other decommissioning activities that move and temporarily disturb the earth at various locations across the site.



Figure 4-9

Exposure Rate at Fenceline TLDs



## 5.0 OFF-SITE DOSE EQUIVALENT COMMITMENTS

The purpose of this section is to evaluate off-site dose consequences (dose equivalent commitments) associated with detectable site related radioactivity in environmental media. The method utilizes Regulatory Guide 1.109 (Reference 2) ODCM models and actual measurements of the concentrations of radioactivity in various environmental media (e.g., air, sediment, ground water) to compute the dose consequences resulting from the inhalation or ingestion of such material. These evaluations can be used to provide assurance that the station's radioactive liquid and airborne effluent dose models are unlikely to underestimate actual impacts.

The standards for the maximum dose to an individual of the general public taken from 40 CFR190, is 25 mRem to the whole body, 75 mRem to the thyroid, and 25 mRem to any other organ. The dose commitment to be calculated in this section is also compared to the ALARA dose objectives of 10CFR50 Appendix I for liquid effluents of 3 mrem/year total body and 10 mrem/yr to any organ. These standards are a fraction of the USA background radiation of 300 mRem per year given in NCRP 94 (Reference 3).

During 2006 there were no instances of site-related radioactivity observed in environmental media which have a direct human consumption or exposure pathway associated with it. Low levels of tritium in Sherman Spring water samples were detected, but this is a non-drinking water source.

In 2006 the potential dose for the postulated ingestion of 2 liters/day of Sherman Spring water, with an average concentration of 2,711 pCi/liter tritium (observed 2006 average value of all positive measurements), would be a small fraction of the ALARA dose objectives if Sherman Spring was used as a drinking water supply.

Since the REMP for 2006 did not indicate site related radioactivity in off-site media associated directly with human ingestion, there is no indication that the site's effluent dose models are not affectively estimating the dose impact to members of the public.

## 6.0 REFERENCES

1. USNRC Radiological Assessment Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program," Revision 1, November 1979.
2. Regulatory Guide 1.109, Calculation Of Annual Doses To Man From Routine Releases Of Reactor Effluents For The Purpose Of Evaluating Compliance With 10 CFR Part 50, Appendix I, Rev. 1, October, 1977.
3. *Exposure of the Population in the United States and Canada from Natural Background Radiation*. NCRP Report No. 94. National Council on Radiation Protection and Measurements, Bethesda, Maryland, 1994.

#### **APPENDIX A - LAND USE CENSUS**

Due to the elimination of any significant airborne term on the YR site, the ODCM was amended in 2005 which removed the requirement to conduct an annual Land Use Census. As such, no Land Use Census was performed in 2006.

**APPENDIX B - QUALITY ASSURANCE PROGRAM SUMMARY**

## **QUALITY ASSURANCE PROGRAM**

The quality assurance program at the AREVA NP Environmental Laboratory (E-LAB) is designed to serve two overall purposes: 1) Establish a measure of confidence in the measurement process to assure the licensee, regulatory agencies and the public that analytical results are accurate and precise; and 2) Identify deficiencies in the sampling and/or measurement process to those responsible for these operations so that corrective action can be taken. Quality assurance is applied to all steps of the measurement process, including the collection, measurement and reporting of data, as well as the record keeping of the final results. Quality control, as part of the quality assurance program, provides a means to control and measure the characteristics of the measurement equipment and processes, relative to established requirements.

The E-LAB employs a comprehensive quality assurance program designed to monitor the quality of analytical processing to ensure reliable environmental monitoring data. The program includes the use of controlled procedures for all work activities, a nonconformance and corrective action tracking system, systematic internal audits, audits by external groups, a laboratory quality control program, and a staff training program. Monitoring programs include the Intralaboratory Quality Control Program administered by the Laboratory QA Officer and a third party cross check program administered by Analytics, Inc. Together these programs are targeted to supply QC/QA sources at 5% of the client sample analysis load. In addition, a blind duplicate program is conducted through client environmental monitoring programs.

This summary reports all intralaboratory and third party results received by the E-LAB on or before December 31, 2006.

### **Intralaboratory Quality Control Program**

The E-LAB QA Officer administers an extensive intralaboratory quality control program in which process check samples are submitted for analysis. These samples are "spiked" with a known amount of radioactive material and are routinely submitted in triplicate to evaluate the bias and precision of a measurement process. Additionally, numerous samples of various matrices are periodically re-analyzed as part of the internal duplicate analysis program. Table B.1 provides the summary of the process check and duplicate results for January to December 2006. Of the 351 analyses evaluated for bias, 99.1% passed the acceptance criteria and 99.1% of the 222 results evaluated for precision were acceptable. The E-LAB internal acceptance criteria are summarized at the end of Table B.1.

### **Third Party Cross Check Program**

The E-LAB participates in a third party cross check program managed by Analytics Inc. to satisfy the requirement of the Environmental Technical Specification/ODCM. The E-LAB Analytics program was originally used to augment the EPA Intercomparison Program that it now replaces. The current program is designed to be comparable to the pre-1996 EPA PE Program in terms of the number of samples, matrices and nuclides. The results for the 4<sup>th</sup> quarter 2005 through the 3<sup>rd</sup> quarter 2006 are summarized in Table B.2. The 4<sup>th</sup> quarter 2006 sample results are not included in this report as the final results have not been received from the reporting laboratory. This data will be provided in the Quality Assurance Program summary for the subsequent year. Each sample is normally analyzed in triplicate and the results are evaluated against the internal acceptance criteria described in the E-LAB Manual 100-Laboratory Quality Assurance Plan. This acceptance protocol is used for all interlaboratory programs with no pre-set acceptance criteria. When results fall outside of the acceptance criteria, an investigation is initiated to determine the cause of the problem and if appropriate, corrective measures are taken. The E-LAB internal acceptance criteria are summarized at the end of Table B.1.

**Blind Duplicate Program**

Under the Blind Duplicate Quality Assurance Program, samples are split from homogeneous environmental media by the client and sent to the E-LAB for analysis. They are "blind" in that the identification of the matching sample is not identified to the Laboratory.

Participating clients submitted a total of 23 paired samples in 2006. The measurements evaluated include twenty-six gamma emitting radionuclides, H-3, and gross beta. All measurements are evaluated, whether the results are statistically positive or not, and whether the net concentration is positive or negative.

The samples submitted as part of this program are listed in Table B.3. For the 2006 program, 99.0% (479/484) of the measurements met the E-LAB internal acceptance criteria.

**Environmental TLD Quality Assurance Program**

Performance documentation of the routine processing of the Panasonic environmental TLDs (thermoluminescent dosimeter) program at the E-LAB is provided by the dosimetry quality assurance testing program. This program includes independent third party performance testing by Battelle Pacific Northwest Labs and internal performance testing conducted by the Laboratory QA Officer. Under these programs, sets of six dosimeters are irradiated to ANSI specified testing criteria and submitted for processing as "unknowns." The bias and precision of TLD processing is measured against this standard and is used to indicate trends and changes in performance. Instrumentation checks, although routinely performed and representing between 5-10% of the TLDs processed, are not presented in this report because they do not represent a true process check sample since the exposures are known to the processor.

Ninety performance tests were conducted in 2006 by the E-LAB and the third party tester. These tests were made on fifteen separate sets of six dosimeters. All of the fifteen TLD test sets passed the mean bias criteria of  $\pm 20.1\%$ . Of the ninety individual measurements, 100% of the dosimeter evaluations met the E-LAB Internal Acceptance Criteria for bias ( $\pm 20.1\%$ ) and precision ( $\pm 12.8\%$ ). Third Party QC results are summarized below.

**Percentage of Individual Analyses that passed E-LAB Internal Criteria**

| Dosimeter Type          | Number Tested | % Passed Bias Criteria | % Passed Precision Criteria |
|-------------------------|---------------|------------------------|-----------------------------|
| Panasonic Environmental | 90            | 100                    | 100                         |

**Summary of Third Party Testing**

| Dosimeter Type          | Exposure Period | ANSI Category   | % (Bias $\pm$ SD) |
|-------------------------|-----------------|-----------------|-------------------|
| Panasonic Environmental | SH/2006         | II, high energy | 7.5 $\pm$ 2.4     |
| "                       | SH/2006         | II, high energy | 4.0 $\pm$ 1.0     |

\* American National Standards Institute (ANSI) Performance Statistic as referenced in the Dosimetry Services Semi-Annual QA Status Report.

Note: Results are expressed as the delivered exposure for environmental TLD. ANSI HPS N13.29-1995 (Draft) Category II, High energy photons (Cs-137 or Co-60).

**Conclusion**

Based on review of the results of the AREVA NP Environmental Laboratory quality assurance program , the quality of the data generated has been verified.



**TABLE B.1**  
**E-LAB RESULTS IN THE INTRALABORATORY PROCESS CONTROL PROGRAM**  
 January - December 2006

| Media Analysis                | Bias Criteria (1) |      |     |     | Precision Criteria (2) |      |      |     |
|-------------------------------|-------------------|------|-----|-----|------------------------|------|------|-----|
|                               | 1                 | 2    | 3   | 4   | 1                      | 2    | 3    | 4   |
| I. Air Charcoal               |                   |      |     |     |                        |      |      |     |
| Gamma-Quantitative            | 34                | 11   | 5   | 2   | 0                      | 0    | 0    | 0   |
| Gamma-Screening               | 6                 | 11   | 1   | 0   | 0                      | 0    | 0    | 0   |
| II. Air Filter                |                   |      |     |     |                        |      |      |     |
| Beta                          | 231               | 17   | 0   | 0   | 0                      | 0    | 0    | 0   |
| III. Milk                     |                   |      |     |     |                        |      |      |     |
| Gamma                         | 0                 | 0    | 0   | 0   | 14                     | 2    | 24   | 0   |
| I-131(LL)                     | 3                 | 0    | 0   | 0   | 3                      | 0    | 0    | 0   |
| IV. Soil/Sediment             |                   |      |     |     |                        |      |      |     |
| Gamma                         | 0                 | 0    | 0   | 0   | 16                     | 6    | 16   | 0   |
| V. Vegetation/Food            |                   |      |     |     |                        |      |      |     |
| Gamma                         | 0                 | 0    | 0   | 0   | 16                     | 16   | 46   | 2   |
| VI. Water                     |                   |      |     |     |                        |      |      |     |
| Gross Alpha                   | 0                 | 4    | 4   | 1   | 0                      | 0    | 2    | 0   |
| Gross Beta                    | 14                | 0    | 1   | 0   | 2                      | 4    | 2    | 0   |
| Gamma                         | 0                 | 0    | 0   | 0   | 4                      | 2    | 26   | 0   |
| I-131(LL)                     | 1                 | 1    | 1   | 0   | 1                      | 2    | 0    | 0   |
| Sr-90                         | 0                 | 1    | 2   | 0   | 0                      | 2    | 0    | 0   |
| Tritium                       | 0                 | 0    | 0   | 0   | 6                      | 0    | 8    | 0   |
| Total Number in Range         | 289               | 45   | 14  | 3   | 62                     | 34   | 124  | 2   |
| Percentage of Total Processed | 82.3              | 12.8 | 4.0 | 0.9 | 27.9                   | 15.3 | 55.9 | 0.9 |
| Sum of Analyses               |                   | 351  |     |     |                        | 222  |      |     |

**(1) Percent Bias Criteria by Bias Category**

- Bias Category = 1 > 0% and <= 5%
- Bias Category = 2 > 5% and <= 10%
- Bias Category = 3 > 10% and <= 15%, or within 2 sigma of known
- Gross alpha/beta water, Sr 89/90 > 10% and <= 25%
- Transuranics > 10% and <= 20%
- Bias Category = 4 Outside Criteria

**(2) Percent Precision Criteria by Precision Category**

- Precision Category = 1 > 0% and <= 5%
- Precision Category = 2 > 5% and <= 10%
- Precision Category = 3 > 10% and <= 15%, or within 2 sigma of mean
- Precision Category = 4 Outside Criteria

**TABLE B.2**  
**E-LAB RESULTS IN THE ANALYTICS INC. CROSS CHECK PROGRAM**  
**Quarter 4, 2005 - Quarter 3, 2006**

| Sample Number | Quarter/Year | Sample Media | Nuclide     | Reported Value | Known Value | Ratio E-LAB/Analytics | Evaluation |
|---------------|--------------|--------------|-------------|----------------|-------------|-----------------------|------------|
| E4836-162     | 4th/2005     | Water        | H-3         | 13700          | 13200       | 1.04                  | Agreement  |
| E4837-162     | 4th/2005     | Water        | Sr-89       | 80.3           | 91.4        | 0.88                  | Agreement  |
| E4837-162     | 4th/2005     | Water        | Sr-90       | 7.18           | 7.4         | 0.97                  | Agreement  |
| E4838-162     | 4th/2005     | Filter       | Gross Alpha | 22.3           | 25.0        | 0.89                  | Agreement  |
| E4838-162     | 4th/2005     | Filter       | Gross Beta  | 146            | 136         | 1.07                  | Agreement  |
| E4839-162     | 4th/2005     | Filter       | Ce-141      | 122            | 131         | 0.93                  | Agreement  |
| E4839-162     | 4th/2005     | Filter       | Cr-51       | 113            | 113         | 1.00                  | Agreement  |
| E4839-162     | 4th/2005     | Filter       | Cs-134      | 48.0           | 51.0        | 0.94                  | Agreement  |
| E4839-162     | 4th/2005     | Filter       | Cs-137      | 111            | 111         | 1.00                  | Agreement  |
| E4839-162     | 4th/2005     | Filter       | Co-58       | 44.2           | 45.2        | 0.98                  | Agreement  |
| E4839-162     | 4th/2005     | Filter       | Mn-54       | 93.5           | 88.9        | 1.05                  | Agreement  |
| E4839-162     | 4th/2005     | Filter       | Fe-59       | 44.6           | 48.1        | 0.93                  | Agreement  |
| E4839-162     | 4th/2005     | Filter       | Zn-65       | 95.8           | 89.9        | 1.07                  | Agreement  |
| E4839-162     | 4th/2005     | Filter       | Co-60       | 59.1           | 64.6        | 0.91                  | Agreement  |
| E4840-162     | 4th/2005     | Filter       | Sr-89       | 103            | 121         | 0.85                  | Agreement  |
| E4840-162     | 4th/2005     | Filter       | Sr-90       | 9.05           | 9.70        | 0.93                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | I-131LL     | 72.4           | 74.6        | 0.97                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | I-131       | 74.1           | 74.6        | 0.99                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | Ce-141      | 217            | 224         | 0.97                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | Cr-51       | 190            | 193         | 0.98                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | Cs-134      | 86.4           | 87.3        | 0.99                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | Cs-137      | 187            | 189         | 0.99                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | Co-58       | 78.7           | 77.5        | 1.02                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | Mn-54       | 153            | 152         | 1.01                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | Fe-59       | 87.8           | 82.4        | 1.07                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | Zn-65       | 148            | 154         | 0.96                  | Agreement  |
| E4841-162     | 4th/2005     | Milk         | Co-60       | 106            | 111         | 0.95                  | Agreement  |
| E4879-162     | 4th/2005     | Charcoal     | I-131       | 68.4           | 72.0        | 0.95                  | Agreement  |

\* pCi/Liter (Filters in pCi)

