

**Entergy Nuclear Northeast**

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BVY 05-56

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

**Subject: Vermont Yankee Nuclear Power Station
License No. DPR-28 (Docket No. 50-271)
Annual 2004 Radioactive Effluent Release Report**


In accordance with Vermont Yankee (VY) Technical Specification (TS) 6.6.D, attached is a copy of the annual 2004 Radioactive Effluent Release Report.

In addition, VY TS 6.7.B requires reporting of changes to the Off-site Dose Calculation Manual (ODCM). There were no changes made to the ODCM during 2004 as provided in Appendix H of the subject report.

There are no new regulatory commitments contained in this submittal.

We trust that the information provided is adequate; however, should you have questions or require additional information, please contact me at (802) 258-4236.

Sincerely,


James M. DeVincentis
Manager, Licensing
Vermont Yankee Nuclear Power Station

Attachment (1)

cc: USNRC Region 1 Administrator
USNRC Resident Inspector – VYNPS
USNRC Project Manager – VYNPS
Vermont Department of Public Service
Vermont Division of Occupational and Radiological Health
Massachusetts Metropolitan District Commission
Massachusetts Department of Public Health

IE48
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Docket No. 50-271
BVY 05-56

Attachment 1

Vermont Yankee Nuclear Power Station
2004 Radioactive Effluent Release Report

RADIOACTIVE EFFLUENT
RELEASE REPORT
FOR 2004
INCLUDING ANNUAL RADIOLOGICAL
IMPACT ON MAN

Entergy Nuclear Northeast Vermont Yankee, LLC
Docket No. 50-271
License No. DPR-28

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Radiological Effluent Release Report for 2004
[Including Annual Radiological Impact on Man]
Entergy Nuclear Northeast Vermont Yankee, LLC

1.0 INTRODUCTION

Tables 1 through 3 list the recorded radioactive liquid and gaseous effluents and solid waste shipments for the year, with data summarized on a quarterly basis for both liquids and gases. Table 4A summarizes the estimated radiological dose commitments from all radioactive liquid and gaseous effluents released during the year 2004 in response to the ALARA objectives of 10CFR50, Appendix I. Also included in Table 4A is the estimate of direct dose from fixed station sources along the limiting west site boundary line. Tables 5A through 6H report the cumulative joint frequency distributions of wind speed, wind direction, and atmospheric stability for the 12-month period, January to December 2004. Radioactive effluents reported in Tables 1 and 2 were used to determine the resulting doses for 2004.

As required by ODCM Section 10.1, (Reference 1) dose commitments resulting from the release of radioactive materials in liquids and gases during the reporting period were estimated in accordance with the Station's "Off-Site Dose Calculation Manual" (ODCM). These dose estimates were made using a "Method II" analysis as described in the ODCM. A "Method II" analysis incorporates the methodology of Regulatory Guide 1.109 (Reference 2) and actual measured meteorological data recorded concurrently with the quarterly reporting period.

As required by ODCM Section 10.1, this report shall also include an assessment of the radiation doses from radioactive effluents to member(s) of the public due to allowed recreational activities inside the site boundary during the year. During this reporting period, no recreational activity was permitted and, therefore, there is no associated dose assessment as stated in Section 3.6.

Assessment of radiation doses (including direct radiation) to the likely most exposed real member(s) of the public for the calendar year for the purposes of demonstrating conformance with 40CFR190, "Environmental Radiation Protection Standards for Nuclear Power Operations," are also required to be included in this report if the conditions indicated in ODCM 3/4.6, "Total Dose," have been exceeded during the year. Since the conditions indicated in the action statement under ODCM 3/4.6 were not entered into during the year, no additional radiation dose assessments are required. However, Table 4B does provide the combination of doses and dose commitments from plant effluents and direct radiation sources for the limiting member of the public off-site as a demonstration of compliance with the dose standards of 40CFR190.

All calculated dose estimates for members of the public at the site boundary or beyond for the 2004 annual reporting period are below the dose criteria of 10CFR Part 50, Appendix I, and 40CFR190.

Appendices B through H indicate the status of reportable items per the requirements of ODCM Section 10.1.

