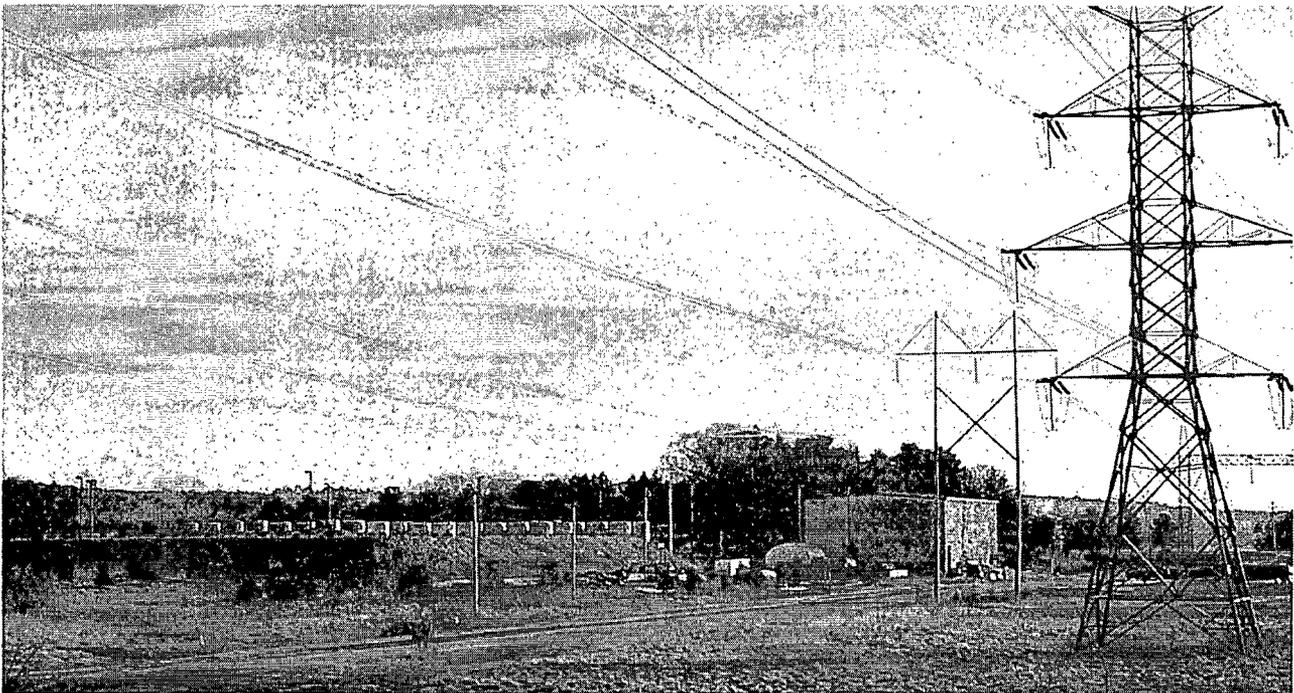


**MAINE YANKEE
INDEPENDENT SPENT FUEL STORAGE INSTALLATION
License No. DPR-36**

**ANNUAL RADIOACTIVE EFFLUENT
RELEASE REPORT**

January - December 2009



March 2010
Prepared by:

Radiological Safety & Control Services
91 Portsmouth Avenue
Stratham, NH 03885-2468

IE48

NMSS

EXECUTIVE SUMMARY

Tables 1 and 2 summarize the quantity of radioactive gaseous and liquid effluents, respectively, for each quarter of 2009. There were no gaseous or liquid releases in 2009. Table 3 summarizes waste shipped off-site for disposal for each half year of 2009. There was no waste shipped in 2009.

Appendices A and B indicate the status of reportable items per the requirements of the Off-site Dose Calculation Manual (ODCM). There were no reportable items in 2009.