**TABLE B.2 (cont'd)**  
**E-LAB RESULTS IN THE ANALYTICS INC. CROSS CHECK PROGRAM**  
**Quarter 4, 2005 - Quarter 3, 2006**

| Sample Number | Quarter/Year | Sample Media | Nuclide     | Reported Value | Known Value | Ratio E-LAB/Analytics | Evaluation |
|---------------|--------------|--------------|-------------|----------------|-------------|-----------------------|------------|
| E4884-162     | 1st/2006     | Water        | Gross Alpha | 38.7           | 38.1        | 1.02                  | Agreement  |
| E4884-162     | 1st/2006     | Water        | Gross Beta  | 265            | 262         | 1.01                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | I-131LL     | 65.8           | 67.4        | 0.98                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | I-131       | 66.3           | 67.4        | 0.98                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | Ce-141      | 83.0           | 86.8        | 0.96                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | Cr-51       | 217            | 234         | 0.93                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | Cs-134      | 91.9           | 101         | 0.91                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | Cs-137      | 73.3           | 74.3        | 0.99                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | Co-58       | 84.7           | 87.5        | 0.97                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | Mn-54       | 74.7           | 78.1        | 0.96                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | Fe-59       | 73.2           | 72.4        | 1.01                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | Zn-65       | 146.7          | 148         | 0.99                  | Agreement  |
| E4885-162     | 1st/2006     | Water        | Co-60       | 102.5          | 107         | 0.96                  | Agreement  |
| E4886-162     | 1st/2006     | Water        | Sr-89       | 82.0           | 99.4        | 0.82                  | Agreement  |
| E4886-162     | 1st/2006     | Water        | Sr-90       | 10.2           | 10.8        | 0.94                  | Agreement  |
| E4887-162     | 1st/2006     | Charcoal     | I-131       | 84.3           | 84.8        | 0.99                  | Agreement  |
| E4888-162     | 1st/2006     | Filter       | Gross Alpha | 13.5           | 14.2        | 0.95                  | Agreement  |
| E4888-162     | 1st/2006     | Filter       | Gross Beta  | 104.5          | 97.3        | 1.07                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | I-131LL     | 81.8           | 78.0        | 1.05                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | I-131       | 77.4           | 78.8        | 0.98                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | Ce-141      | 101            | 104         | 0.97                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | Cr-51       | 277            | 280         | 0.99                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | Cs-134      | 113.8          | 121         | 0.94                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | Cs-137      | 86.7           | 88.8        | 0.98                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | Co-58       | 100            | 105         | 0.95                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | Mn-54       | 94.6           | 93.3        | 1.01                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | Fe-59       | 90.7           | 86.6        | 1.05                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | Zn-65       | 172.2          | 176         | 0.98                  | Agreement  |
| E4889-162     | 1st/2006     | Milk         | Co-60       | 125.0          | 128         | 0.98                  | Agreement  |
| E4890-162     | 1st/2006     | Milk         | Sr-89       | 79.7           | 99.2        | 0.80                  | Agreement  |
| E4890-162     | 1st/2006     | Milk         | Sr-90       | 10.6           | 10.8        | 0.98                  | Agreement  |

\* pCi/Liter (Filters in pCi)

**TABLE B.2 (cont'd)**  
**E-LAB RESULTS IN THE ANALYTICS INC. CROSS CHECK PROGRAM**  
**Quarter 4, 2005 - Quarter 3, 2006**

| Sample Number | Quarter/Year | Sample Media | Nuclide     | Reported Value | Known Value | Ratio E-LAB/Analytics | Evaluation    |
|---------------|--------------|--------------|-------------|----------------|-------------|-----------------------|---------------|
| E5013-162     | 2nd/2006     | Water        | H-3         | 5830           | 6000        | 0.97                  | Agreement     |
| E5014-162     | 2nd/2006     | Filter       | Gross Alpha | 31.8           | 36.6        | 0.87                  | Agreement     |
| E5014-162     | 2nd/2006     | Filter       | Gross Beta  | 103.8          | 96.8        | 1.07                  | Agreement     |
| E5015-162     | 2nd/2006     | Filter       | Ce-141      | 91.6           | 92.8        | 0.99                  | Agreement     |
| E5015-162     | 2nd/2006     | Filter       | Cr-51       | 131.7          | 131         | 1.01                  | Agreement     |
| E5015-162     | 2nd/2006     | Filter       | Cs-134      | 60.5           | 63.9        | 0.95                  | Agreement     |
| E5015-162     | 2nd/2006     | Filter       | Cs-137      | 62.9           | 59.3        | 1.06                  | Agreement     |
| E5015-162     | 2nd/2006     | Filter       | Co-58       | 52.0           | 50.6        | 1.03                  | Agreement     |
| E5015-162     | 2nd/2006     | Filter       | Mn-54       | 74.5           | 73.9        | 1.01                  | Agreement     |
| E5015-162     | 2nd/2006     | Filter       | Fe-59       | 46.4           | 47.3        | 0.98                  | Agreement     |
| E5015-162     | 2nd/2006     | Filter       | Zn-65       | 93.4           | 93.6        | 1.00                  | Agreement     |
| E5015-162     | 2nd/2006     | Filter       | Co-60       | 63.0           | 65.0        | 0.97                  | Agreement     |
| E5016-162     | 2nd/2006     | Filter       | Sr-89       | 146.6          | 163         | 0.90                  | Agreement     |
| E5016-162     | 2nd/2006     | Filter       | Sr-90       | 7.01           | 12.3        | 0.57                  | Non-Agreement |
| E5017-162     | 2nd/2006     | Milk         | I-131LL     | 67.0           | 63.2        | 1.06                  | Agreement     |
| E5017-162     | 2nd/2006     | Milk         | I-131       | 62.0           | 63.2        | 0.98                  | Agreement     |
| E5017-162     | 2nd/2006     | Milk         | Ce-141      | 180.8          | 184         | 0.98                  | Agreement     |
| E5017-162     | 2nd/2006     | Milk         | Cr-51       | 248.0          | 259         | 0.96                  | Agreement     |
| E5017-162     | 2nd/2006     | Milk         | Cs-134      | 120.1          | 127         | 0.95                  | Agreement     |
| E5017-162     | 2nd/2006     | Milk         | Cs-137      | 117.3          | 117         | 1.00                  | Agreement     |
| E5017-162     | 2nd/2006     | Milk         | Co-58       | 97.3           | 100         | 0.97                  | Agreement     |
| E5017-162     | 2nd/2006     | Milk         | Mn-54       | 150.5          | 146         | 1.03                  | Agreement     |
| E5017-162     | 2nd/2006     | Milk         | Fe-59       | 95.4           | 93.6        | 1.02                  | Agreement     |
| E5017-162     | 2nd/2006     | Milk         | Zn-65       | 183.9          | 185         | 0.99                  | Agreement     |
| E5017-162     | 2nd/2006     | Milk         | Co-60       | 126.2          | 129         | 0.98                  | Agreement     |

\* pCi/Liter (Filters in pCi)

\*\* Sr-90 on AP sample was re-analyzed with acceptable results. Analytical blank and background frequencies are being evaluated.

**TABLE B.2 (cont'd)**  
**E-LAB RESULTS IN THE ANALYTICS INC. CROSS CHECK PROGRAM**  
**Quarter 4, 2005 - Quarter 3, 2006**

| Sample Number | Quarter/Year | Sample Media | Nuclide     | Reported Value | Known Value | Ratio E-LAB/Analytics | Evaluation |
|---------------|--------------|--------------|-------------|----------------|-------------|-----------------------|------------|
| E5090-162     | 3rd /2006    | Water        | Gross Alpha | 71.5           | 69.4        | 1.03                  | Agreement  |
| E5090-162     | 3rd /2006    | Water        | Gross Beta  | 253            | 273         | 0.93                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | I-131LL     | 84.4           | 79.9        | 1.06                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | I-131       | 77.3           | 79.9        | 0.97                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | Ce-141      | 84.5           | 88.0        | 0.96                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | Cr-51       | 287            | 288         | 1.00                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | Cs-134      | 85.6           | 87.0        | 0.98                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | Cs-137      | 174            | 179         | 0.97                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | Co-58       | 108            | 112         | 0.96                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | Mn-54       | 116            | 115         | 1.01                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | Fe-59       | 47.0           | 44.7        | 1.05                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | Zn-65       | 146            | 148         | 0.99                  | Agreement  |
| E5091-162     | 3rd /2006    | Water        | Co-60       | 130            | 137         | 0.95                  | Agreement  |
| E5092-162     | 3rd /2006    | Charcoal     | I-131       | 88.3           | 91.1        | 0.97                  | Agreement  |
| E5093-162     | 3rd /2006    | Filter       | Gross Alpha | 36.9           | 37.3        | 0.99                  | Agreement  |
| E5093-162     | 3rd /2006    | Filter       | Gross Beta  | 142            | 147         | 0.97                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | I-131LL     | 79.9           | 73.8        | 1.08                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | I-131       | 72.5           | 73.8        | 0.98                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | Ce-141      | 85.5           | 86.0        | 0.99                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | Cr-51       | 288            | 282         | 1.02                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | Cs-134      | 84.8           | 85.0        | 1.00                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | Cs-137      | 171            | 175         | 0.98                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | Co-58       | 106            | 109         | 0.97                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | Mn-54       | 112            | 113         | 0.99                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | Fe-59       | 45.3           | 43.7        | 1.04                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | Zn-65       | 146            | 145         | 1.01                  | Agreement  |
| E5094-162     | 3rd /2006    | Milk         | Co-60       | 129            | 134         | 0.96                  | Agreement  |

\* pCi/Liter (Filters in pCi)

**TABLE B.3**

**SUMMARY OF BLIND DUPLICATE SAMPLES  
January - December 2006**

| <b>TYPE OF SAMPLE</b> | <b>NUMBER OF PAIRED<br/>SAMPLES SUBMITTED</b> |
|-----------------------|---|
| Water                 | 17  |
| Algae                 | 3   |
| Mussels               | 3   |
| <b>TOTAL</b>          | <b>23</b>                                     |

**APPENDIX C - SUMMARY OF 2006 REMP DATA**

Yankee Nuclear Power Station

Yankee Nuclear Power Station  
 Radiological Environmental Monitoring Program  
 Summary of 2006 Data

| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE    | CONC (pCi/m3) | STD.DEV. (pCi/m3) | MDC (pCi/m3) |
|-------------|---------|-----------|-----------|------------|---------------|-------------------|--------------|
| AP          | 11      | L10398-01 | 1/11/2006 | AcTh-228   | 3.10E-03      | 4.40E-03          | 1.60E-02     |
| AP          | 11      | L10398-01 | 1/11/2006 | Be-7       | 7.70E-02      | 1.30E-02          | 2.80E-02 *   |
| AP          | 11      | L10398-01 | 1/11/2006 | Co-58      | 2.10E-03      | 9.40E-04          | 2.50E-03     |
| AP          | 11      | L10398-01 | 1/11/2006 | Co-60      | -9.00E-04     | 1.00E-03          | 4.90E-03     |
| AP          | 11      | L10398-01 | 1/11/2006 | Cs-134     | 4.50E-04      | 8.40E-04          | 3.30E-03     |
| AP          | 11      | L10398-01 | 1/11/2006 | Cs-137     | -3.70E-04     | 6.00E-04          | 2.90E-03     |
| AP          | 11      | L10398-01 | 1/11/2006 | GROSS BETA | 1.81E-02      | 1.10E-03          | 1.90E-03 *   |
| AP          | 11      | L10398-01 | 1/11/2006 | K-40       | 6.00E-03      | 1.20E-02          | 4.90E-02     |
| AP          | 11      | L10450-01 | 1/25/2006 | AcTh-228   | 1.60E-03      | 2.90E-03          | 1.10E-02     |
| AP          | 11      | L10450-01 | 1/25/2006 | Be-7       | 7.90E-02      | 1.40E-02          | 3.20E-02 *   |
| AP          | 11      | L10450-01 | 1/25/2006 | Co-58      | -1.60E-04     | 8.30E-04          | 3.70E-03     |
| AP          | 11      | L10450-01 | 1/25/2006 | Co-60      | 1.62E-03      | 9.90E-04          | 3.00E-03     |
| AP          | 11      | L10450-01 | 1/25/2006 | Cs-134     | 4.00E-04      | 1.20E-03          | 4.60E-03     |
| AP          | 11      | L10450-01 | 1/25/2006 | Cs-137     | -1.57E-03     | 8.30E-04          | 4.10E-03     |
| AP          | 11      | L10450-01 | 1/25/2006 | GROSS BETA | 1.76E-02      | 9.90E-04          | 1.70E-03 *   |
| AP          | 11      | L10450-01 | 1/25/2006 | K-40       | 7.00E-03      | 1.20E-02          | 4.70E-02     |
| AP          | 11      | L10511-01 | 2/8/2006  | AcTh-228   | -1.30E-03     | 2.90E-03          | 1.30E-02     |
| AP          | 11      | L10511-01 | 2/8/2006  | Be-7       | 3.70E-02      | 1.10E-02          | 2.80E-02 *   |
| AP          | 11      | L10511-01 | 2/8/2006  | Co-58      | 6.70E-04      | 8.50E-04          | 3.20E-03     |
| AP          | 11      | L10511-01 | 2/8/2006  | Co-60      | 0.00E+00      | 8.50E-04          | 3.70E-03     |
| AP          | 11      | L10511-01 | 2/8/2006  | Cs-134     | -1.50E-03     | 1.10E-03          | 4.80E-03     |
| AP          | 11      | L10511-01 | 2/8/2006  | Cs-137     | -4.50E-04     | 7.00E-04          | 3.10E-03     |
| AP          | 11      | L10511-01 | 2/8/2006  | GROSS BETA | 1.56E-02      | 9.80E-04          | 1.90E-03 *   |
| AP          | 11      | L10511-01 | 2/8/2006  | K-40       | 4.00E-03      | 1.10E-02          | 4.60E-02     |
| AP          | 11      | L10546-01 | 2/21/2006 | AcTh-228   | 4.60E-03      | 4.00E-03          | 1.40E-02     |
| AP          | 11      | L10546-01 | 2/21/2006 | Be-7       | 9.50E-02      | 1.80E-02          | 4.60E-02 *   |
| AP          | 11      | L10546-01 | 2/21/2006 | Co-58      | -1.80E-04     | 5.90E-04          | 2.90E-03     |
| AP          | 11      | L10546-01 | 2/21/2006 | Co-60      | 5.90E-04      | 8.60E-04          | 3.30E-03     |
| AP          | 11      | L10546-01 | 2/21/2006 | Cs-134     | -3.10E-04     | 8.80E-04          | 3.80E-03     |
| AP          | 11      | L10546-01 | 2/21/2006 | Cs-137     | -6.70E-04     | 7.80E-04          | 3.50E-03     |
| AP          | 11      | L10546-01 | 2/21/2006 | GROSS BETA | 2.16E-02      | 1.20E-03          | 2.20E-03 *   |
| AP          | 11      | L10546-01 | 2/21/2006 | K-40       | 1.00E-03      | 1.30E-02          | 5.20E-02     |
| AP          | 11      | L10596-01 | 3/8/2006  | AcTh-228   | -7.00E-04     | 2.50E-03          | 1.10E-02     |
| AP          | 11      | L10596-01 | 3/8/2006  | Be-7       | 9.50E-02      | 1.40E-02          | 2.90E-02 *   |
| AP          | 11      | L10596-01 | 3/8/2006  | Co-58      | 1.50E-04      | 6.90E-04          | 2.80E-03     |
| AP          | 11      | L10596-01 | 3/8/2006  | Co-60      | 1.40E-03      | 1.00E-03          | 3.40E-03     |
| AP          | 11      | L10596-01 | 3/8/2006  | Cs-134     | -1.33E-03     | 8.30E-04          | 4.00E-03     |
| AP          | 11      | L10596-01 | 3/8/2006  | Cs-137     | 0.00E+00      | 7.60E-04          | 3.00E-03     |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
 + Minimum Detectable Concentration > Lower Limit of Detection Requirement



