MAINE YANKEE ATOMIC POWER COMPANY

ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

January-December 2005

1.0 INTRODUCTION

Tables 1 and 2 summarizes the quantity of radioactive gaseous and liquid effluents, respectively, for each quarter of 2005. Table 3 states that waste was shipped off-site for burial or disposal during the year 2005. Table 4 contains supplementary information.

Appendices A through D, indicate the status of reportable items per the requirements of the Off-site Dose Calculation Manual (ODCM) sections 2.1.5, 2.2.6, 2.3.3, 2.3.4, 2.5 and Appendix C.

Changes to the ODCM made during the year 2005 are summarized in Appendix E. A complete copy of the revised manual is attached as well as the specific pages that changed.

TABLE 1A

Maine Yankee Atomic Power Station
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2005
Gaseous Effluents-Summation of All Releases

	Unit	1st Quarter	2nd Quarter	Est. Total Error, %
A. Fission and Activation Gases				
1. Total Release	Ci	N/A*	N/A*	2.50E+1
2. Average release rate for period	uCi/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*	2.50E+1
2. Average release rate for period	uCi/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*	3.50E+1
2. Average release rate for period	uCi/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*	2.50E+1
2. Average release rate for period	uCi/sec	N/A*	N/A*	
3. Percent of regulatory limit	%	N/A*	N/A*	

N/D*= Not Detected
N/A*= Not Applicable
** = Calculated for the time period in which the releases actually occurred. All others are calculated for the standard 91day period
(particulate release is an unscheduled release, which is reported in Table 4)

TABLE 1A

Maine Yankee Atomic Power Station
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2005
Gaseous Effluents-Summation of All Releases

	Unit	3rd Quarter	4th Quarter	Est. Total Error, %
A. Fission and Activation Gases				
1. Total Release	Ci	N/A*	N/A*	2.50E+1
2. Average release rate for period	uCi/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*	2.50E+1
2. Average release rate for period	uCi/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*	3.50E+1
2. Average release rate for period	uCi/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*	2.50E+1
2. Average release rate for period	uCi/sec	N/A*	N/A*	
3. Percent of regulatory limit	%	N/A*	N/A*	

N/D*= Not Detected
N/A*= Not Applicable

TABLE 1B

Maine Yankee Atomic Power Station
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2005
Gaseous Effluents-Elevated Release

		Continuous Mode		Batch Mode	
Nuclides Released	**Unit**	**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/D*= Not Detected
N/A*= Not Applicable

TABLE 1B

Maine Yankee Atomic Power Station
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2005
Gaseous Effluents-Elevated Release

		Continuous Mode		Batch Mode	
Nuclides Released	**Unit**	**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/D*= Not Detected
N/A*= Not Applicable

TABLE 1C

Maine Yankee Atomic Power Station
Effluent and Waste Disposal Annual Report
January-December 2005
Gaseous Effluents-Ground Level Release

There were no gaseous effluent releases from Maine Yankee during the year 2005.

TABLE 2A

Maine Yankee Atomic Power Station
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2005
Liquid Effluents-Summation of All Releases

	Unit	1st Quarter	2nd Quarter	Est. Total Error, %
A. Fission and Activation Products				
1. Total Release (not including tritium, gases,alpha)	Ci	1.15E-4	1.06E-5	1.50E+1
2. Average diluted concentration during period	.uCi/ml	8.5E-8	5.5E-8	
3. Percent of applicable limit	%	8.3E-3	6.46E-4	
B. Tritium				
1. Total Release	Ci	2.44E-2	3.18E-2	1.50E+1
2. Average diluted concentration during period	.uCi/ml	1.56E-6	1.99E-6	
3. Percent of applicable limit	%	3.5E-3	3.43E-3	
C. Dissolved and Entrained Gases				
1. Total Release	Ci	N/D*	N/D*	1.50 E+1
2. Average diluted concentration during period	.uCi/ml	N/A*	N/A*	
3. Percent of applicable limit	%	N/A*	N/A*	
D. Gross Alpha Radioactivity				
1. Total release	Ci	N/D	N/D	1.50E+1
2. Average diluted concentration during period	.uCi/ml	N/A*	N/A	
E. Volume of Waste Released (prior to dilution)	Liters	7.00E+6	9.27E+6	1.0E+1
F. Volume of Dilution Water Used During Period	Liters	0.00E+0	0.00E+0	1.0E+1