Table 1A

MAINE YANKEE ISFSI
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2009
Gaseous Effluents-Summation of All Releases

Nuclides Released	Unit	1st Quarter	2nd Quarter	Est. Total Error, %
A. Fission and Activation Gases				
1. Total Release	Ci	N/A*	N/A*	N/A*
2. Average release rate for period	μCi/sec	N/A*	N/A*	
3. Percent of regulatory limit	%	N/A*	N/A*	
B. Iodines				
1. Total Iodine-131	Ci	N/A*	N/A*	N/A*
2. Average release rate for period	μCi/sec	N/A*	N/A*	
3. Percent of regulatory limit	%	N/A*	N/A*	
C. Particulates				
1. Particulates with T-1/2 > 8 days	Ci	N/A*	N/A*	N/A*
2. Average release rate for period	μCi/sec	N/A*	N/A*	
3. Percent of regulatory limit	%	N/A*	N/A*	
4. Gross alpha radioactivity	Ci	N/A*	N/A*	
D. Tritium				
1. Total release	Ci	N/A*	N/A*	N/A*
2. Average release rate for period	μCi/sec	N/A*	N/A*	
3. Percent of regulatory limit	%	N/A*	N/A*	

N/A*= Not Applicable

There are no gaseous effluents associated with the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI)

Table 1A

MAINE YANKEE ISFSI
 Effluent and Waste Disposal Annual Report
 Third and Fourth Quarters, 2009
 Gaseous Effluents-Summation of All Releases

Nuclides Released	Unit	3rd Quarter	4th Quarter	Est. Total Error, %
A. Fission and Activation Gases				
1. Total Release	Ci	N/A*	N/A*	N/A*
2. Average release rate for period	μCi/sec	N/A*	N/A*	
3. Percent of regulatory limit	%	N/A*	N/A*	
B. Iodines				
1. Total Iodine-131	Ci	N/A*	N/A*	N/A*
2. Average release rate for period	μCi/sec	N/A*	N/A*	
3. Percent of regulatory limit	%	N/A*	N/A*	
C. Particulates				
1. Particulates with T-1/2 > 8 days	Ci	N/A*	N/A*	N/A*
2. Average release rate for period	μCi/sec	N/A*	N/A*	
3. Percent of regulatory limit	%	N/A*	N/A*	
4. Gross alpha radioactivity	Ci	N/A*	N/A*	
D. Tritium				
1. Total release	Ci	N/A*	N/A*	N/A*
2. Average release rate for period	μCi/sec	N/A*	N/A*	
3. Percent of regulatory limit	%	N/A*	N/A*	

N/A*= Not Applicable

There are no gaseous effluents associated with the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI)

Table 1B

MAINE YANKEE ISFSI
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2009
Gaseous Effluents-Elevated Releases

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1. Fission Gases					
Krypton-85	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-85m	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-87	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-88	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-133	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-135	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-135m	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-138	Ci	N/A*	N/A*	N/A*	N/A*
Unidentified	Ci	N/A*	N/A*	N/A*	N/A*
Total for period	Ci	N/A*	N/A*	N/A*	N/A*
2. Iodines					
Iodine-131	Ci	N/A*	N/A*	N/A*	N/A*
Iodine-133	Ci	N/A*	N/A*	N/A*	N/A*
Iodine-135	Ci	N/A*	N/A*	N/A*	N/A*
Total for period	Ci	N/A*	N/A*	N/A*	N/A*
3. Particulates					
Strontium-89	Ci	N/A*	N/A*	N/A*	N/A*
Strontium-90	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-134	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-137	Ci	N/A*	N/A*	N/A*	N/A*
Cobalt-60	Ci	N/A*	N/A*	N/A*	N/A*
Barium-Lanthanum-140	Ci	N/A*	N/A*	N/A*	N/A*
Others-					
Plutonium-238	Ci	N/A*	N/A*	N/A*	N/A*
Curium-243,244	Ci	N/A*	N/A*	N/A*	N/A*
Uranium-234	Ci	N/A*	N/A*	N/A*	N/A*
Uranium-238	Ci	N/A*	N/A*	N/A*	N/A*
Thorium-232	Ci	N/A*	N/A*	N/A*	N/A*
Radium-226	Ci	N/A*	N/A*	N/A*	N/A*

N/A*= Not Applicable

There are no gaseous effluents associated with the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI)

Table 1B

MAINE YANKEE ISFSI
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2009
Gaseous Effluents-Elevated Releases