Yankee Nuclear Power Station  
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| SAMPLE<br>TYPE | STATION | LSN       | END<br>DATE | NUCLIDE    | CONC<br>(pCi/m3) | STD.DEV.<br>(pCi/m3) | MDC<br>(pCi/m3) |   |
|----------------|---------|-----------|-------------|------------|------------------|----------------------|-----------------|---|
| AP             | 11      | L10596-01 | 3/8/2006    | GROSS BETA | 1.89E-02         | 9.90E-04             | 1.70E-03        | * |
| AP             | 11      | L10596-01 | 3/8/2006    | K-40       | -1.00E-04        | 9.50E-03             | 4.00E-02        |   |
| AP             | 11      | L10645-01 | 3/22/2006   | AcTh-228   | -1.00E-03        | 2.90E-03             | 1.30E-02        |   |
| AP             | 11      | L10645-01 | 3/22/2006   | Be-7       | 5.50E-02         | 1.20E-02             | 2.80E-02        | * |
| AP             | 11      | L10645-01 | 3/22/2006   | Co-58      | -4.00E-04        | 6.60E-04             | 3.20E-03        |   |
| AP             | 11      | L10645-01 | 3/22/2006   | Co-60      | -1.05E-03        | 7.80E-04             | 4.20E-03        |   |
| AP             | 11      | L10645-01 | 3/22/2006   | Cs-134     | 6.00E-04         | 1.10E-03             | 3.90E-03        |   |
| AP             | 11      | L10645-01 | 3/22/2006   | Cs-137     | 0.00E+00         | 7.10E-04             | 2.90E-03        |   |
| AP             | 11      | L10645-01 | 3/22/2006   | GROSS BETA | 1.68E-02         | 1.00E-03             | 1.80E-03        | * |
| AP             | 11      | L10645-01 | 3/22/2006   | K-40       | -1.40E-02        | 1.20E-02             | 5.70E-02        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | AcTh-228   | 7.20E-04         | 7.70E-04             | 2.80E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Ag-110m    | -6.30E-04        | 4.00E-04             | 1.90E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Ba-140     | -2.10E-03        | 4.20E-03             | 2.30E-02        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Be-7       | 8.39E-02         | 9.80E-03             | 1.70E-02        | * |
| AP             | 11      | L10742-01 | 3/22/2006   | Ce-141     | -3.00E-05        | 5.60E-04             | 2.20E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Ce-144     | -5.00E-05        | 6.80E-04             | 2.60E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Co-57      | 0.00E+00         | 9.00E-05             | 3.40E-04        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Co-58      | -4.00E-05        | 2.90E-04             | 1.30E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Co-60      | 3.10E-04         | 1.80E-04             | 2.80E-04        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Cs-134     | -2.50E-04        | 2.30E-04             | 1.10E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Cs-137     | -1.30E-04        | 1.60E-04             | 7.90E-04        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Fe-59      | 1.37E-03         | 7.90E-04             | 1.20E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | I-131      | -1.05E-02        | 9.60E-03             | 4.50E-02        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | K-40       | -8.00E-03        | 3.20E-03             | 1.80E-02        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | La-140     | -2.40E-03        | 4.80E-03             | 2.60E-02        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Mn-54      | -1.10E-04        | 1.60E-04             | 8.30E-04        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Nb-95      | -6.70E-04        | 6.30E-04             | 3.10E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Ru-103     | 2.90E-04         | 3.60E-04             | 1.40E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Ru-106     | 0.00E+00         | 1.90E-03             | 8.00E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Sb-124     | 1.28E-03         | 9.00E-04             | 1.70E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Zn-65      | -2.30E-04        | 3.90E-04             | 2.10E-03        |   |
| AP             | 11      | L10742-01 | 3/22/2006   | Zr-95      | 4.00E-04         | 6.20E-04             | 2.40E-03        |   |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)

+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

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| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE  | CONC (pCi/m3) | STD.DEV. (pCi/m3) | MDC (pCi/m3) |
|-------------|---------|-----------|-----------|----------|---------------|-------------------|--------------|
| AP-DAP      | 2       | L10398-02 | 1/11/2006 | AcTh-228 | 2.60E-03      | 4.10E-03          | 1.50E-02     |
| AP-DAP      | 2       | L10398-02 | 1/11/2006 | Be-7     | 2.30E-02      | 1.10E-02          | 3.30E-02     |
| AP-DAP      | 2       | L10398-02 | 1/11/2006 | Co-58    | -3.20E-04     | 8.50E-04          | 3.80E-03     |
| AP-DAP      | 2       | L10398-02 | 1/11/2006 | Co-60    | 1.00E-04      | 1.40E-03          | 5.60E-03     |
| AP-DAP      | 2       | L10398-02 | 1/11/2006 | Cs-134   | 1.49E-03      | 8.70E-04          | 2.60E-03     |
| AP-DAP      | 2       | L10398-02 | 1/11/2006 | Cs-137   | -3.00E-05     | 9.30E-04          | 3.80E-03     |
| AP-DAP      | 2       | L10398-02 | 1/11/2006 | K-40     | 2.10E-02      | 1.80E-02          | 6.10E-02     |
| AP-DAP      | 2       | L10450-02 | 1/24/2006 | AcTh-228 | 2.10E-03      | 3.90E-03          | 1.50E-02     |
| AP-DAP      | 2       | L10450-02 | 1/24/2006 | Be-7     | 3.40E-02      | 1.40E-02          | 4.20E-02     |
| AP-DAP      | 2       | L10450-02 | 1/24/2006 | Co-58    | 2.00E-04      | 1.20E-03          | 4.90E-03     |
| AP-DAP      | 2       | L10450-02 | 1/24/2006 | Co-60    | -1.08E-03     | 7.70E-04          | 5.00E-03     |
| AP-DAP      | 2       | L10450-02 | 1/24/2006 | Cs-134   | -2.00E-04     | 1.10E-03          | 5.00E-03     |
| AP-DAP      | 2       | L10450-02 | 1/24/2006 | Cs-137   | -2.10E-03     | 9.90E-04          | 5.30E-03     |
| AP-DAP      | 2       | L10450-02 | 1/24/2006 | K-40     | -9.00E-03     | 1.20E-02          | 6.30E-02     |
| AP-DAP      | 2       | L10511-02 | 2/7/2006  | AcTh-228 | 1.00E-03      | 3.30E-03          | 1.40E-02     |
| AP-DAP      | 2       | L10511-02 | 2/7/2006  | Be-7     | 2.70E-02      | 1.00E-02          | 2.90E-02     |
| AP-DAP      | 2       | L10511-02 | 2/7/2006  | Co-58    | -2.70E-04     | 5.60E-04          | 3.10E-03     |
| AP-DAP      | 2       | L10511-02 | 2/7/2006  | Co-60    | -6.00E-04     | 1.10E-03          | 5.20E-03     |
| AP-DAP      | 2       | L10511-02 | 2/7/2006  | Cs-134   | -6.00E-04     | 1.20E-03          | 5.10E-03     |
| AP-DAP      | 2       | L10511-02 | 2/7/2006  | Cs-137   | 3.00E-04      | 1.10E-03          | 4.20E-03     |
| AP-DAP      | 2       | L10511-02 | 2/7/2006  | K-40     | -8.00E-03     | 1.10E-02          | 5.50E-02     |
| AP-DAP      | 2       | L10546-02 | 2/21/2006 | AcTh-228 | 1.00E-03      | 3.70E-03          | 1.50E-02     |
| AP-DAP      | 2       | L10546-02 | 2/21/2006 | Be-7     | 6.70E-02      | 1.70E-02          | 4.60E-02 *   |
| AP-DAP      | 2       | L10546-02 | 2/21/2006 | Co-58    | 2.00E-04      | 1.10E-03          | 4.50E-03     |
| AP-DAP      | 2       | L10546-02 | 2/21/2006 | Co-60    | 3.00E-04      | 1.20E-03          | 5.10E-03     |
| AP-DAP      | 2       | L10546-02 | 2/21/2006 | Cs-134   | 3.00E-04      | 1.00E-03          | 4.10E-03     |
| AP-DAP      | 2       | L10546-02 | 2/21/2006 | Cs-137   | -1.14E-03     | 9.50E-04          | 4.40E-03     |
| AP-DAP      | 2       | L10546-02 | 2/21/2006 | K-40     | 2.30E-02      | 1.50E-02          | 4.70E-02     |
| AP-DAP      | 2       | L10596-02 | 3/7/2006  | AcTh-228 | -1.70E-03     | 1.60E-03          | 1.00E-02     |
| AP-DAP      | 2       | L10596-02 | 3/7/2006  | Be-7     | 4.50E-02      | 1.10E-02          | 2.70E-02 *   |
| AP-DAP      | 2       | L10596-02 | 3/7/2006  | Co-58    | -2.00E-04     | 1.00E-03          | 4.30E-03     |
| AP-DAP      | 2       | L10596-02 | 3/7/2006  | Co-60    | 2.10E-03      | 1.20E-03          | 3.90E-03     |
| AP-DAP      | 2       | L10596-02 | 3/7/2006  | Cs-134   | 8.70E-04      | 9.10E-04          | 3.30E-03     |
| AP-DAP      | 2       | L10596-02 | 3/7/2006  | Cs-137   | 1.07E-03      | 8.40E-04          | 2.90E-03     |
| AP-DAP      | 2       | L10596-02 | 3/7/2006  | K-40     | 2.00E-03      | 1.40E-02          | 5.90E-02     |
| AP-DAP      | 2       | L10645-02 | 3/21/2006 | AcTh-228 | -7.90E-03     | 3.80E-03          | 1.90E-02     |
| AP-DAP      | 2       | L10645-02 | 3/21/2006 | Be-7     | 1.11E-01      | 1.80E-02          | 3.80E-02 *   |
| AP-DAP      | 2       | L10645-02 | 3/21/2006 | Co-58    | 3.00E-04      | 1.10E-03          | 4.50E-03     |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

Yankee Nuclear Power Station  
 Radiological Environmental Monitoring Program  
 Summary of 2006 Data

| SAMPLE<br>TYPE | STATION | LSN       | END<br>DATE | NUCLIDE | CONC<br>(pCi/m3) | STD.DEV.<br>(pCi/m3) | MDC<br>(pCi/m3) |
|----------------|---------|-----------|-------------|---------|------------------|----------------------|-----------------|
| AP-DAP         | 2       | L10645-02 | 3/21/2006   | Co-60   | 2.10E-03         | 1.20E-03             | 3.40E-03        |
| AP-DAP         | 2       | L10645-02 | 3/21/2006   | Cs-134  | -9.70E-04        | 9.60E-04             | 4.60E-03        |
| AP-DAP         | 2       | L10645-02 | 3/21/2006   | Cs-137  | -4.00E-03        | 1.30E-03             | 6.30E-03        |
| AP-DAP         | 2       | L10645-02 | 3/21/2006   | K-40    | -4.00E-03        | 1.70E-02             | 7.20E-02        |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)

+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

Yankee Nuclear Power Station  
Radiological Environmental Monitoring Program  
Summary of 2006 Data

| SAMPLE TYPE | STATION | LSN       | END DATE | NUCLIDE | CONC (pCi/kg) | STD.DEV. (pCi/kg) | MDC (pCi/kg) |
|-------------|---------|-----------|----------|---------|---------------|-------------------|--------------|
| FH          | 11      | L10993-01 | 6/5/2006 | Ag-110m | -2.80E+01     | 2.20E+01          | 1.00E+02     |
| FH          | 11      | L10993-01 | 6/5/2006 | Ba-140  | -3.40E+01     | 3.40E+01          | 1.80E+02     |
| FH          | 11      | L10993-01 | 6/5/2006 | Be-7    | 2.40E+02      | 1.50E+02          | 4.90E+02     |
| FH          | 11      | L10993-01 | 6/5/2006 | Ce-141  | -2.60E+01     | 2.30E+01          | 9.40E+01     |
| FH          | 11      | L10993-01 | 6/5/2006 | Ce-144  | -1.20E+01     | 8.20E+01          | 3.00E+02     |
| FH          | 11      | L10993-01 | 6/5/2006 | Co-57   | 4.30E+00      | 8.20E+00          | 3.00E+01     |
| FH          | 11      | L10993-01 | 6/5/2006 | Co-58   | 3.00E+00      | 1.40E+01          | 5.90E+01     |
| FH          | 11      | L10993-01 | 6/5/2006 | Co-60   | -1.00E+01     | 1.90E+01          | 8.50E+01     |
| FH          | 11      | L10993-01 | 6/5/2006 | Cs-134  | 1.30E+00      | 9.80E+00          | 4.50E+01     |
| FH          | 11      | L10993-01 | 6/5/2006 | Cs-137  | 5.50E+01      | 2.10E+01          | 5.90E+01     |
| FH          | 11      | L10993-01 | 6/5/2006 | Fe-59   | 1.30E+01      | 4.70E+01          | 1.80E+02     |
| FH          | 11      | L10993-01 | 6/5/2006 | I-131   | -6.90E+01     | 5.90E+01          | 2.50E+02     |
| FH          | 11      | L10993-01 | 6/5/2006 | K-40    | 3.29E+03      | 5.50E+02          | 1.10E+03 *   |
| FH          | 11      | L10993-01 | 6/5/2006 | La-140  | -3.90E+01     | 3.90E+01          | 2.10E+02     |
| FH          | 11      | L10993-01 | 6/5/2006 | Mn-54   | 0.00E+00      | 2.00E+01          | 7.90E+01     |
| FH          | 11      | L10993-01 | 6/5/2006 | Nb-95   | 2.50E+01      | 2.00E+01          | 6.60E+01     |
| FH          | 11      | L10993-01 | 6/5/2006 | Ru-103  | 9.00E+00      | 1.30E+01          | 4.80E+01     |
| FH          | 11      | L10993-01 | 6/5/2006 | Ru-106  | -2.00E+02     | 1.50E+02          | 6.60E+02     |
| FH          | 11      | L10993-01 | 6/5/2006 | Sb-124  | 0.00E+00      | 2.80E+01          | 1.50E+02     |
| FH          | 11      | L10993-01 | 6/5/2006 | Zn-65   | -2.40E+01     | 2.90E+01          | 1.40E+02     |
| FH          | 11      | L10993-01 | 6/5/2006 | Zr-95   | -2.00E+01     | 2.50E+01          | 1.20E+02     |
| FH          | 21      | L10993-02 | 6/5/2006 | Ag-110m | 5.00E+00      | 1.80E+01          | 7.10E+01     |
| FH          | 21      | L10993-02 | 6/5/2006 | Ba-140  | 4.10E+01      | 3.60E+01          | 1.30E+02     |
| FH          | 21      | L10993-02 | 6/5/2006 | Be-7    | 3.00E+01      | 1.30E+02          | 4.70E+02     |
| FH          | 21      | L10993-02 | 6/5/2006 | Ce-141  | 2.80E+01      | 1.90E+01          | 6.40E+01     |
| FH          | 21      | L10993-02 | 6/5/2006 | Ce-144  | -1.05E+02     | 6.00E+01          | 2.50E+02     |
| FH          | 21      | L10993-02 | 6/5/2006 | Co-57   | 9.70E+00      | 8.80E+00          | 3.00E+01     |
| FH          | 21      | L10993-02 | 6/5/2006 | Co-58   | 7.00E+00      | 1.30E+01          | 5.10E+01     |
| FH          | 21      | L10993-02 | 6/5/2006 | Co-60   | 6.00E+00      | 1.20E+01          | 4.60E+01     |
| FH          | 21      | L10993-02 | 6/5/2006 | Cs-134  | -3.10E+01     | 1.10E+01          | 6.10E+01     |
| FH          | 21      | L10993-02 | 6/5/2006 | Cs-137  | 4.50E+01      | 2.10E+01          | 6.50E+01     |
| FH          | 21      | L10993-02 | 6/5/2006 | Fe-59   | -7.00E+00     | 3.20E+01          | 1.30E+02     |
| FH          | 21      | L10993-02 | 6/5/2006 | I-131   | 2.40E+01      | 5.00E+01          | 1.80E+02     |
| FH          | 21      | L10993-02 | 6/5/2006 | K-40    | 1.82E+03      | 3.30E+02          | 6.90E+02 *   |
| FH          | 21      | L10993-02 | 6/5/2006 | La-140  | 4.70E+01      | 4.10E+01          | 1.40E+02     |
| FH          | 21      | L10993-02 | 6/5/2006 | Mn-54   | -3.20E+00     | 8.60E+00          | 3.90E+01     |
| FH          | 21      | L10993-02 | 6/5/2006 | Nb-95   | -3.20E+01     | 1.50E+01          | 7.20E+01     |
| FH          | 21      | L10993-02 | 6/5/2006 | Ru-103  | -1.90E+01     | 1.40E+01          | 6.00E+01     |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)

+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

Yankee Nuclear Power Station  
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| SAMPLE<br>TYPE | STATION | LSN       | END<br>DATE | NUCLIDE | CONC<br>(pCi/kg) | STD.DEV.<br>(pCi/kg) | MDC<br>(pCi/kg) |
|----------------|---------|-----------|-------------|---------|------------------|----------------------|-----------------|
| FH             | 21      | L10993-02 | 6/5/2006    | Ru-106  | 3.00E+01         | 1.20E+02             | 4.40E+02        |
| FH             | 21      | L10993-02 | 6/5/2006    | Sb-124  | 3.90E+01         | 2.30E+01             | 3.50E+01        |
| FH             | 21      | L10993-02 | 6/5/2006    | Zn-65   | -1.60E+01        | 3.30E+01             | 1.40E+02        |
| FH             | 21      | L10993-02 | 6/5/2006    | Zr-95   | 4.40E+01         | 2.70E+01             | 8.80E+01        |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
 + Minimum Detectable Concentration > Lower Limit of Detection Requirement