N/D*= Not Detected
N/A*= Not Applicable

TABLE 2A

Maine Yankee Atomic Power Station
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2005
Liquid Effluents-Summation of All Releases

	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	.uCi/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	.uCi/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	.uCi/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	.uCi/ml	N/A	N/A	
E. Volume of Waste Released (prior to dilution)	Liters	N/A	N/A	N/A
F. Volume of Dilution Water Used During Period	Liters	N/A	N/A	N/A

N/D*= Not Detected
N/A*= Not Applicable

TABLE 2B

Maine Yankee Atomic Power Station
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2005
Liquid Effluents

		Continuous Mode		Batch Mode	
Nuclides Released	**Unit**	**1st Quarter**	**2nd Quarter**	**1st Quarter**	**2nd Quarter**
Strontium-89	Ci	N/A*	N/D*	N/D*	N/D*
Strontium-90	Ci	N/A*	N/D*	N/D*	N/D*
Cesium-134	Ci	N/A*	N/D*	N/D*	N/D*
Cesium-137	Ci	N/A*	N/D*	2.66E-5	3.67E-6
Iodine-131	Ci	N/A*	N/D*	N/D*	N/D*
Cobalt-58	Ci	N/A*	N/D*	N/D*	N/D*
Cobalt-60	Ci	N/A*	N/D	8.82E-5	6.95E-6
Iron-59	Ci	N/A*	N/D*	N/D*	N/D*
Zinc-65	Ci	N/A*	N/D*	N/D*	N/D*
Manganese-54	Ci	N/A*	N/D*	N/D*	N/D*
Chromium-51	Ci	N/A*	N/D*	N/D*	N/D*
Zirconium-Niobium-95	Ci	N/A*	N/D*	N/D*	N/D*
Molybdenum-99	Ci	N/A*	N/D*	N/D*	N/D*
Technetium-99m	Ci	N/A*	N/D*	N/D*	N/D*
Barium-Lathanium-140	Ci	N/A*	N/D*	N/D*	N/D*
Cerium-141	Ci	N/A*	N/D*	N/D*	N/D*
Others- Iron-55	Ci	N/A*	N/D*	N/D	N/D*
Antimony-125	Ci	N/A*	N/D*	N/D*	N/D*
Unidentified	Ci	N/A*	N/D*	N/D*	N/D*
Total for period (above)	Ci	N/A*	N/D*	1.15E-4	1.06E-5
Xenon-133	Ci	N/A*	N/D*	N/D*	N/D*
Xenon-135	Ci	N/A*	N/D*	N/D*	N/D*

N/D*= Not Detected
N/A*= Not Applicable

TABLE 2B

Maine Yankee Atomic Power Station
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2005
Liquid Effluents

		Continuous Mode		Batch Mode	
Nuclides Released	**Unit**	**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-Lathanium-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/D*= Not Detected
N/A*= Not Applicable

TABLE 3
Maine Yankee Atomic Power Station
Effluent and Waste Disposal Semiannual Report
First Half, 2005
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, etc.	Cu. M.	0.0	
	Ci.	0.0	+/- 25
b. Dry compressible waste, contaminated equipment, DAW, cement.	Cu. M.	22900	
	Ci.	3.41	+/- 25
c. Irradiated Hardware.	Cu. M.	0.0	
	Ci.	0.0	+/- 25

2. Estimate of major nuclide composition (by type of waste).

a.	Co-60	0	0
	Ni-63	0	0
	Cs-137	0	0
	Fe-55	0	0
b.	Co-60	4.43%	1.51E-1
	Fe-55	0.87%	2.98E-2
	Ni-63	8.63%	2.94E-1
	Cs-137	85.21%	2.90E+00
	Ce-144	0.16%	5.49E-3
	Pu-241	.026%	9.01E-4
c.	Co-60	0	0
	Fe-55	0	0
	Ni-63	0	0

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
1	Trucking over highway	Duratek, Oakridge,TN
2	Trucking over highway	Envirocare of Utah Clive, Utah
291	Rail	Envirocare of Utah

Table 3 (Cont.)