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
1. Fission Gases					
Krypton-85	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-85m	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-87	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-88	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-133	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-135	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-135m	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-138	Ci	N/A*	N/A*	N/A*	N/A*
Unidentified	Ci	N/A*	N/A*	N/A*	N/A*
Total for period	Ci	N/A*	N/A*	N/A*	N/A*
2. Iodines					
Iodine-131	Ci	N/A*	N/A*	N/A*	N/A*
Iodine-133	Ci	N/A*	N/A*	N/A*	N/A*
Iodine-135	Ci	N/A*	N/A*	N/A*	N/A*
Total for period	Ci	N/A*	N/A*	N/A*	N/A*
3. Particulates					
Strontium-89	Ci	N/A*	N/A*	N/A*	N/A*
Strontium-90	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-134	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-137	Ci	N/A*	N/A*	N/A*	N/A*
Cobalt-60	Ci	N/A*	N/A*	N/A*	N/A*
Barium-Lanthanum-140	Ci	N/A*	N/A*	N/A*	N/A*
Others-					
Plutonium-238	Ci	N/A*	N/A*	N/A*	N/A*
Curium-243,244	Ci	N/A*	N/A*	N/A*	N/A*
Uranium-234	Ci	N/A*	N/A*	N/A*	N/A*
Uranium-238	Ci	N/A*	N/A*	N/A*	N/A*
Thorium-232	Ci	N/A*	N/A*	N/A*	N/A*
Radium-226	Ci	N/A*	N/A*	N/A*	N/A*

N/A*= Not Applicable

There are no gaseous effluents associated with the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI)

Table 1C

MAINE YANKEE ISFSI
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2009
Gaseous Effluents-Ground Level Releases

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1. Fission Gases					
Krypton-85	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-85m	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-87	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-88	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-133	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-135	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-135m	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-138	Ci	N/A*	N/A*	N/A*	N/A*
Unidentified	Ci	N/A*	N/A*	N/A*	N/A*
Total for period	Ci	N/A*	N/A*	N/A*	N/A*
2. Iodines					
Iodine-131	Ci	N/A*	N/A*	N/A*	N/A*
Iodine-133	Ci	N/A*	N/A*	N/A*	N/A*
Iodine-135	Ci	N/A*	N/A*	N/A*	N/A*
Total for period	Ci	N/A*	N/A*	N/A*	N/A*
3. Particulates					
Strontium-89	Ci	N/A*	N/A*	N/A*	N/A*
Strontium-90	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-134	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-137	Ci	N/A*	N/A*	N/A*	N/A*
Cobalt-60	Ci	N/A*	N/A*	N/A*	N/A*
Barium-Lanthanum-140	Ci	N/A*	N/A*	N/A*	N/A*
Others-					
Plutonium-238	Ci	N/A*	N/A*	N/A*	N/A*
Curium-243,244	Ci	N/A*	N/A*	N/A*	N/A*
Uranium-234	Ci	N/A*	N/A*	N/A*	N/A*
Uranium-238	Ci	N/A*	N/A*	N/A*	N/A*
Thorium-232	Ci	N/A*	N/A*	N/A*	N/A*
Radium-226	Ci	N/A*	N/A*	N/A*	N/A*

N/A*= Not Applicable

There are no gaseous effluents associated with the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI)

Table 1C

MAINE YANKEE ISFSI
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2009
Gaseous Effluents-Ground Level Releases

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
1. Fission Gases					
Krypton-85	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-85m	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-87	Ci	N/A*	N/A*	N/A*	N/A*
Krypton-88	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-133	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-135	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-135m	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-138	Ci	N/A*	N/A*	N/A*	N/A*
Unidentified	Ci	N/A*	N/A*	N/A*	N/A*
Total for period	Ci	N/A*	N/A*	N/A*	N/A*
2. Iodines					
Iodine-131	Ci	N/A*	N/A*	N/A*	N/A*
Iodine-133	Ci	N/A*	N/A*	N/A*	N/A*
Iodine-135	Ci	N/A*	N/A*	N/A*	N/A*
Total for period	Ci	N/A*	N/A*	N/A*	N/A*
3. Particulates					
Strontium-89	Ci	N/A*	N/A*	N/A*	N/A*
Strontium-90	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-134	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-137	Ci	N/A*	N/A*	N/A*	N/A*
Cobalt-60	Ci	N/A*	N/A*	N/A*	N/A*
Barium-Lanthanum-140	Ci	N/A*	N/A*	N/A*	N/A*
Others-					
Plutonium-238	Ci	N/A*	N/A*	N/A*	N/A*
Curium-243,244	Ci	N/A*	N/A*	N/A*	N/A*
Uranium-234	Ci	N/A*	N/A*	N/A*	N/A*
Uranium-238	Ci	N/A*	N/A*	N/A*	N/A*
Thorium-232	Ci	N/A*	N/A*	N/A*	N/A*
Radium-226	Ci	N/A*	N/A*	N/A*	N/A*