Yankee Nuclear Power Station  
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Summary of 2006 Data

| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE  | CONC (pCi/kg) | STD.DEV. (pCi/kg) | MDC (pCi/kg) |   |
|-------------|---------|-----------|-----------|----------|---------------|-------------------|--------------|---|
| SE1         | 11      | L10992-01 | 5/2/2006  | AcTh-228 | 1.16E+03      | 1.30E+02          | 4.50E+02     | * |
| SE1         | 11      | L10992-01 | 5/2/2006  | Be-7     | -5.90E+02     | 5.10E+02          | 2.00E+03     |   |
| SE1         | 11      | L10992-01 | 5/2/2006  | Co-58    | -3.70E+01     | 4.70E+01          | 1.90E+02     |   |
| SE1         | 11      | L10992-01 | 5/2/2006  | Co-60    | 1.00E+00      | 2.70E+01          | 1.10E+02     |   |
| SE1         | 11      | L10992-01 | 5/2/2006  | Cs-134   | 1.10E+01      | 2.40E+01          | 8.50E+01     |   |
| SE1         | 11      | L10992-01 | 5/2/2006  | Cs-137   | 1.11E+02      | 4.30E+01          | 1.30E+02     |   |
| SE1         | 11      | L10992-01 | 5/2/2006  | K-40     | 2.13E+04      | 1.20E+03          | 1.20E+03     | * |
| SE2         | 11      | L10992-02 | 5/2/2006  | AcTh-228 | 9.00E+02      | 1.30E+02          | 4.40E+02     | * |
| SE2         | 11      | L10992-02 | 5/2/2006  | Be-7     | -7.00E+01     | 4.80E+02          | 1.80E+03     |   |
| SE2         | 11      | L10992-02 | 5/2/2006  | Co-58    | -1.60E+01     | 4.40E+01          | 1.70E+02     |   |
| SE2         | 11      | L10992-02 | 5/2/2006  | Co-60    | 3.40E+01      | 2.70E+01          | 9.00E+01     |   |
| SE2         | 11      | L10992-02 | 5/2/2006  | Cs-134   | -7.00E+00     | 2.40E+01          | 9.30E+01     |   |
| SE2         | 11      | L10992-02 | 5/2/2006  | Cs-137   | 1.32E+02      | 4.00E+01          | 1.20E+02     | * |
| SE2         | 11      | L10992-02 | 5/2/2006  | K-40     | 2.09E+04      | 1.20E+03          | 7.60E+02     | * |
| SE3         | 11      | L10992-03 | 5/2/2006  | AcTh-228 | 8.60E+02      | 1.10E+02          | 3.30E+02     | * |
| SE3         | 11      | L10992-03 | 5/2/2006  | Be-7     | 2.10E+02      | 4.60E+02          | 1.60E+03     |   |
| SE3         | 11      | L10992-03 | 5/2/2006  | Co-58    | 4.20E+01      | 4.70E+01          | 1.60E+02     |   |
| SE3         | 11      | L10992-03 | 5/2/2006  | Co-60    | 4.20E+01      | 2.50E+01          | 7.90E+01     |   |
| SE3         | 11      | L10992-03 | 5/2/2006  | Cs-134   | 3.00E+01      | 3.20E+01          | 1.00E+02     |   |
| SE3         | 11      | L10992-03 | 5/2/2006  | Cs-137   | 1.70E+02      | 4.00E+01          | 1.10E+02     | * |
| SE3         | 11      | L10992-03 | 5/2/2006  | K-40     | 1.66E+04      | 1.00E+03          | 7.50E+02     | * |
| SE1         | 21      | L11458-01 | 9/21/2006 | AcTh-228 | 8.33E+02      | 6.60E+01          | 1.90E+02     | * |
| SE1         | 21      | L11458-01 | 9/21/2006 | Be-7     | -1.00E+01     | 1.70E+02          | 6.00E+02     |   |
| SE1         | 21      | L11458-01 | 9/21/2006 | Co-58    | 2.30E+01      | 1.60E+01          | 5.40E+01     |   |
| SE1         | 21      | L11458-01 | 9/21/2006 | Co-60    | 9.00E+00      | 1.80E+01          | 6.20E+01     |   |
| SE1         | 21      | L11458-01 | 9/21/2006 | Cs-137   | 3.38E+02      | 3.10E+01          | 7.20E+01     | * |
| SE1         | 21      | L11458-01 | 9/21/2006 | K-40     | 1.80E+04      | 6.80E+02          | 5.70E+02     | * |
| SE2         | 21      | L11458-02 | 9/21/2006 | AcTh-228 | 9.49E+02      | 5.80E+01          | 2.00E+02     | * |
| SE2         | 21      | L11458-02 | 9/21/2006 | Be-7     | -2.80E+02     | 1.50E+02          | 5.50E+02     |   |
| SE2         | 21      | L11458-02 | 9/21/2006 | Co-58    | -9.00E+00     | 1.60E+01          | 5.90E+01     |   |
| SE2         | 21      | L11458-02 | 9/21/2006 | Co-60    | -3.50E+01     | 1.60E+01          | 6.70E+01     |   |
| SE2         | 21      | L11458-02 | 9/21/2006 | Cs-134   | 7.00E+00      | 1.10E+01          | 3.80E+01     |   |
| SE2         | 21      | L11458-02 | 9/21/2006 | Cs-137   | 3.99E+02      | 3.00E+01          | 6.20E+01     | * |
| SE2         | 21      | L11458-02 | 9/21/2006 | K-40     | 1.70E+04      | 6.40E+02          | 5.30E+02     | * |
| SE3         | 21      | L11458-03 | 9/21/2006 | AcTh-228 | 7.06E+02      | 5.70E+01          | 2.10E+02     | * |
| SE3         | 21      | L11458-03 | 9/21/2006 | Be-7     | -5.00E+01     | 1.30E+02          | 4.80E+02     |   |
| SE3         | 21      | L11458-03 | 9/21/2006 | Co-58    | 1.40E+01      | 1.40E+01          | 4.80E+01     |   |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)

+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

Yankee Nuclear Power Station  
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| SAMPLE<br>TYPE | STATION | LSN       | END<br>DATE | NUCLIDE | CONC<br>(pCi/kg) | STD.DEV.<br>(pCi/kg) | MDC<br>(pCi/kg) |
|----------------|---------|-----------|-------------|---------|------------------|----------------------|-----------------|
| SE3            | 21      | L11458-03 | 9/21/2006   | Co-60   | 1.80E+01         | 1.40E+01             | 4.80E+01        |
| SE3            | 21      | L11458-03 | 9/21/2006   | Cs-134  | 0.00E+00         | 1.20E+01             | 4.20E+01        |
| SE3            | 21      | L11458-03 | 9/21/2006   | Cs-137  | 3.67E+02         | 3.00E+01             | 6.90E+01 *      |
| SE3            | 21      | L11458-03 | 9/21/2006   | K-40    | 1.39E+04         | 5.80E+02             | 5.80E+02 *      |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
 + Minimum Detectable Concentration > Lower Limit of Detection Requirement

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| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE    | CONC (pCi/L) | STD.DEV. (pCi/L) | MDC (pCi/L) |
|-------------|---------|-----------|-----------|------------|--------------|------------------|-------------|
| WG          | 11      | L10451-04 | 1/25/2006 | Ba-140     | -9.00E-01    | 2.70E+00         | 1.00E+01    |
| WG          | 11      | L10451-04 | 1/25/2006 | Co-58      | -9.00E-01    | 1.90E+00         | 6.90E+00    |
| WG          | 11      | L10451-04 | 1/25/2006 | Co-60      | 2.00E-01     | 2.10E+00         | 7.80E+00    |
| WG          | 11      | L10451-04 | 1/25/2006 | Cs-134     | -2.30E+00    | 2.00E+00         | 7.80E+00    |
| WG          | 11      | L10451-04 | 1/25/2006 | Cs-137     | -2.80E+00    | 1.90E+00         | 7.20E+00    |
| WG          | 11      | L10451-04 | 1/25/2006 | Fe-59      | -1.40E+00    | 3.60E+00         | 1.40E+01    |
| WG          | 11      | L10451-04 | 1/25/2006 | GROSS BETA | 2.70E+00     | 1.00E+00         | 3.00E+00    |
| WG          | 11      | L10451-04 | 1/25/2006 | H-3        | 1.60E+02     | 1.00E+02         | 3.00E+02    |
| WG          | 11      | L10451-04 | 1/25/2006 | I-131      | 6.90E+00     | 3.70E+00         | 1.20E+01    |
| WG          | 11      | L10451-04 | 1/25/2006 | Mn-54      | -2.80E+00    | 1.90E+00         | 7.20E+00    |
| WG          | 11      | L10451-04 | 1/25/2006 | Zn-65      | 4.90E+00     | 6.40E+00         | 2.10E+01    |
| WG          | 11      | L10451-04 | 1/25/2006 | Zr-95      | -2.30E+00    | 3.60E+00         | 1.30E+01    |
| WG          | 11      | L10539-04 | 2/21/2006 | Ba-140     | -1.60E+00    | 4.20E+00         | 1.60E+01    |
| WG          | 11      | L10539-04 | 2/21/2006 | Co-58      | -3.60E+00    | 1.90E+00         | 7.90E+00    |
| WG          | 11      | L10539-04 | 2/21/2006 | Co-60      | -1.80E+00    | 2.10E+00         | 8.30E+00    |
| WG          | 11      | L10539-04 | 2/21/2006 | Cs-134     | 1.30E+00     | 1.90E+00         | 6.60E+00    |
| WG          | 11      | L10539-04 | 2/21/2006 | Cs-137     | 1.00E-01     | 1.60E+00         | 5.90E+00    |
| WG          | 11      | L10539-04 | 2/21/2006 | Fe-59      | -1.30E+00    | 3.90E+00         | 1.50E+01    |
| WG          | 11      | L10539-04 | 2/21/2006 | GROSS BETA | 3.50E+00     | 1.00E+00         | 3.00E+00 *  |
| WG          | 11      | L10539-04 | 2/21/2006 | H-3        | -7.00E+01    | 1.00E+02         | 3.10E+02    |
| WG          | 11      | L10539-04 | 2/21/2006 | I-131      | -7.00E+00    | 5.10E+00         | 1.90E+01    |
| WG          | 11      | L10539-04 | 2/21/2006 | Mn-54      | -2.60E+00    | 1.80E+00         | 7.20E+00    |
| WG          | 11      | L10539-04 | 2/21/2006 | Zn-65      | -5.60E+00    | 4.00E+00         | 1.60E+01    |
| WG          | 11      | L10539-04 | 2/21/2006 | Zr-95      | 2.20E+00     | 3.40E+00         | 1.20E+01    |
| WG          | 11      | L10664-04 | 3/28/2006 | Ba-140     | -9.00E-01    | 2.40E+00         | 9.30E+00    |
| WG          | 11      | L10664-04 | 3/28/2006 | Co-58      | -5.80E+00    | 2.00E+00         | 8.20E+00    |
| WG          | 11      | L10664-04 | 3/28/2006 | Co-60      | 6.00E-01     | 2.00E+00         | 7.30E+00    |
| WG          | 11      | L10664-04 | 3/28/2006 | Cs-134     | 1.40E+00     | 2.00E+00         | 7.10E+00    |
| WG          | 11      | L10664-04 | 3/28/2006 | Cs-137     | -2.00E+00    | 1.80E+00         | 6.90E+00    |
| WG          | 11      | L10664-04 | 3/28/2006 | Fe-59      | 2.30E+00     | 4.30E+00         | 1.50E+01    |
| WG          | 11      | L10664-04 | 3/28/2006 | GROSS BETA | 5.90E+00     | 1.20E+00         | 3.00E+00 *  |
| WG          | 11      | L10664-04 | 3/28/2006 | H-3        | 5.60E+01     | 8.80E+01         | 2.80E+02    |
| WG          | 11      | L10664-04 | 3/28/2006 | I-131      | 3.00E-01     | 3.20E+00         | 1.10E+01    |
| WG          | 11      | L10664-04 | 3/28/2006 | Mn-54      | -1.30E+00    | 1.90E+00         | 7.20E+00    |
| WG          | 11      | L10664-04 | 3/28/2006 | Zn-65      | -3.90E+00    | 8.50E+00         | 3.00E+01    |
| WG          | 11      | L10664-04 | 3/28/2006 | Zr-95      | -5.00E+00    | 3.70E+00         | 1.40E+01    |
| WG          | 11      | L11207-03 | 7/6/2006  | Ba-140     | -1.20E+00    | 6.90E+00         | 2.60E+01    |
| WG          | 11      | L11207-03 | 7/6/2006  | Co-58      | 1.50E+00     | 1.60E+00         | 5.70E+00    |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
+ Minimum Detectable Concentration > Lower Limit of Detection Requirement



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| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE    | CONC (pCi/L) | STD.DEV. (pCi/L) | MDC (pCi/L) |
|-------------|---------|-----------|-----------|------------|--------------|------------------|-------------|
| WG          | 11      | L11207-03 | 7/6/2006  | Co-60      | -1.70E+00    | 1.60E+00         | 6.30E+00    |
| WG          | 11      | L11207-03 | 7/6/2006  | Cs-134     | -4.00E-01    | 1.60E+00         | 5.80E+00    |
| WG          | 11      | L11207-03 | 7/6/2006  | Cs-137     | -1.80E+00    | 1.30E+00         | 4.90E+00    |
| WG          | 11      | L11207-03 | 7/6/2006  | Fe-59      | -3.00E+00    | 5.00E+00         | 1.90E+01    |
| WG          | 11      | L11207-03 | 7/6/2006  | GROSS BETA | 2.30E+00     | 1.00E+00         | 3.20E+00    |
| WG          | 11      | L11207-03 | 7/6/2006  | I-131      | 1.70E+01     | 1.20E+01         | 3.90E+01    |
| WG          | 11      | L11207-03 | 7/6/2006  | Mn-54      | -9.00E-01    | 1.70E+00         | 6.20E+00    |
| WG          | 11      | L11207-03 | 7/6/2006  | Zn-65      | -5.80E+00    | 3.60E+00         | 1.40E+01    |
| WG          | 11      | L11207-03 | 7/6/2006  | Zr-95      | -3.00E-01    | 3.60E+00         | 1.30E+01    |
| WG          | 11      | L11324-03 | 8/28/2006 | Ba-140     | -5.00E-01    | 3.30E+00         | 1.20E+01    |
| WG          | 11      | L11324-03 | 8/28/2006 | Co-58      | -2.70E+00    | 1.40E+00         | 5.90E+00    |
| WG          | 11      | L11324-03 | 8/28/2006 | Co-60      | 2.10E+00     | 1.70E+00         | 5.80E+00    |
| WG          | 11      | L11324-03 | 8/28/2006 | Cs-134     | 1.40E+00     | 1.70E+00         | 5.80E+00    |
| WG          | 11      | L11324-03 | 8/28/2006 | Cs-137     | 6.00E-01     | 1.60E+00         | 5.70E+00    |
| WG          | 11      | L11324-03 | 8/28/2006 | Fe-59      | 0.00E+00     | 3.20E+00         | 1.20E+01    |
| WG          | 11      | L11324-03 | 8/28/2006 | GROSS BETA | 2.85E+00     | 9.80E-01         | 2.90E+00    |
| WG          | 11      | L11324-03 | 8/28/2006 | H-3        | 8.00E+01     | 1.20E+02         | 3.80E+02    |
| WG          | 11      | L11324-03 | 8/28/2006 | I-131      | -1.90E+00    | 3.50E+00         | 1.30E+01    |
| WG          | 11      | L11324-03 | 8/28/2006 | Mn-54      | 0.00E+00     | 1.50E+00         | 5.60E+00    |
| WG          | 11      | L11324-03 | 8/28/2006 | Zn-65      | -6.10E+00    | 3.30E+00         | 1.40E+01    |
| WG          | 11      | L11324-03 | 8/28/2006 | Zr-95      | -1.50E+00    | 3.10E+00         | 1.10E+01    |
| WG          | 12      | L10451-05 | 1/25/2006 | Ba-140     | -2.60E+00    | 2.80E+00         | 1.20E+01    |
| WG          | 12      | L10451-05 | 1/25/2006 | Co-58      | -1.20E+00    | 1.90E+00         | 7.20E+00    |
| WG          | 12      | L10451-05 | 1/25/2006 | Co-60      | 4.10E+00     | 1.90E+00         | 5.60E+00    |
| WG          | 12      | L10451-05 | 1/25/2006 | Cs-134     | -6.00E-01    | 2.20E+00         | 8.20E+00    |
| WG          | 12      | L10451-05 | 1/25/2006 | Cs-137     | -5.00E-01    | 1.80E+00         | 6.90E+00    |
| WG          | 12      | L10451-05 | 1/25/2006 | Fe-59      | 9.00E-01     | 4.10E+00         | 1.50E+01    |
| WG          | 12      | L10451-05 | 1/25/2006 | GROSS BETA | 4.00E+00     | 1.10E+00         | 3.20E+00 *  |
| WG          | 12      | L10451-05 | 1/25/2006 | H-3        | 4.71E+03     | 1.20E+02         | 3.10E+02 *  |
| WG          | 12      | L10451-05 | 1/25/2006 | I-131      | 1.90E+00     | 3.40E+00         | 1.20E+01    |
| WG          | 12      | L10451-05 | 1/25/2006 | Mn-54      | 9.00E-01     | 1.90E+00         | 6.80E+00    |
| WG          | 12      | L10451-05 | 1/25/2006 | Zn-65      | -6.90E+00    | 4.70E+00         | 1.90E+01    |
| WG          | 12      | L10451-05 | 1/25/2006 | Zr-95      | 7.80E+00     | 3.60E+00         | 1.10E+01    |
| WG          | 12      | L10539-05 | 2/21/2006 | Ba-140     | -7.00E-01    | 4.40E+00         | 1.70E+01    |
| WG          | 12      | L10539-05 | 2/21/2006 | Co-58      | -2.40E+00    | 1.90E+00         | 7.60E+00    |
| WG          | 12      | L10539-05 | 2/21/2006 | Co-60      | 1.80E+00     | 2.10E+00         | 7.40E+00    |
| WG          | 12      | L10539-05 | 2/21/2006 | Cs-134     | -2.40E+00    | 2.10E+00         | 8.40E+00    |
| WG          | 12      | L10539-05 | 2/21/2006 | Cs-137     | 1.30E+00     | 2.10E+00         | 7.30E+00    |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