B. Irradiated Fuel Shipments (Disposition): None Shipped.

Additional ODCM Appendix C requirements.

Solid Waste Class	Volume (Cu. M.)	Est. Activity (Ci)	Est. Total Error
A	2.29E+04	3.41E+00	+/- 25%
B	0.00E+00	0.00E+00	+/- 25%
C	0.00E+00	0.00E+00	+/- 25%

Container	Type	Package Volume (Cu. M.)
Gondola Car	Strong Tight Container	68.0
B-25 Steel Box	Strong Tight Container	2.9

TABLE 3
Maine Yankee Atomic Power Station
Effluent and Waste Disposal Semiannual Report
Second Half, 2005
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, %
b Dry compressible waste, contaminated equipment, DAW, cement.	Cu. M.	16600	
	Ci	2.43	+/- 25

2. Estimate of major nuclide composition (by type of waste).

b.	Co-60	1.56%	3.8E-02
	Ni-63	4.75%	1.16E-1
	Cs-137	93.68%	2.28+00

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
211	Rail	Envirocare of Utah Clive, Utah

TABLE 3
(Continued)

B. Irradiated Fuel Shipments (Disposition):

None Shipped.

Additional ODCM Appendix C requirements.

Solid Waste Class	Volume (Cu. M.)	Est. Activity (Ci)	Est. Total Error
A	1.66E+04	2.43E+00	+/- 25%
B	0.00E+00	0.00E+00	+/- 25%
C	0.00E+00	0.00E+00	+/- 25%

Container	Type	Package Volume (Cu. M.)
Gondola Car	Strong Tight Container	68.0

TABLE 4

Supplemental Information

1. Regulatory Limits

Effluent Concentrations

a. Fission and activation gases	10 CFR 20; Appendix B, Table 2, Column 1
b. Iodines	10 CFR 20; Appendix B, Table 2, Column 1
c. Particulates, (with half lives greater than 8 days)	10 CFR 20; Appendix B, Table 2, Column 1
d. Liquid effluents:	10 CFR 20; Appendix B, Table 2, Column 2
e. Total noble gas concentration:	2.0 E-4 uCi/ml

2. Average Energy- Not Applicable

3. Measurements and Approximations of Radioactivity

a. Fission and Activation Gases

Continuous Discharge-There were no continuous discharges via this effluent pathway in the year 2005. By the end of 2004, all site buildings within the radiologically controlled area were demolished and the only remaining activity associated with the Maine Yankee Decommissioning was soil remediation within the restricted area yard.

Batch Discharges- There were no batch releases via this pathway in 2005. The waste gas hold-up drums were purged and removed from service in 1997 in preparation for decommissioning. At that time, containment purge operations were no longer required and containment ventilation was directed to the Primary Vent Stack, and sampled until it was removed in 2004 as part of the decommissioning process.

There are no gaseous effluent release paths associated with ISFSI Operations.

b. Iodines

Iodine surveillance no longer applies due to the elapsed time since final plant shutdown from power operations.

c. Particulates

There were no discharges via this effluent pathway in the year 2005. By the end of 2004, all site buildings within the radiologically controlled area were demolished and the only remaining activity associated with the Maine Yankee Decommissioning was soil remediation within the restricted area yard.

There are no gaseous effluent release paths associated with ISFSI Operations

d. Liquid Effluents

Continuous Discharges

Normally, continuous discharges were not performed as part of the decommissioning mode. However, in the second quarter of 2005 the process was added to the station's Offsite

Dose Calculation Manual or a one-time release to de-water a deep exaction in the restricted area yard to allow Final Status Survey (FSS) to be performed. The activity was performed once remediation activities were largely completed.