N/A*= Not Applicable

There are no gaseous effluents associated with the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI)

Table 2A

MAINE YANKEE ISFSI
 Effluent and Waste Disposal Annual Report
 First and Second Quarters, 2009
 Liquid Effluents-Summation of All Releases

Nuclides Released	Unit	1st Quarter	2nd Quarter	Est. Total Error, %
A. Fission and Activation Products				
1. Total Release (not including tritium, gases, alpha)	Ci	N/A*	N/A*	N/A*
2. Average diluted concentration during period	µCi/ml	N/A*	N/A*	
3. Percent of applicable limit	%	N/A*	N/A*	
B. Tritium				
1. Total Release	Ci	N/A*	N/A*	N/A*
2. Average diluted concentration during period	µCi/ml	N/A*	N/A*	
3. Percent of applicable limit	%	N/A*	N/A*	
C. Dissolved and Entrained Gases				
1. Total Release	Ci	N/A*	N/A*	N/A*
2. Average diluted concentration during period	µCi/ml	N/A*	N/A*	
3. Percent of applicable limit	%	N/A*	N/A*	
D. Gross Alpha Radioactivity				
1. Total release	Ci	N/A*	N/A*	N/A*
2. Average diluted concentration during period	µCi/ml	N/A*	N/A*	
E. Volume of Waste Released (prior to dilution)	Liters	N/A*	N/A*	
F. Volume of Dilution Water Used During Period	Liters	N/A*	N/A*	

N/A*= Not Applicable

There are no liquid effluents associated with the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI)

Table 2A

MAINE YANKEE ISFSI
 Effluent and Waste Disposal Annual Report
 Third and Fourth Quarters, 2009
 Liquid Effluents-Summation of All Releases

Nuclides Released	Unit	3rd Quarter	4th Quarter	Est. Total Error, %
A. Fission and Activation Products				
1. Total Release (not including tritium, gases, alpha)	Ci	N/A*	N/A*	N/A*
2. Average diluted concentration during period	µCi/ml	N/A*	N/A*	
3. Percent of applicable limit	%	N/A*	N/A*	
B. Tritium				
1. Total Release	Ci	N/A*	N/A*	N/A*
2. Average diluted concentration during period	µCi/ml	N/A*	N/A*	
3. Percent of applicable limit	%	N/A*	N/A*	
C. Dissolved and Entrained Gases				
1. Total Release	Ci	N/A*	N/A*	N/A*
2. Average diluted concentration during period	µCi/ml	N/A*	N/A*	
3. Percent of applicable limit	%	N/A*	N/A*	
D. Gross Alpha Radioactivity				
1. Total release	Ci	N/A*	N/A*	N/A*
2. Average diluted concentration during period	µCi/ml	N/A*	N/A*	
E. Volume of Waste Released (prior to dilution)	Liters	N/A*	N/A*	
F. Volume of Dilution Water Used During Period	Liters	N/A*	N/A*	

N/A*= Not Applicable

There are no liquid effluents associated with the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI)

Table 2B

MAINE YANKEE ISFSI
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2009
Liquid Effluents

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
Strontium-89	Ci	N/A*	N/A*	N/A*	N/A*
Strontium-90	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-134	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-137	Ci	N/A*	N/A*	N/A*	N/A*
Iodine-131	Ci	N/A*	N/A*	N/A*	N/A*
Cobalt-58	Ci	N/A*	N/A*	N/A*	N/A*
Cobalt-60	Ci	N/A*	N/A*	N/A*	N/A*
Iron-59	Ci	N/A*	N/A*	N/A*	N/A*
Zinc-65	Ci	N/A*	N/A*	N/A*	N/A*
Manganese-54	Ci	N/A*	N/A*	N/A*	N/A*
Chromium-51	Ci	N/A*	N/A*	N/A*	N/A*
Zirconium-Niobium-95	Ci	N/A*	N/A*	N/A*	N/A*
Molybdenum-99	Ci	N/A*	N/A*	N/A*	N/A*
Technetium-99m	Ci	N/A*	N/A*	N/A*	N/A*
Barium-Lanthanum-140	Ci	N/A*	N/A*	N/A*	N/A*
Cerium-141	Ci	N/A*	N/A*	N/A*	N/A*
Others- Iron-55	Ci	N/A*	N/A*	N/A*	N/A*
Antimony-125	Ci	N/A*	N/A*	N/A*	N/A*
Unidentified	Ci	N/A*	N/A*	N/A*	N/A*
Total for period (above)	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-133	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-135	Ci	N/A*	N/A*	N/A*	N/A*