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| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE    | CONC (pCi/L) | STD.DEV. (pCi/L) | MDC (pCi/L) |   |
|-------------|---------|-----------|-----------|------------|--------------|------------------|-------------|---|
| WG          | 12      | L10539-05 | 2/21/2006 | Fe-59      | -3.00E+00    | 5.40E+00         | 2.00E+01    |   |
| WG          | 12      | L10539-05 | 2/21/2006 | GROSS BETA | 5.30E+00     | 1.20E+00         | 3.50E+00    | * |
| WG          | 12      | L10539-05 | 2/21/2006 | H-3        | 4.65E+03     | 1.20E+02         | 3.10E+02    | * |
| WG          | 12      | L10539-05 | 2/21/2006 | I-131      | -3.20E+00    | 5.00E+00         | 1.80E+01    |   |
| WG          | 12      | L10539-05 | 2/21/2006 | Mn-54      | -4.00E-01    | 2.00E+00         | 7.40E+00    |   |
| WG          | 12      | L10539-05 | 2/21/2006 | Zn-65      | 7.00E-01     | 3.90E+00         | 1.40E+01    |   |
| WG          | 12      | L10539-05 | 2/21/2006 | Zr-95      | -5.60E+00    | 3.50E+00         | 1.40E+01    |   |
| WG          | 12      | L10664-05 | 3/28/2006 | Ba-140     | -4.00E-01    | 3.10E+00         | 1.20E+01    |   |
| WG          | 12      | L10664-05 | 3/28/2006 | Co-58      | 0.00E+00     | 2.00E+00         | 7.20E+00    |   |
| WG          | 12      | L10664-05 | 3/28/2006 | Co-60      | 0.00E+00     | 1.80E+00         | 6.90E+00    |   |
| WG          | 12      | L10664-05 | 3/28/2006 | Cs-134     | 2.40E+00     | 2.50E+00         | 8.70E+00    |   |
| WG          | 12      | L10664-05 | 3/28/2006 | Cs-137     | -2.60E+00    | 1.90E+00         | 7.40E+00    |   |
| WG          | 12      | L10664-05 | 3/28/2006 | Fe-59      | 2.70E+00     | 4.10E+00         | 1.50E+01    |   |
| WG          | 12      | L10664-05 | 3/28/2006 | GROSS BETA | 6.50E+00     | 1.20E+00         | 3.00E+00    | * |
| WG          | 12      | L10664-05 | 3/28/2006 | H-3        | 4.35E+03     | 1.10E+02         | 2.80E+02    | * |
| WG          | 12      | L10664-05 | 3/28/2006 | I-131      | -7.00E-01    | 3.00E+00         | 1.10E+01    |   |
| WG          | 12      | L10664-05 | 3/28/2006 | Mn-54      | -2.00E-01    | 1.80E+00         | 6.70E+00    |   |
| WG          | 12      | L10664-05 | 3/28/2006 | Zn-65      | 1.40E+00     | 3.60E+00         | 1.30E+01    |   |
| WG          | 12      | L10664-05 | 3/28/2006 | Zr-95      | -3.00E-01    | 3.60E+00         | 1.30E+01    |   |
| WG          | 12      | L10792-03 | 4/25/2006 | Ba-140     | 0.00E+00     | 2.40E+00         | 9.20E+00    |   |
| WG          | 12      | L10792-03 | 4/25/2006 | Co-58      | 7.00E-01     | 1.50E+00         | 5.50E+00    |   |
| WG          | 12      | L10792-03 | 4/25/2006 | Co-60      | 2.50E+00     | 1.80E+00         | 5.90E+00    |   |
| WG          | 12      | L10792-03 | 4/25/2006 | Cs-134     | -5.00E-01    | 1.70E+00         | 6.30E+00    |   |
| WG          | 12      | L10792-03 | 4/25/2006 | Cs-137     | -4.00E-01    | 1.70E+00         | 6.20E+00    |   |
| WG          | 12      | L10792-03 | 4/25/2006 | Fe-59      | 5.70E+00     | 3.50E+00         | 1.10E+01    |   |
| WG          | 12      | L10792-03 | 4/25/2006 | GROSS BETA | 3.10E+00     | 1.00E+00         | 3.00E+00    | * |
| WG          | 12      | L10792-03 | 4/25/2006 | H-3        | 3.86E+03     | 1.10E+02         | 2.80E+02    | * |
| WG          | 12      | L10792-03 | 4/25/2006 | I-131      | -1.80E+00    | 2.70E+00         | 9.80E+00    |   |
| WG          | 12      | L10792-03 | 4/25/2006 | Mn-54      | -4.00E-01    | 1.70E+00         | 6.20E+00    |   |
| WG          | 12      | L10792-03 | 4/25/2006 | Zn-65      | -4.10E+00    | 3.60E+00         | 1.40E+01    |   |
| WG          | 12      | L10792-03 | 4/25/2006 | Zr-95      | -1.90E+00    | 3.10E+00         | 1.20E+01    |   |
| WG          | 12      | L10917-03 | 5/23/2006 | Ba-140     | -2.20E+00    | 3.30E+00         | 1.30E+01    |   |
| WG          | 12      | L10917-03 | 5/23/2006 | Co-58      | 9.00E-01     | 1.70E+00         | 6.10E+00    |   |
| WG          | 12      | L10917-03 | 5/23/2006 | Co-60      | 2.60E+00     | 2.00E+00         | 6.70E+00    |   |
| WG          | 12      | L10917-03 | 5/23/2006 | Cs-134     | 3.40E+00     | 1.80E+00         | 5.80E+00    |   |
| WG          | 12      | L10917-03 | 5/23/2006 | Cs-137     | -2.80E+00    | 1.90E+00         | 7.30E+00    |   |
| WG          | 12      | L10917-03 | 5/23/2006 | Fe-59      | -2.90E+00    | 4.00E+00         | 1.50E+01    |   |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

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| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE    | CONC (pCi/L) | STD.DEV. (pCi/L) | MDC (pCi/L) |   |
|-------------|---------|-----------|-----------|------------|--------------|------------------|-------------|---|
| WG          | 12      | L10917-03 | 5/23/2006 | GROSS BETA | 3.80E+00     | 1.10E+00         | 3.00E+00    | * |
| WG          | 12      | L10917-03 | 5/23/2006 | H-3        | 2.76E+03     | 1.40E+02         | 3.60E+02    | * |
| WG          | 12      | L10917-03 | 5/23/2006 | I-131      | 1.30E+00     | 2.90E+00         | 1.00E+01    |   |
| WG          | 12      | L10917-03 | 5/23/2006 | Mn-54      | 1.70E+00     | 1.60E+00         | 5.60E+00    |   |
| WG          | 12      | L10917-03 | 5/23/2006 | Zn-65      | -2.40E+00    | 4.10E+00         | 1.60E+01    |   |
| WG          | 12      | L10917-03 | 5/23/2006 | Zr-95      | 4.00E-01     | 3.00E+00         | 1.10E+01    |   |
| WG          | 12      | L11207-04 | 7/6/2006  | Ba-140     | -9.50E+00    | 8.80E+00         | 3.70E+01    |   |
| WG          | 12      | L11207-04 | 7/6/2006  | Co-58      | -3.70E+00    | 2.40E+00         | 9.60E+00    |   |
| WG          | 12      | L11207-04 | 7/6/2006  | Co-60      | -1.30E+00    | 2.30E+00         | 8.60E+00    |   |
| WG          | 12      | L11207-04 | 7/6/2006  | Cs-134     | 2.40E+00     | 2.20E+00         | 7.30E+00    |   |
| WG          | 12      | L11207-04 | 7/6/2006  | Cs-137     | -7.00E-01    | 1.90E+00         | 7.00E+00    |   |
| WG          | 12      | L11207-04 | 7/6/2006  | Fe-59      | -4.30E+00    | 5.20E+00         | 2.00E+01    |   |
| WG          | 12      | L11207-04 | 7/6/2006  | GROSS BETA | 3.50E+00     | 1.10E+00         | 3.10E+00    | * |
| WG          | 12      | L11207-04 | 7/6/2006  | H-3        | 1.89E+03     | 1.20E+02         | 3.40E+02    | * |
| WG          | 12      | L11207-04 | 7/6/2006  | I-131      | 2.20E+01     | 1.60E+01         | 5.50E+01    |   |
| WG          | 12      | L11207-04 | 7/6/2006  | Mn-54      | 1.20E+00     | 2.40E+00         | 8.50E+00    |   |
| WG          | 12      | L11207-04 | 7/6/2006  | Zn-65      | -1.01E+01    | 4.70E+00         | 2.00E+01    |   |
| WG          | 12      | L11207-04 | 7/6/2006  | Zr-95      | 9.00E-01     | 4.00E+00         | 1.40E+01    |   |
| WG          | 12      | L11224-03 | 8/1/2006  | Ba-140     | -2.90E+00    | 3.90E+00         | 1.60E+01    |   |
| WG          | 12      | L11224-03 | 8/1/2006  | Co-58      | 3.60E+00     | 1.90E+00         | 5.90E+00    |   |
| WG          | 12      | L11224-03 | 8/1/2006  | Co-60      | -2.80E+00    | 2.30E+00         | 9.50E+00    |   |
| WG          | 12      | L11224-03 | 8/1/2006  | Cs-134     | -3.60E+00    | 2.60E+00         | 1.00E+01    |   |
| WG          | 12      | L11224-03 | 8/1/2006  | Cs-137     | 0.00E+00     | 2.00E+00         | 7.50E+00    |   |
| WG          | 12      | L11224-03 | 8/1/2006  | Fe-59      | -2.50E+00    | 3.70E+00         | 1.50E+01    |   |
| WG          | 12      | L11224-03 | 8/1/2006  | GROSS BETA | 4.70E+00     | 1.00E+00         | 2.80E+00    | * |
| WG          | 12      | L11224-03 | 8/1/2006  | H-3        | 1.69E+03     | 1.20E+02         | 3.40E+02    | * |
| WG          | 12      | L11224-03 | 8/1/2006  | I-131      | -1.00E-01    | 3.50E+00         | 1.30E+01    |   |
| WG          | 12      | L11224-03 | 8/1/2006  | Mn-54      | -1.20E+00    | 1.90E+00         | 7.60E+00    |   |
| WG          | 12      | L11224-03 | 8/1/2006  | Zn-65      | 4.10E+00     | 5.00E+00         | 1.80E+01    |   |
| WG          | 12      | L11224-03 | 8/1/2006  | Zr-95      | 2.50E+00     | 3.80E+00         | 1.40E+01    |   |
| WG          | 12      | L11324-04 | 8/28/2006 | Ba-140     | 5.00E-01     | 2.70E+00         | 9.90E+00    |   |
| WG          | 12      | L11324-04 | 8/28/2006 | Co-58      | -5.00E-01    | 1.40E+00         | 5.30E+00    |   |
| WG          | 12      | L11324-04 | 8/28/2006 | Co-60      | 0.00E+00     | 1.80E+00         | 6.60E+00    |   |
| WG          | 12      | L11324-04 | 8/28/2006 | Cs-134     | -9.00E-01    | 1.50E+00         | 5.80E+00    |   |
| WG          | 12      | L11324-04 | 8/28/2006 | Cs-137     | -3.60E+00    | 1.70E+00         | 6.50E+00    |   |
| WG          | 12      | L11324-04 | 8/28/2006 | Fe-59      | 1.40E+00     | 3.50E+00         | 1.20E+01    |   |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

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| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE    | CONC (pCi/L) | STD.DEV. (pCi/L) | MDC (pCi/L) |
|-------------|---------|-----------|-----------|------------|--------------|------------------|-------------|
| WG          | 12      | L11324-04 | 8/28/2006 | GROSS BETA | 3.30E+00     | 1.10E+00         | 3.30E+00    |
| WG          | 12      | L11324-04 | 8/28/2006 | H-3        | 1.32E+03     | 1.30E+02         | 3.80E+02 *  |
| WG          | 12      | L11324-04 | 8/28/2006 | I-131      | -3.20E+00    | 3.30E+00         | 1.20E+01    |
| WG          | 12      | L11324-04 | 8/28/2006 | Mn-54      | -2.40E+00    | 1.80E+00         | 6.70E+00    |
| WG          | 12      | L11324-04 | 8/28/2006 | Zn-65      | -4.20E+00    | 3.10E+00         | 1.20E+01    |
| WG          | 12      | L11324-04 | 8/28/2006 | Zr-95      | 0.00E+00     | 2.80E+00         | 1.00E+01    |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
 + Minimum Detectable Concentration > Lower Limit of Detection Requirement