Batch Releases

Each batch of potentially radioactive liquid is analyzed for gross alpha, tritium, dissolved gases, and gamma emitting isotopes prior to discharge.

Composite samples are made of liquid effluents for a quarterly analysis of Strontium-89, Strontium-90, and Iron-55.

There are no liquid effluent release paths associated with ISFSI Operations.

4. Batch Releases

   a. Liquids
      1. Number of Batch release: 210
         Number of Continuous Release: 1
      2. Total time period for batch releases: 20898 minutes
         Total time period for continuous release: 955 minutes
      3. Maximum time period for a batch release: 810 minutes
      4. Average time period for batch releases: 99.5 minutes
      5. Minimum time period for a batch release: 65 minutes
      6. Average stream flow during periods of release of effluents into a flowing stream: N/A
      7. Maximum gross release concentration (uCi/ml): 1.37E-5 (1.36E-5 of H-3)

   b. Gaseous
      1. Number of batch release: 0
      2. Total time period for batch releases: Not Applicable
      3. Maximum time period for a batch release: Not Applicable
      4. Average time period for batch releases: Not Applicable
      5. Minimum time period for a batch release: Not Applicable
      6. Maximum gross release rate (uCi/sec): Not Applicable

5. Unplanned Releases

   a. Liquid- There were no unplanned releases in 2005

   b. Gaseous- There were no unplanned releases in 2005

Radioactive Effluent Monitoring Instrumentation

Requirement: Radioactive effluent monitoring instrumentation channels are required to be operable in accordance with ODCM Sections 2.3.3 and 2.3.4. With less than the minimum number of channels operable and reasonable efforts to return the instrument(s) to operable status within 30 days of being unsuccessful, ODCM Sections 2.3.3 and 2.3.4 requires an explanation for the delay in correcting the inoperability in the next Annual Effluent Release Report.

Response: No radioactive effluent monitoring instrumentation was out of service for more than 30 consecutive days during the reporting period when required to be operable by the Offsite Dose Calculation Manual.

APPENDIX B

Liquid Radwaste Treatment System

Requirement: With radioactive liquid waste being discharged without treatment, with estimated doses in excess of the limits in ODCM Section 2.1.5, a report must be submitted to the Commission in the Annual Effluent Release Report for the period.

Response: The requirements of ODCM Section 2.1.5 were met during this period and, therefore, no report is required.

APPENDIX C

Gaseous Radwaste Treatment System

Requirement: With radioactive gaseous waste being discharged without treatment with doses in excess of the limits in ODCM Section 2.2.6, a report must be submitted to the Commission in the Annual Effluent Release Report for the period.

Response: The requirements of ODCM Section 2.2.6 were met during this period and, therefore, no report is required.

APPENDIX D

Lower Limit of Detection for Radiological Analysis

Requirement: ODCM Section 2.5 requires that when unusual circumstances result in LLD's Higher than required, the reasons shall be documented in the Annual Radioactive Effluent Release Report.

Response: All samples were counted in such a manner as to satisfy the specified priori lower limits of detection.

APPENDIX E

Summary of Off-site Dose Calculation Manual Revisions

Revision number: Change # 30

Date: 04/05

Summary;
This ODCM Change added the radioactive liquid waste sampling and analysis requirements for a continuous discharge. The revision was made to allow for a one-tme continuous discharge of groundwater from a deep excavation within the restricted area yard to allow Final Status Survey (FSS) to be performed. Radiological remediation activities were largely completed prior to implementation of the continuous release activity.

Revision number: Change # 31

Date: 08/05

Summary:
With the decommissioning / dismantlement of the former Maine Yankee plant complete, all decommissioning sections of the ODCM were removed as part of this revision. However, all section numbers remained the same to allow for ease of filing the 2005 annual reports required by the ODCM.

Appendix A of the ODCM pertained to effluent and direct dose calculations. This appendix was deleted and the subsequent appendices (B & C) were relabled as A & B.