N/A*= Not Applicable

There are no liquid effluents associated with the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI)

Table 2B

MAINE YANKEE ISFSI
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2009
Liquid Effluents

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		3rd Quarter	4th Quarter	3rd Quarter	4th Quarter
Strontium-89	Ci	N/A*	N/A*	N/A*	N/A*
Strontium-90	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-134	Ci	N/A*	N/A*	N/A*	N/A*
Cesium-137	Ci	N/A*	N/A*	N/A*	N/A*
Iodine-131	Ci	N/A*	N/A*	N/A*	N/A*
Cobalt-58	Ci	N/A*	N/A*	N/A*	N/A*
Cobalt-60	Ci	N/A*	N/A*	N/A*	N/A*
Iron-59	Ci	N/A*	N/A*	N/A*	N/A*
Zinc-65	Ci	N/A*	N/A*	N/A*	N/A*
Manganese-54	Ci	N/A*	N/A*	N/A*	N/A*
Chromium-51	Ci	N/A*	N/A*	N/A*	N/A*
Zirconium-Niobium-95	Ci	N/A*	N/A*	N/A*	N/A*
Molybdenum-99	Ci	N/A*	N/A*	N/A*	N/A*
Technetium-99m	Ci	N/A*	N/A*	N/A*	N/A*
Barium-Lanthanum-140	Ci	N/A*	N/A*	N/A*	N/A*
Cerium-141	Ci	N/A*	N/A*	N/A*	N/A*
Others- Iron-55	Ci	N/A*	N/A*	N/A*	N/A*
Antimony-125	Ci	N/A*	N/A*	N/A*	N/A*
Unidentified	Ci	N/A*	N/A*	N/A*	N/A*
Total for period (above)	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-133	Ci	N/A*	N/A*	N/A*	N/A*
Xenon-135	Ci	N/A*	N/A*	N/A*	N/A*

N/A*= Not Applicable

There are no liquid effluents associated with the Maine Yankee Independent Spent Fuel Storage Installation (ISFSI)

Table 3
MAINE YANKEE ISFSI
Effluent and Waste Disposal Semiannual Report
First Half, 2009
Solid Waste and Irradiated Fuel Shipments

A. Solid Waste Shipped Off-Site for Burial or Disposal (Not Irradiated Fuel)

1. Type of Waste	Unit	6-Month Period	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³ Ci	0.0 0.0	
b. Dry compressible waste, contaminated equipment, etc.	m ³ Ci	0.0 0.0	
c. Irradiated components, control rods, etc.	m ³ Ci	0.0 0.0	
2. Estimate of major nuclide composition (by type of waste)			
a. No Shipments	%	0	
b. No Shipments	%	0	
c. No Shipments	%	0	

3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
None		

B. Irradiated Fuel Shipments (Disposition)

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
None		

Table 3
MAINE YANKEE ISFSI
Effluent and Waste Disposal Semiannual Report
Second Half, 2009
Solid Waste and Irradiated Fuel Shipments

A. Solid Waste Shipped Off-Site for Burial or Disposal (Not Irradiated Fuel)

1. Type of Waste	Unit	6-Month Period	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³ Ci	0.0 0.0	
b. Dry compressible waste, contaminated equipment, etc.	m ³ Ci	0.0 0.0	
c. Irradiated components, control rods, etc.	m ³ Ci	0.0 0.0	
2. Estimate of major nuclide composition (by type of waste)			
a. No Shipments	%	0	
b. No Shipments	%	0	
c. No Shipments	%	0	

3. Solid Waste Disposition

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
None		

B. Irradiated Fuel Shipments (Disposition)

<u>Number of Shipments</u>	<u>Mode of Transportation</u>	<u>Destination</u>
None		

Appendix A

Radiation Dose Assessment

There were no gaseous or liquid effluent releases in 2009. Therefore, an assessment of radiation doses to the most likely exposed member(s) of the public to show compliance with 40CFR190 from effluents was not required.

Appendix B

Unplanned Releases

There were no unplanned releases of radioactive materials from the site in 2009.