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| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE    | CONC (pCi/L) | STD.DEV. (pCi/L) | MDC (pCi/L) |
|-------------|---------|-----------|-----------|------------|--------------|------------------|-------------|
| WR          | 11      | L10451-01 | 1/25/2006 | Ba-140     | 0.00E+00     | 4.20E+00         | 1.60E+01    |
| WR          | 11      | L10451-01 | 1/25/2006 | Co-58      | 1.30E+00     | 1.80E+00         | 6.60E+00    |
| WR          | 11      | L10451-01 | 1/25/2006 | Co-60      | -4.10E+00    | 2.60E+00         | 1.10E+01    |
| WR          | 11      | L10451-01 | 1/25/2006 | Cs-134     | -1.50E+00    | 2.30E+00         | 9.20E+00    |
| WR          | 11      | L10451-01 | 1/25/2006 | Cs-137     | -3.00E-01    | 2.50E+00         | 9.20E+00    |
| WR          | 11      | L10451-01 | 1/25/2006 | Fe-59      | 2.00E+00     | 4.60E+00         | 1.70E+01    |
| WR          | 11      | L10451-01 | 1/25/2006 | GROSS BETA | 1.31E+00     | 8.50E-01         | 2.80E+00    |
| WR          | 11      | L10451-01 | 1/25/2006 | H-3        | 1.10E+02     | 4.50E+02         | 1.40E+03    |
| WR          | 11      | L10451-01 | 1/25/2006 | I-131      | 3.00E+00     | 4.30E+00         | 1.50E+01    |
| WR          | 11      | L10451-01 | 1/25/2006 | Mn-54      | 3.30E+00     | 2.50E+00         | 8.20E+00    |
| WR          | 11      | L10451-01 | 1/25/2006 | Zn-65      | 3.10E+00     | 5.40E+00         | 2.00E+01    |
| WR          | 11      | L10451-01 | 1/25/2006 | Zr-95      | -5.80E+00    | 3.10E+00         | 1.40E+01    |
| WR          | 11      | L10539-01 | 2/21/2006 | Ba-140     | 6.20E+00     | 4.60E+00         | 1.60E+01    |
| WR          | 11      | L10539-01 | 2/21/2006 | Co-58      | -1.00E-01    | 2.10E+00         | 7.90E+00    |
| WR          | 11      | L10539-01 | 2/21/2006 | Co-60      | -1.90E+00    | 2.00E+00         | 8.50E+00    |
| WR          | 11      | L10539-01 | 2/21/2006 | Cs-134     | -3.10E+00    | 2.00E+00         | 8.40E+00    |
| WR          | 11      | L10539-01 | 2/21/2006 | Cs-137     | 1.80E+00     | 2.00E+00         | 6.90E+00    |
| WR          | 11      | L10539-01 | 2/21/2006 | Fe-59      | -5.30E+00    | 4.70E+00         | 1.90E+01    |
| WR          | 11      | L10539-01 | 2/21/2006 | GROSS BETA | 1.81E+00     | 8.90E-01         | 2.90E+00    |
| WR          | 11      | L10539-01 | 2/21/2006 | H-3        | -1.00E+03    | 4.50E+02         | 1.40E+03    |
| WR          | 11      | L10539-01 | 2/21/2006 | I-131      | 3.70E+00     | 5.90E+00         | 2.00E+01    |
| WR          | 11      | L10539-01 | 2/21/2006 | Mn-54      | 3.00E-01     | 2.30E+00         | 8.30E+00    |
| WR          | 11      | L10539-01 | 2/21/2006 | Zn-65      | -8.00E-01    | 5.00E+00         | 1.90E+01    |
| WR          | 11      | L10539-01 | 2/21/2006 | Zr-95      | 2.30E+00     | 3.90E+00         | 1.40E+01    |
| WR          | 11      | L10664-01 | 3/28/2006 | Ba-140     | 4.30E+00     | 3.20E+00         | 1.10E+01    |
| WR          | 11      | L10664-01 | 3/28/2006 | Co-58      | -3.10E+00    | 1.80E+00         | 7.40E+00    |
| WR          | 11      | L10664-01 | 3/28/2006 | Co-60      | 1.20E+00     | 2.60E+00         | 9.30E+00    |
| WR          | 11      | L10664-01 | 3/28/2006 | Cs-134     | -1.50E+00    | 2.00E+00         | 7.70E+00    |
| WR          | 11      | L10664-01 | 3/28/2006 | Cs-137     | 1.40E+00     | 2.00E+00         | 6.90E+00    |
| WR          | 11      | L10664-01 | 3/28/2006 | Fe-59      | -7.00E-01    | 3.90E+00         | 1.50E+01    |
| WR          | 11      | L10664-01 | 3/28/2006 | GROSS BETA | 7.10E-01     | 8.10E-01         | 2.80E+00    |
| WR          | 11      | L10664-01 | 3/28/2006 | H-3        | -3.10E+02    | 4.60E+02         | 1.40E+03    |
| WR          | 11      | L10664-01 | 3/28/2006 | I-131      | 6.40E+00     | 3.10E+00         | 1.00E+01    |
| WR          | 11      | L10664-01 | 3/28/2006 | Mn-54      | 5.00E-01     | 2.00E+00         | 7.00E+00    |
| WR          | 11      | L10664-01 | 3/28/2006 | Zn-65      | 4.10E+00     | 4.80E+00         | 1.60E+01    |
| WR          | 11      | L10664-01 | 3/28/2006 | Zr-95      | 2.10E+00     | 3.30E+00         | 1.20E+01    |
| WR          | 11      | L10752-01 | 3/28/2006 | H-3        | -7.30E+02    | 4.30E+02         | 1.30E+03    |
| WR          | 11      | L10792-01 | 4/25/2006 | Ba-140     | 1.40E+00     | 3.40E+00         | 1.30E+01    |

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Summary of 2006 Data

| SAMPLE<br>TYPE | STATION | LSN       | END<br>DATE | NUCLIDE    | CONC<br>(pCi/L) | STD.DEV.<br>(pCi/L) | MDC<br>(pCi/L) |
|----------------|---------|-----------|-------------|------------|-----------------|---------------------|----------------|
| WR             | 11      | L10792-01 | 4/25/2006   | Co-58      | -4.00E-01       | 2.10E+00            | 8.10E+00       |
| WR             | 11      | L10792-01 | 4/25/2006   | Co-60      | 2.70E+00        | 2.00E+00            | 6.70E+00       |
| WR             | 11      | L10792-01 | 4/25/2006   | Cs-134     | 3.90E+00        | 2.30E+00            | 7.40E+00       |
| WR             | 11      | L10792-01 | 4/25/2006   | Cs-137     | -2.70E+00       | 2.00E+00            | 8.10E+00       |
| WR             | 11      | L10792-01 | 4/25/2006   | Fe-59      | -4.60E+00       | 4.10E+00            | 1.70E+01       |
| WR             | 11      | L10792-01 | 4/25/2006   | GROSS BETA | 3.80E+00        | 1.00E+00            | 3.00E+00 *     |
| WR             | 11      | L10792-01 | 4/25/2006   | I-131      | 2.40E+00        | 3.10E+00            | 1.10E+01       |
| WR             | 11      | L10792-01 | 4/25/2006   | Mn-54      | -1.40E+00       | 2.00E+00            | 7.80E+00       |
| WR             | 11      | L10792-01 | 4/25/2006   | Zn-65      | 3.20E+00        | 4.50E+00            | 1.60E+01       |
| WR             | 11      | L10792-01 | 4/25/2006   | Zr-95      | 6.00E-01        | 4.10E+00            | 1.50E+01       |
| WR             | 11      | L10917-01 | 5/23/2006   | Ba-140     | 4.00E-01        | 2.00E+00            | 7.60E+00       |
| WR             | 11      | L10917-01 | 5/23/2006   | Co-58      | 1.20E+00        | 1.30E+00            | 4.60E+00       |
| WR             | 11      | L10917-01 | 5/23/2006   | Co-60      | 8.00E-01        | 1.70E+00            | 6.10E+00       |
| WR             | 11      | L10917-01 | 5/23/2006   | Cs-134     | -1.00E+00       | 1.50E+00            | 5.80E+00       |
| WR             | 11      | L10917-01 | 5/23/2006   | Cs-137     | 6.00E-01        | 1.60E+00            | 5.80E+00       |
| WR             | 11      | L10917-01 | 5/23/2006   | Fe-59      | -1.30E+00       | 3.00E+00            | 1.10E+01       |
| WR             | 11      | L10917-01 | 5/23/2006   | GROSS BETA | 1.38E+00        | 8.90E-01            | 2.90E+00       |
| WR             | 11      | L10917-01 | 5/23/2006   | I-131      | 3.90E+00        | 2.40E+00            | 8.00E+00       |
| WR             | 11      | L10917-01 | 5/23/2006   | Mn-54      | -1.10E+00       | 1.60E+00            | 6.00E+00       |
| WR             | 11      | L10917-01 | 5/23/2006   | Zn-65      | -1.80E+00       | 3.30E+00            | 1.20E+01       |
| WR             | 11      | L10917-01 | 5/23/2006   | Zr-95      | -4.10E+00       | 2.50E+00            | 9.80E+00       |
| WR             | 11      | L11207-01 | 7/6/2006    | Ba-140     | 1.36E+01        | 7.60E+00            | 2.40E+01       |
| WR             | 11      | L11207-01 | 7/6/2006    | Co-58      | -1.30E+00       | 1.80E+00            | 6.70E+00       |
| WR             | 11      | L11207-01 | 7/6/2006    | Co-60      | 8.00E-01        | 1.80E+00            | 6.20E+00       |
| WR             | 11      | L11207-01 | 7/6/2006    | Cs-134     | 2.00E-01        | 1.70E+00            | 5.90E+00       |
| WR             | 11      | L11207-01 | 7/6/2006    | Cs-137     | 1.70E+00        | 1.60E+00            | 5.30E+00       |
| WR             | 11      | L11207-01 | 7/6/2006    | Fe-59      | 3.30E+00        | 4.40E+00            | 1.50E+01       |
| WR             | 11      | L11207-01 | 7/6/2006    | GROSS BETA | 1.34E+00        | 8.30E-01            | 2.70E+00       |
| WR             | 11      | L11207-01 | 7/6/2006    | I-131      | -1.30E+01       | 1.20E+01            | 4.50E+01       |
| WR             | 11      | L11207-01 | 7/6/2006    | Mn-54      | -3.40E+00       | 1.60E+00            | 6.20E+00       |
| WR             | 11      | L11207-01 | 7/6/2006    | Zn-65      | 4.00E-01        | 3.40E+00            | 1.20E+01       |
| WR             | 11      | L11207-01 | 7/6/2006    | Zr-95      | -2.90E+00       | 3.60E+00            | 1.30E+01       |
| WR             | 11      | L11210-01 | 7/6/2006    | H-3        | -1.04E+03       | 4.70E+02            | 1.50E+03       |
| WR             | 11      | L11224-01 | 8/1/2006    | Ba-140     | 0.00E+00        | 3.60E+00            | 1.40E+01       |
| WR             | 11      | L11224-01 | 8/1/2006    | Co-58      | -2.80E+00       | 2.10E+00            | 8.60E+00       |
| WR             | 11      | L11224-01 | 8/1/2006    | Co-60      | 2.20E+00        | 2.40E+00            | 8.30E+00       |
| WR             | 11      | L11224-01 | 8/1/2006    | Cs-134     | 3.20E+00        | 2.40E+00            | 8.10E+00       |
| WR             | 11      | L11224-01 | 8/1/2006    | Cs-137     | 3.40E+00        | 1.80E+00            | 5.80E+00       |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

Yankee Nuclear Power Station  
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Summary of 2006 Data

| SAMPLE<br>TYPE | STATION | LSN       | END<br>DATE | NUCLIDE    | CONC<br>(pCi/L) | STD.DEV.<br>(pCi/L) | MDC<br>(pCi/L) |
|----------------|---------|-----------|-------------|------------|-----------------|---------------------|----------------|
| WR             | 11      | L11224-01 | 8/1/2006    | Fe-59      | 1.70E+00        | 4.00E+00            | 1.50E+01       |
| WR             | 11      | L11224-01 | 8/1/2006    | GROSS BETA | 9.80E-01        | 8.70E-01            | 2.80E+00       |
| WR             | 11      | L11224-01 | 8/1/2006    | I-131      | -1.20E+00       | 3.40E+00            | 1.30E+01       |
| WR             | 11      | L11224-01 | 8/1/2006    | Mn-54      | 1.80E+00        | 1.80E+00            | 6.40E+00       |
| WR             | 11      | L11224-01 | 8/1/2006    | Zn-65      | -7.70E+00       | 4.70E+00            | 2.00E+01       |
| WR             | 11      | L11224-01 | 8/1/2006    | Zr-95      | -3.40E+00       | 3.60E+00            | 1.40E+01       |
| WR             | 11      | L11324-01 | 8/28/2006   | Ba-140     | -3.30E+00       | 2.70E+00            | 1.20E+01       |
| WR             | 11      | L11324-01 | 8/28/2006   | Co-58      | -3.00E-01       | 2.00E+00            | 7.30E+00       |
| WR             | 11      | L11324-01 | 8/28/2006   | Co-60      | -1.30E+00       | 1.90E+00            | 7.30E+00       |
| WR             | 11      | L11324-01 | 8/28/2006   | Cs-134     | 3.00E-01        | 1.90E+00            | 6.80E+00       |
| WR             | 11      | L11324-01 | 8/28/2006   | Cs-137     | -1.50E+00       | 1.70E+00            | 6.50E+00       |
| WR             | 11      | L11324-01 | 8/28/2006   | Fe-59      | -1.60E+00       | 4.10E+00            | 1.50E+01       |
| WR             | 11      | L11324-01 | 8/28/2006   | GROSS BETA | 5.90E-01        | 8.30E-01            | 2.90E+00       |
| WR             | 11      | L11324-01 | 8/28/2006   | I-131      | -2.80E+00       | 3.50E+00            | 1.30E+01       |
| WR             | 11      | L11324-01 | 8/28/2006   | Mn-54      | -1.20E+00       | 1.80E+00            | 6.90E+00       |
| WR             | 11      | L11324-01 | 8/28/2006   | Zn-65      | -8.90E+00       | 4.00E+00            | 1.70E+01       |
| WR             | 11      | L11324-01 | 8/28/2006   | Zr-95      | 3.10E+00        | 2.90E+00            | 1.00E+01       |
| WR             | 11      | L11563-01 | 8/28/2006   | H-3        | 3.50E+02        | 4.70E+02            | 1.40E+03       |
| WR             | 11      | L11567-01 | 10/10/2006  | Ba-140     | 1.50E+00        | 6.00E+00            | 2.10E+01       |
| WR             | 11      | L11567-01 | 10/10/2006  | Co-58      | 7.00E-01        | 1.30E+00            | 4.60E+00       |
| WR             | 11      | L11567-01 | 10/10/2006  | Co-60      | -1.30E+00       | 1.10E+00            | 4.20E+00       |
| WR             | 11      | L11567-01 | 10/10/2006  | Cs-134     | -8.00E-01       | 1.20E+00            | 4.40E+00       |
| WR             | 11      | L11567-01 | 10/10/2006  | Cs-137     | -2.00E-01       | 1.00E+00            | 3.70E+00       |
| WR             | 11      | L11567-01 | 10/10/2006  | Fe-59      | -2.50E+00       | 3.50E+00            | 1.30E+01       |
| WR             | 11      | L11567-01 | 10/10/2006  | H-3        | -3.70E+02       | 4.60E+02            | 1.40E+03       |
| WR             | 11      | L11567-01 | 10/10/2006  | I-131      | 3.00E+00        | 1.80E+01            | 6.20E+01       |
| WR             | 11      | L11567-01 | 10/10/2006  | Mn-54      | -2.90E+00       | 1.10E+00            | 4.30E+00       |
| WR             | 11      | L11567-01 | 10/10/2006  | Zn-65      | -9.00E-01       | 2.60E+00            | 9.10E+00       |
| WR             | 11      | L11567-01 | 10/10/2006  | Zr-95      | 2.20E+00        | 2.40E+00            | 8.20E+00       |
| WR             | 11      | L11638-01 | 10/10/2006  | GROSS BETA | 1.87E+00        | 9.10E-01            | 2.90E+00       |
| WR             | 21      | L10451-02 | 1/25/2006   | Ba-140     | -3.60E+00       | 2.60E+00            | 1.20E+01       |
| WR             | 21      | L10451-02 | 1/25/2006   | Co-58      | -1.90E+00       | 1.70E+00            | 6.90E+00       |
| WR             | 21      | L10451-02 | 1/25/2006   | Co-60      | 3.00E-01        | 1.60E+00            | 6.20E+00       |
| WR             | 21      | L10451-02 | 1/25/2006   | Cs-134     | -1.20E+00       | 2.10E+00            | 8.00E+00       |
| WR             | 21      | L10451-02 | 1/25/2006   | Cs-137     | 4.00E-01        | 1.70E+00            | 6.20E+00       |
| WR             | 21      | L10451-02 | 1/25/2006   | Fe-59      | 3.00E+00        | 3.70E+00            | 1.30E+01       |
| WR             | 21      | L10451-02 | 1/25/2006   | GROSS BETA | 2.59E+00        | 9.90E-01            | 3.00E+00       |
| WR             | 21      | L10451-02 | 1/25/2006   | H-3        | 5.00E+01        | 4.50E+02            | 1.40E+03       |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

Yankee Nuclear Power Station  
Radiological Environmental Monitoring Program  
Summary of 2006 Data

| SAMPLE<br>TYPE | STATION | LSN       | END<br>DATE | NUCLIDE    | CONC<br>(pCi/L) | STD.DEV.<br>(pCi/L) | MDC<br>(pCi/L) |
|----------------|---------|-----------|-------------|------------|-----------------|---------------------|----------------|
| WR             | 21      | L10451-02 | 1/25/2006   | I-131      | 9.00E-01        | 2.70E+00            | 9.50E+00       |
| WR             | 21      | L10451-02 | 1/25/2006   | Mn-54      | 2.00E-01        | 1.70E+00            | 6.20E+00       |
| WR             | 21      | L10451-02 | 1/25/2006   | Zn-65      | -5.50E+00       | 4.20E+00            | 1.70E+01       |
| WR             | 21      | L10451-02 | 1/25/2006   | Zr-95      | 1.60E+00        | 3.00E+00            | 1.10E+01       |
| WR             | 21      | L10539-02 | 2/21/2006   | Ba-140     | -5.50E+00       | 3.90E+00            | 1.70E+01       |
| WR             | 21      | L10539-02 | 2/21/2006   | Co-58      | -4.00E+00       | 2.20E+00            | 8.90E+00       |
| WR             | 21      | L10539-02 | 2/21/2006   | Co-60      | 1.60E+00        | 2.40E+00            | 8.40E+00       |
| WR             | 21      | L10539-02 | 2/21/2006   | Cs-134     | -3.00E-01       | 2.40E+00            | 8.70E+00       |
| WR             | 21      | L10539-02 | 2/21/2006   | Cs-137     | -2.50E+00       | 2.30E+00            | 9.00E+00       |
| WR             | 21      | L10539-02 | 2/21/2006   | Fe-59      | 3.20E+00        | 5.10E+00            | 1.80E+01       |
| WR             | 21      | L10539-02 | 2/21/2006   | GROSS BETA | 1.05E+00        | 8.80E-01            | 3.00E+00       |
| WR             | 21      | L10539-02 | 2/21/2006   | H-3        | -9.60E+02       | 4.50E+02            | 1.40E+03       |
| WR             | 21      | L10539-02 | 2/21/2006   | I-131      | 2.70E+00        | 6.10E+00            | 2.10E+01       |
| WR             | 21      | L10539-02 | 2/21/2006   | Mn-54      | -1.50E+00       | 2.00E+00            | 7.70E+00       |
| WR             | 21      | L10539-02 | 2/21/2006   | Zn-65      | -1.32E+01       | 4.40E+00            | 2.00E+01       |
| WR             | 21      | L10539-02 | 2/21/2006   | Zr-95      | 2.90E+00        | 3.90E+00            | 1.40E+01       |
| WR             | 21      | L10664-02 | 3/28/2006   | Ba-140     | -3.90E+00       | 3.60E+00            | 1.50E+01       |
| WR             | 21      | L10664-02 | 3/28/2006   | Co-58      | -1.10E+00       | 2.30E+00            | 8.80E+00       |
| WR             | 21      | L10664-02 | 3/28/2006   | Co-60      | 4.00E-01        | 2.10E+00            | 8.00E+00       |
| WR             | 21      | L10664-02 | 3/28/2006   | Cs-134     | 1.20E+00        | 2.60E+00            | 9.20E+00       |
| WR             | 21      | L10664-02 | 3/28/2006   | Cs-137     | -6.00E-01       | 1.80E+00            | 7.10E+00       |
| WR             | 21      | L10664-02 | 3/28/2006   | Fe-59      | 8.20E+00        | 4.20E+00            | 1.30E+01       |
| WR             | 21      | L10664-02 | 3/28/2006   | GROSS BETA | 1.57E+00        | 8.60E-01            | 2.70E+00       |
| WR             | 21      | L10664-02 | 3/28/2006   | H-3        | -8.60E+02       | 4.50E+02            | 1.40E+03       |
| WR             | 21      | L10664-02 | 3/28/2006   | I-131      | 2.60E+00        | 3.00E+00            | 1.00E+01       |
| WR             | 21      | L10664-02 | 3/28/2006   | Mn-54      | 2.40E+00        | 2.30E+00            | 8.00E+00       |
| WR             | 21      | L10664-02 | 3/28/2006   | Zn-65      | -1.70E+00       | 3.40E+00            | 1.40E+01       |
| WR             | 21      | L10664-02 | 3/28/2006   | Zr-95      | 7.00E-01        | 3.80E+00            | 1.40E+01       |
| WR             | 21      | L10752-02 | 3/28/2006   | H-3        | -1.00E+01       | 4.40E+02            | 1.30E+03       |
| WR             | 21      | L10792-02 | 4/25/2006   | Ba-140     | 1.30E+00        | 2.80E+00            | 1.10E+01       |
| WR             | 21      | L10792-02 | 4/25/2006   | Co-58      | -1.00E+00       | 2.10E+00            | 8.20E+00       |
| WR             | 21      | L10792-02 | 4/25/2006   | Co-60      | 1.60E+00        | 2.20E+00            | 7.80E+00       |
| WR             | 21      | L10792-02 | 4/25/2006   | Cs-134     | -1.80E+00       | 2.30E+00            | 9.10E+00       |
| WR             | 21      | L10792-02 | 4/25/2006   | Cs-137     | 1.90E+00        | 1.80E+00            | 6.20E+00       |
| WR             | 21      | L10792-02 | 4/25/2006   | Fe-59      | -3.20E+00       | 3.20E+00            | 1.40E+01       |
| WR             | 21      | L10792-02 | 4/25/2006   | GROSS BETA | 2.31E+00        | 8.80E-01            | 2.70E+00       |
| WR             | 21      | L10792-02 | 4/25/2006   | I-131      | -3.60E+00       | 3.00E+00            | 1.20E+01       |
| WR             | 21      | L10792-02 | 4/25/2006   | Mn-54      | 1.00E+00        | 1.80E+00            | 6.50E+00       |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
+ Minimum Detectable Concentration > Lower Limit of Detection Requirement



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| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE    | CONC (pCi/L) | STD.DEV. (pCi/L) | MDC (pCi/L) |
|-------------|---------|-----------|-----------|------------|--------------|------------------|-------------|
| WR          | 21      | L10792-02 | 4/25/2006 | Zn-65      | 1.00E+00     | 4.70E+00         | 1.70E+01    |
| WR          | 21      | L10792-02 | 4/25/2006 | Zr-95      | 5.70E+00     | 3.10E+00         | 1.00E+01    |
| WR          | 21      | L10917-02 | 5/23/2006 | Ba-140     | -1.10E+00    | 2.60E+00         | 1.10E+01    |
| WR          | 21      | L10917-02 | 5/23/2006 | Co-58      | 4.00E-01     | 1.80E+00         | 6.50E+00    |
| WR          | 21      | L10917-02 | 5/23/2006 | Co-60      | 6.00E-01     | 2.00E+00         | 7.30E+00    |
| WR          | 21      | L10917-02 | 5/23/2006 | Cs-134     | -7.00E-01    | 1.90E+00         | 7.00E+00    |
| WR          | 21      | L10917-02 | 5/23/2006 | Cs-137     | -1.80E+00    | 1.60E+00         | 6.10E+00    |
| WR          | 21      | L10917-02 | 5/23/2006 | Fe-59      | -6.00E-01    | 3.60E+00         | 1.40E+01    |
| WR          | 21      | L10917-02 | 5/23/2006 | GROSS BETA | 2.78E+00     | 9.10E-01         | 2.60E+00 *  |
| WR          | 21      | L10917-02 | 5/23/2006 | I-131      | 2.20E+00     | 2.40E+00         | 8.20E+00    |
| WR          | 21      | L10917-02 | 5/23/2006 | Mn-54      | 2.50E+00     | 1.60E+00         | 5.40E+00    |
| WR          | 21      | L10917-02 | 5/23/2006 | Zn-65      | -4.90E+00    | 3.70E+00         | 1.50E+01    |
| WR          | 21      | L10917-02 | 5/23/2006 | Zr-95      | 6.10E+00     | 2.90E+00         | 9.30E+00    |
| WR          | 21      | L11207-02 | 7/6/2006  | Ba-140     | 1.48E+01     | 7.20E+00         | 2.20E+01    |
| WR          | 21      | L11207-02 | 7/6/2006  | Co-58      | -2.60E+00    | 1.60E+00         | 6.60E+00    |
| WR          | 21      | L11207-02 | 7/6/2006  | Co-60      | -1.40E+00    | 1.70E+00         | 6.60E+00    |
| WR          | 21      | L11207-02 | 7/6/2006  | Cs-134     | 1.90E+00     | 1.70E+00         | 5.60E+00    |
| WR          | 21      | L11207-02 | 7/6/2006  | Cs-137     | -1.50E+00    | 1.80E+00         | 6.50E+00    |
| WR          | 21      | L11207-02 | 7/6/2006  | Fe-59      | 2.50E+00     | 4.40E+00         | 1.60E+01    |
| WR          | 21      | L11207-02 | 7/6/2006  | GROSS BETA | -3.10E-01    | 7.80E-01         | 2.90E+00    |
| WR          | 21      | L11207-02 | 7/6/2006  | I-131      | -6.00E+00    | 1.40E+01         | 5.00E+01    |
| WR          | 21      | L11207-02 | 7/6/2006  | Mn-54      | 1.50E+00     | 1.60E+00         | 5.60E+00    |
| WR          | 21      | L11207-02 | 7/6/2006  | Zn-65      | -5.00E-01    | 3.60E+00         | 1.30E+01    |
| WR          | 21      | L11207-02 | 7/6/2006  | Zr-95      | 2.80E+00     | 3.10E+00         | 1.10E+01    |
| WR          | 21      | L11210-02 | 7/6/2006  | H-3        | -2.50E+02    | 4.80E+02         | 1.50E+03    |
| WR          | 21      | L11224-02 | 8/1/2006  | Ba-140     | -8.60E+00    | 3.90E+00         | 1.80E+01    |
| WR          | 21      | L11224-02 | 8/1/2006  | Co-58      | -2.60E+00    | 1.70E+00         | 7.50E+00    |
| WR          | 21      | L11224-02 | 8/1/2006  | Co-60      | 1.30E+00     | 2.20E+00         | 7.90E+00    |
| WR          | 21      | L11224-02 | 8/1/2006  | Cs-134     | 1.80E+00     | 2.00E+00         | 7.00E+00    |
| WR          | 21      | L11224-02 | 8/1/2006  | Cs-137     | -2.40E+00    | 2.50E+00         | 9.40E+00    |
| WR          | 21      | L11224-02 | 8/1/2006  | Fe-59      | 4.20E+00     | 4.10E+00         | 1.40E+01    |
| WR          | 21      | L11224-02 | 8/1/2006  | GROSS BETA | 1.90E+00     | 8.50E-01         | 2.70E+00    |
| WR          | 21      | L11224-02 | 8/1/2006  | I-131      | 5.00E+00     | 4.00E+00         | 1.30E+01    |
| WR          | 21      | L11224-02 | 8/1/2006  | Mn-54      | 1.40E+00     | 1.90E+00         | 6.70E+00    |
| WR          | 21      | L11224-02 | 8/1/2006  | Zn-65      | -9.40E+00    | 5.20E+00         | 2.20E+01    |
| WR          | 21      | L11224-02 | 8/1/2006  | Zr-95      | -2.10E+00    | 3.10E+00         | 1.20E+01    |
| WR          | 21      | L11324-02 | 8/28/2006 | Ba-140     | -2.10E+00    | 2.80E+00         | 1.10E+01    |
| WR          | 21      | L11324-02 | 8/28/2006 | Co-58      | -3.50E+00    | 1.80E+00         | 7.40E+00    |

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Summary of 2006 Data

| SAMPLE TYPE | STATION | LSN       | END DATE   | NUCLIDE    | CONC (pCi/L) | STD.DEV. (pCi/L) | MDC (pCi/L) |
|-------------|---------|-----------|------------|------------|--------------|------------------|-------------|
| WR          | 21      | L11324-02 | 8/28/2006  | Co-60      | 2.00E-01     | 1.90E+00         | 6.90E+00    |
| WR          | 21      | L11324-02 | 8/28/2006  | Cs-134     | -2.00E-01    | 1.90E+00         | 6.90E+00    |
| WR          | 21      | L11324-02 | 8/28/2006  | Cs-137     | 1.40E+00     | 1.60E+00         | 5.40E+00    |
| WR          | 21      | L11324-02 | 8/28/2006  | Fe-59      | -5.30E+00    | 3.50E+00         | 1.40E+01    |
| WR          | 21      | L11324-02 | 8/28/2006  | GROSS BETA | 5.70E-01     | 8.00E-01         | 2.70E+00    |
| WR          | 21      | L11324-02 | 8/28/2006  | I-131      | 3.10E+00     | 3.50E+00         | 1.20E+01    |
| WR          | 21      | L11324-02 | 8/28/2006  | Mn-54      | 1.80E+00     | 1.80E+00         | 6.20E+00    |
| WR          | 21      | L11324-02 | 8/28/2006  | Zn-65      | -2.40E+00    | 3.50E+00         | 1.40E+01    |
| WR          | 21      | L11324-02 | 8/28/2006  | Zr-95      | -4.00E-01    | 3.50E+00         | 1.30E+01    |
| WR          | 21      | L11563-02 | 8/28/2006  | H-3        | 6.00E+01     | 4.80E+02         | 1.40E+03    |
| WR          | 21      | L11567-02 | 10/10/2006 | Ba-140     | -1.45E+01    | 6.00E+00         | 2.40E+01    |
| WR          | 21      | L11567-02 | 10/10/2006 | Co-58      | -3.00E-01    | 1.20E+00         | 4.30E+00    |
| WR          | 21      | L11567-02 | 10/10/2006 | Co-60      | -4.00E-01    | 1.20E+00         | 4.20E+00    |
| WR          | 21      | L11567-02 | 10/10/2006 | Cs-134     | -1.00E+00    | 1.10E+00         | 4.10E+00    |
| WR          | 21      | L11567-02 | 10/10/2006 | Cs-137     | 2.01E+00     | 9.30E-01         | 3.00E+00    |
| WR          | 21      | L11567-02 | 10/10/2006 | Fe-59      | -5.00E-01    | 3.20E+00         | 1.10E+01    |
| WR          | 21      | L11567-02 | 10/10/2006 | GROSS BETA | 1.20E+00     | 8.40E-01         | 2.80E+00    |
| WR          | 21      | L11567-02 | 10/10/2006 | H-3        | 1.00E+02     | 4.80E+02         | 1.40E+03    |
| WR          | 21      | L11567-02 | 10/10/2006 | I-131      | -1.50E+01    | 1.60E+01         | 5.70E+01    |
| WR          | 21      | L11567-02 | 10/10/2006 | Mn-54      | -1.70E+00    | 1.10E+00         | 4.00E+00    |
| WR          | 21      | L11567-02 | 10/10/2006 | Zn-65      | -5.90E+00    | 2.60E+00         | 9.70E+00    |
| WR          | 21      | L11567-02 | 10/10/2006 | Zr-95      | -2.40E+00    | 2.20E+00         | 8.10E+00    |
| WR          | 31      | L10451-03 | 1/25/2006  | Ba-140     | -2.30E+00    | 3.20E+00         | 1.30E+01    |
| WR          | 31      | L10451-03 | 1/25/2006  | Co-58      | -1.30E+00    | 1.70E+00         | 6.50E+00    |
| WR          | 31      | L10451-03 | 1/25/2006  | Co-60      | -3.70E+00    | 2.50E+00         | 9.70E+00    |
| WR          | 31      | L10451-03 | 1/25/2006  | Cs-134     | 3.20E+00     | 2.00E+00         | 6.50E+00    |
| WR          | 31      | L10451-03 | 1/25/2006  | Cs-137     | -1.40E+00    | 1.70E+00         | 6.50E+00    |
| WR          | 31      | L10451-03 | 1/25/2006  | Fe-59      | 3.60E+00     | 3.50E+00         | 1.20E+01    |
| WR          | 31      | L10451-03 | 1/25/2006  | GROSS BETA | 1.51E+00     | 9.30E-01         | 3.00E+00    |
| WR          | 31      | L10451-03 | 1/25/2006  | H-3        | -3.60E+02    | 4.40E+02         | 1.40E+03    |
| WR          | 31      | L10451-03 | 1/25/2006  | I-131      | 0.00E+00     | 3.00E+00         | 1.10E+01    |
| WR          | 31      | L10451-03 | 1/25/2006  | Mn-54      | -2.00E+00    | 1.50E+00         | 6.00E+00    |
| WR          | 31      | L10451-03 | 1/25/2006  | Zn-65      | -5.50E+00    | 4.30E+00         | 1.70E+01    |
| WR          | 31      | L10451-03 | 1/25/2006  | Zr-95      | 3.10E+00     | 3.00E+00         | 1.00E+01    |
| WR          | 31      | L10539-03 | 2/21/2006  | Ba-140     | 1.60E+00     | 4.20E+00         | 1.50E+01    |
| WR          | 31      | L10539-03 | 2/21/2006  | Co-58      | 2.80E+00     | 2.00E+00         | 6.80E+00    |
| WR          | 31      | L10539-03 | 2/21/2006  | Co-60      | -2.20E+00    | 1.70E+00         | 7.10E+00    |
| WR          | 31      | L10539-03 | 2/21/2006  | Cs-134     | -2.40E+00    | 1.90E+00         | 7.50E+00    |

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| SAMPLE<br>TYPE | STATION | LSN       | END<br>DATE | NUCLIDE    | CONC<br>(pCi/L) | STD.DEV.<br>(pCi/L) | MDC<br>(pCi/L) |
|----------------|---------|-----------|-------------|------------|-----------------|---------------------|----------------|
| WR             | 31      | L10539-03 | 2/21/2006   | Cs-137     | 1.30E+00        | 1.70E+00            | 6.00E+00       |
| WR             | 31      | L10539-03 | 2/21/2006   | Fe-59      | 6.60E+00        | 3.90E+00            | 1.30E+01       |
| WR             | 31      | L10539-03 | 2/21/2006   | GROSS BETA | 1.95E+00        | 8.50E-01            | 2.70E+00       |
| WR             | 31      | L10539-03 | 2/21/2006   | H-3        | -3.60E+02       | 4.60E+02            | 1.40E+03       |
| WR             | 31      | L10539-03 | 2/21/2006   | I-131      | -1.50E+00       | 4.50E+00            | 1.60E+01       |
| WR             | 31      | L10539-03 | 2/21/2006   | Mn-54      | -2.00E+00       | 1.80E+00            | 6.90E+00       |
| WR             | 31      | L10539-03 | 2/21/2006   | Zn-65      | -1.20E+00       | 3.80E+00            | 1.50E+01       |
| WR             | 31      | L10539-03 | 2/21/2006   | Zr-95      | 2.00E+00        | 3.80E+00            | 1.30E+01       |
| WR             | 31      | L10664-03 | 3/28/2006   | Ba-140     | 1.50E+00        | 3.10E+00            | 1.20E+01       |
| WR             | 31      | L10664-03 | 3/28/2006   | Co-58      | -1.00E-01       | 2.00E+00            | 7.60E+00       |
| WR             | 31      | L10664-03 | 3/28/2006   | Co-60      | 7.00E-01        | 2.40E+00            | 8.90E+00       |
| WR             | 31      | L10664-03 | 3/28/2006   | Cs-134     | -1.70E+00       | 2.50E+00            | 9.70E+00       |
| WR             | 31      | L10664-03 | 3/28/2006   | Cs-137     | 1.30E+00        | 2.10E+00            | 7.30E+00       |
| WR             | 31      | L10664-03 | 3/28/2006   | Fe-59      | -3.30E+00       | 4.30E+00            | 1.70E+01       |
| WR             | 31      | L10664-03 | 3/28/2006   | GROSS BETA | 2.27E+00        | 9.60E-01            | 3.00E+00       |
| WR             | 31      | L10664-03 | 3/28/2006   | H-3        | -3.90E+02       | 4.50E+02            | 1.40E+03       |
| WR             | 31      | L10664-03 | 3/28/2006   | I-131      | -3.50E+00       | 3.40E+00            | 1.30E+01       |
| WR             | 31      | L10664-03 | 3/28/2006   | Mn-54      | -1.10E+00       | 1.80E+00            | 7.20E+00       |
| WR             | 31      | L10664-03 | 3/28/2006   | Zn-65      | -5.10E+00       | 5.20E+00            | 2.10E+01       |
| WR             | 31      | L10664-03 | 3/28/2006   | Zr-95      | -3.30E+00       | 3.50E+00            | 1.40E+01       |
| WR             | 31      | L10752-03 | 3/28/2006   | H-3        | -5.50E+02       | 4.40E+02            | 1.40E+03       |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
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Summary of 2006 Data

| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE    | CONC (pCi/L) | STD.DEV. (pCi/L) | MDC (pCi/L) |
|-------------|---------|-----------|-----------|------------|--------------|------------------|-------------|
| WW          | 52      | L10451-07 | 1/25/2006 | Ba-140     | 8.00E-01     | 2.80E+00         | 1.10E+01    |
| WW          | 52      | L10451-07 | 1/25/2006 | Co-58      | -1.80E+00    | 1.90E+00         | 7.50E+00    |
| WW          | 52      | L10451-07 | 1/25/2006 | Co-60      | 2.10E+00     | 1.70E+00         | 5.60E+00    |
| WW          | 52      | L10451-07 | 1/25/2006 | Cs-134     | 3.60E+00     | 2.30E+00         | 7.60E+00    |
| WW          | 52      | L10451-07 | 1/25/2006 | Cs-137     | -3.80E+00    | 2.40E+00         | 9.40E+00    |
| WW          | 52      | L10451-07 | 1/25/2006 | Fe-59      | 1.50E+00     | 3.00E+00         | 1.10E+01    |
| WW          | 52      | L10451-07 | 1/25/2006 | GROSS BETA | 3.70E+00     | 1.10E+00         | 3.30E+00 *  |
| WW          | 52      | L10451-07 | 1/25/2006 | H-3        | 1.50E+02     | 4.60E+02         | 1.40E+03    |
| WW          | 52      | L10451-07 | 1/25/2006 | I-131      | -2.20E+00    | 3.90E+00         | 1.40E+01    |
| WW          | 52      | L10451-07 | 1/25/2006 | Mn-54      | -3.00E-01    | 1.90E+00         | 7.20E+00    |
| WW          | 52      | L10451-07 | 1/25/2006 | Zn-65      | -4.50E+00    | 4.50E+00         | 1.80E+01    |
| WW          | 52      | L10451-07 | 1/25/2006 | Zr-95      | -4.10E+00    | 3.50E+00         | 1.40E+01    |
| WW          | 52      | L10539-06 | 2/21/2006 | Ba-140     | -2.00E-01    | 3.80E+00         | 1.50E+01    |
| WW          | 52      | L10539-06 | 2/21/2006 | Co-58      | -2.80E+00    | 2.20E+00         | 8.80E+00    |
| WW          | 52      | L10539-06 | 2/21/2006 | Co-60      | -1.20E+00    | 2.20E+00         | 8.50E+00    |
| WW          | 52      | L10539-06 | 2/21/2006 | Cs-134     | 3.30E+00     | 2.40E+00         | 7.80E+00    |
| WW          | 52      | L10539-06 | 2/21/2006 | Cs-137     | 1.60E+00     | 1.90E+00         | 6.50E+00    |
| WW          | 52      | L10539-06 | 2/21/2006 | Fe-59      | 8.00E-01     | 4.70E+00         | 1.70E+01    |
| WW          | 52      | L10539-06 | 2/21/2006 | GROSS BETA | 3.20E+00     | 1.00E+00         | 3.00E+00 *  |
| WW          | 52      | L10539-06 | 2/21/2006 | H-3        | 2.00E+02     | 1.10E+02         | 3.10E+02    |
| WW          | 52      | L10539-06 | 2/21/2006 | I-131      | 5.30E+00     | 5.90E+00         | 2.00E+01    |
| WW          | 52      | L10539-06 | 2/21/2006 | Mn-54      | -3.90E+00    | 2.10E+00         | 8.50E+00    |
| WW          | 52      | L10539-06 | 2/21/2006 | Zn-65      | -8.30E+00    | 4.20E+00         | 1.80E+01    |
| WW          | 52      | L10539-06 | 2/21/2006 | Zr-95      | 4.20E+00     | 3.60E+00         | 1.20E+01    |
| WW          | 52      | L10664-06 | 3/28/2006 | Ba-140     | -2.30E+00    | 2.80E+00         | 1.20E+01    |
| WW          | 52      | L10664-06 | 3/28/2006 | Co-58      | 1.50E+00     | 2.20E+00         | 7.70E+00    |
| WW          | 52      | L10664-06 | 3/28/2006 | Co-60      | 8.00E-01     | 2.30E+00         | 8.60E+00    |
| WW          | 52      | L10664-06 | 3/28/2006 | Cs-134     | -4.80E+00    | 2.80E+00         | 1.10E+01    |
| WW          | 52      | L10664-06 | 3/28/2006 | Cs-137     | -3.00E-01    | 2.50E+00         | 9.30E+00    |
| WW          | 52      | L10664-06 | 3/28/2006 | Fe-59      | 4.00E-01     | 4.60E+00         | 1.70E+01    |
| WW          | 52      | L10664-06 | 3/28/2006 | GROSS BETA | 2.84E+00     | 9.60E-01         | 2.90E+00    |
| WW          | 52      | L10664-06 | 3/28/2006 | H-3        | 5.03E+02     | 9.00E+01         | 2.70E+02 *  |
| WW          | 52      | L10664-06 | 3/28/2006 | I-131      | 1.30E+00     | 3.90E+00         | 1.40E+01    |
| WW          | 52      | L10664-06 | 3/28/2006 | Mn-54      | -1.40E+00    | 2.10E+00         | 8.40E+00    |
| WW          | 52      | L10664-06 | 3/28/2006 | Zn-65      | -9.70E+00    | 6.00E+00         | 2.40E+01    |
| WW          | 52      | L10664-06 | 3/28/2006 | Zr-95      | 1.90E+00     | 3.90E+00         | 1.40E+01    |
| WW          | 52      | L10792-04 | 4/25/2006 | Ba-140     | 3.40E+00     | 2.60E+00         | 8.60E+00    |
| WW          | 52      | L10792-04 | 4/25/2006 | Co-58      | -1.00E+00    | 1.90E+00         | 6.90E+00    |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

Yankee Nuclear Power Station  
Radiological Environmental Monitoring Program  
Summary of 2006 Data

| SAMPLE TYPE | STATION | LSN       | END DATE  | NUCLIDE    | CONC (pCi/L) | STD.DEV. (pCi/L) | MDC (pCi/L) |
|-------------|---------|-----------|-----------|------------|--------------|------------------|-------------|
| WW          | 52      | L10792-04 | 4/25/2006 | Co-60      | 9.00E-01     | 1.50E+00         | 5.40E+00    |
| WW          | 52      | L10792-04 | 4/25/2006 | Cs-134     | -3.60E+00    | 1.90E+00         | 7.60E+00    |
| WW          | 52      | L10792-04 | 4/25/2006 | Cs-137     | -5.00E-01    | 1.70E+00         | 6.30E+00    |
| WW          | 52      | L10792-04 | 4/25/2006 | Fe-59      | 2.90E+00     | 3.20E+00         | 1.10E+01    |
| WW          | 52      | L10792-04 | 4/25/2006 | GROSS BETA | 5.40E+00     | 1.20E+00         | 3.10E+00 *  |
| WW          | 52      | L10792-04 | 4/25/2006 | H-3        | -3.00E+02    | 4.50E+02         | 1.30E+03    |
| WW          | 52      | L10792-04 | 4/25/2006 | I-131      | -7.00E-01    | 2.80E+00         | 1.00E+01    |
| WW          | 52      | L10792-04 | 4/25/2006 | Mn-54      | -3.60E+00    | 1.80E+00         | 7.10E+00    |
| WW          | 52      | L10792-04 | 4/25/2006 | Zn-65      | 1.13E+01     | 7.20E+00         | 2.40E+01    |
| WW          | 52      | L10792-04 | 4/25/2006 | Zr-95      | -7.00E-01    | 3.20E+00         | 1.20E+01    |
| WW          | 52      | L10917-04 | 5/23/2006 | Ba-140     | -6.00E-01    | 2.70E+00         | 1.10E+01    |
| WW          | 52      | L10917-04 | 5/23/2006 | Co-58      | -9.00E-01    | 1.90E+00         | 7.20E+00    |
| WW          | 52      | L10917-04 | 5/23/2006 | Co-60      | -2.90E+00    | 1.70E+00         | 7.60E+00    |
| WW          | 52      | L10917-04 | 5/23/2006 | Cs-134     | 1.60E+00     | 2.10E+00         | 7.20E+00    |
| WW          | 52      | L10917-04 | 5/23/2006 | Cs-137     | -5.00E-01    | 1.80E+00         | 6.80E+00    |
| WW          | 52      | L10917-04 | 5/23/2006 | Fe-59      | -4.10E+00    | 3.60E+00         | 1.50E+01    |
| WW          | 52      | L10917-04 | 5/23/2006 | GROSS BETA | 2.02E+00     | 8.90E-01         | 2.80E+00    |
| WW          | 52      | L10917-04 | 5/23/2006 | H-3        | 2.00E+01     | 2.80E+02         | 8.50E+02    |
| WW          | 52      | L10917-04 | 5/23/2006 | I-131      | 9.00E-01     | 2.70E+00         | 9.60E+00    |
| WW          | 52      | L10917-04 | 5/23/2006 | Mn-54      | 2.30E+00     | 1.90E+00         | 6.40E+00    |
| WW          | 52      | L10917-04 | 5/23/2006 | Zn-65      | -7.00E-01    | 4.30E+00         | 1.60E+01    |
| WW          | 52      | L10917-04 | 5/23/2006 | Zr-95      | 3.00E-01     | 3.40E+00         | 1.30E+01    |
| WW          | 52      | L11224-06 | 8/1/2006  | Ba-140     | -2.70E+00    | 3.10E+00         | 1.40E+01    |
| WW          | 52      | L11224-06 | 8/1/2006  | Co-58      | -3.10E+00    | 1.90E+00         | 7.70E+00    |
| WW          | 52      | L11224-06 | 8/1/2006  | Co-60      | 1.00E-01     | 2.30E+00         | 8.50E+00    |
| WW          | 52      | L11224-06 | 8/1/2006  | Cs-134     | 3.20E+00     | 1.80E+00         | 5.90E+00    |
| WW          | 52      | L11224-06 | 8/1/2006  | Cs-137     | 1.80E+00     | 1.80E+00         | 6.20E+00    |
| WW          | 52      | L11224-06 | 8/1/2006  | Fe-59      | -3.00E+00    | 3.80E+00         | 1.50E+01    |
| WW          | 52      | L11224-06 | 8/1/2006  | GROSS BETA | 6.80E+00     | 1.20E+00         | 2.90E+00 *  |
| WW          | 52      | L11224-06 | 8/1/2006  | H-3        | 2.30E+02     | 4.70E+02         | 1.50E+03    |
| WW          | 52      | L11224-06 | 8/1/2006  | I-131      | 2.30E+00     | 4.70E+00         | 1.60E+01    |
| WW          | 52      | L11224-06 | 8/1/2006  | Mn-54      | -9.00E-01    | 1.90E+00         | 7.10E+00    |
| WW          | 52      | L11224-06 | 8/1/2006  | Zn-65      | 7.00E-01     | 4.40E+00         | 1.60E+01    |
| WW          | 52      | L11224-06 | 8/1/2006  | Zr-95      | -2.20E+00    | 3.50E+00         | 1.30E+01    |
| WW          | 52      | L11324-06 | 8/28/2006 | Ba-140     | 3.50E+00     | 2.00E+00         | 6.50E+00    |
| WW          | 52      | L11324-06 | 8/28/2006 | Co-58      | -1.00E-01    | 1.10E+00         | 3.70E+00    |
| WW          | 52      | L11324-06 | 8/28/2006 | Co-60      | -5.40E-01    | 9.40E-01         | 3.40E+00    |
| WW          | 52      | L11324-06 | 8/28/2006 | Cs-134     | -1.00E-01    | 1.10E+00         | 3.90E+00    |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)  
+ Minimum Detectable Concentration > Lower Limit of Detection Requirement

Yankee Nuclear Power Station  
 Radiological Environmental Monitoring Program  
 Summary of 2006 Data

| SAMPLE<br>TYPE | STATION | LSN       | END<br>DATE | NUCLIDE    | CONC<br>(pCi/L) | STD.DEV.<br>(pCi/L) | MDC<br>(pCi/L) |
|----------------|---------|-----------|-------------|------------|-----------------|---------------------|----------------|
| WW             | 52      | L11324-06 | 8/28/2006   | Cs-137     | -1.80E-01       | 9.20E-01            | 3.30E+00       |
| WW             | 52      | L11324-06 | 8/28/2006   | Fe-59      | -2.00E+00       | 2.20E+00            | 8.10E+00       |
| WW             | 52      | L11324-06 | 8/28/2006   | GROSS BETA | 5.80E+00        | 1.10E+00            | 2.80E+00 *     |
| WW             | 52      | L11324-06 | 8/28/2006   | H-3        | 3.20E+02        | 4.00E+02            | 1.20E+03       |
| WW             | 52      | L11324-06 | 8/28/2006   | I-131      | 3.00E+00        | 3.00E+00            | 1.00E+01       |
| WW             | 52      | L11324-06 | 8/28/2006   | Mn-54      | -1.24E+00       | 9.20E-01            | 3.40E+00       |
| WW             | 52      | L11324-06 | 8/28/2006   | Zn-65      | -1.90E+00       | 2.10E+00            | 7.50E+00       |
| WW             | 52      | L11324-06 | 8/28/2006   | Zr-95      | 3.70E+00        | 1.90E+00            | 6.30E+00       |

\* Radioactivity detected in sample (i.e., concentration > 3 X standard deviation)

+ Minimum Detectable Concentration > Lower Limit of Detection Requirement