2.0 METEOROLOGICAL DATA

Meteorological data were collected during this reporting period from the site's 300-foot meteorological tower located approximately 2,200 feet northwest of the reactor building, and about 1,400 feet from the plant stack. The 300-foot tower is approximately the same height as the primary plant stack (94 meters) and is designed to meet the requirements of Regulatory Guide 1.23 for meteorological monitoring.

X/Q and D/Q values were derived for all receptor points from the site meteorological record for each quarter using a straight-line airflow model. All dispersion factors have been calculated employing appropriate source configuration considerations, as described in Regulatory Guide 1.111 (Reference 3). A source depletion model as described in "Meteorology and Atomic Energy - 1968" (Reference 4) was used to generate deposition factors, assuming a constant deposition velocity of 0.01 m/sec for all stack (elevated) releases. Changes in terrain elevations in the site environment were also factored into the meteorological models as appropriate.

Table 4C lists the distances from the plant stack to the nearest site boundary, resident, and milk animal in each of the 16 principle compass directions as determined during the 2004 land use census. These locations were used in the calculation of atmospheric dispersion factors. The meteorological model was also executed for each calendar quarter to determine the location of the predicted maximum ground level air concentration. These locations were included in the assessment of effluent doses along with identified points of interest from the annual land use census.

3.0 DOSE ASSESSMENT

3.1 Doses From Liquid Effluents

ODCM 3/4.2.2 limits total body (1.5 mrem per quarter, and 3 mrem per year) and organ doses (5 mrem per quarter, and 10 mrem per year) from liquid effluents to a member of the public to those specified in 10CFR Part 50, Appendix I. By implementing the requirements of 10CFR Part 50, Appendix I, ODCM 3/4.2.2 assures that the release of radioactive material in liquid effluents will be kept "as low as is reasonably achievable."

For periods in which liquid waste discharges actually occur, the exposure pathways that could exist are fish, direct exposure from river shoreline sedimentation, milk and meat via animal ingestion of the Connecticut River water, and meat, milk and vegetable pathways via crop irrigation with water withdrawn from the Connecticut River. Ingestion pathways of drinking water and aquatic invertebrate do not exist down river of the Vermont Yankee plant.

There were no recorded liquid radwaste discharges during the report period, and therefore, no dose impact.

3.2 Doses From Noble Gases

ODCM 3/4.3.2 limits the gamma air dose (5 mrad per quarter, and 10 mrad per year) and beta air (10 mrad per quarter, and 20 mrad per year) dose from noble gases released in gaseous effluents from the site to areas at and beyond the site boundary to those specified in 10CFR Part 50, Appendix I. By implementing the requirements of 10CFR Part 50, Appendix I, ODCM 3/4.3.2 assures that the releases of radioactive noble gases in gaseous effluents will be kept "as low as is reasonably achievable."

Dose estimates due to the release of noble gases to the atmosphere are typically calculated at the site boundary, nearest resident in each of the sixteen principal compass directions, the point of highest off-site ground level air concentration of radioactive materials, and for each of the milk animal locations located within five miles of the plant. For 2004, there were no noble gases detected in effluents released from the plant stack, and therefore, no dose impact.

3.3 Doses From Iodine-131, Iodine-133, Tritium, and Radionuclides in Particulate Form With Half-Lives Greater Than 8 Days

ODCM 3/4.3.3 limits the organ dose to a member of the public from iodine-131, iodine-133, tritium and radionuclides in particulate form with half-lives greater than 8 days (hereafter called iodines and particulates) in gaseous effluents released from the site to areas at and beyond the site boundary to those specified in 10CFR Part 50, Appendix I (7.5 mrem per quarter, and 15 mrem per year). By implementing the requirements of 10CFR Part 50, Appendix I, ODCM 3/4.3.3 assures that the releases of iodines and particulates in gaseous effluents will be kept "as low as is reasonably achievable."

Exposure pathways that could exist as a result of the release of iodines and particulates to the atmosphere include external irradiation from activity deposited onto the ground surface, inhalation, and ingestion of vegetables, meat and milk. Dose estimates were made at the site boundary and nearest resident in each of the sixteen principal compass directions, as well as all milk animal locations within five miles of the plant. The nearest resident and milk animals in each sector were identified by the most recent Annual Land Use Census as required by ODCM 3/4.5.2 (see Table 4C). Conservatively, a vegetable garden was assumed to exist at each milk animal and nearest resident location. Furthermore, the meat pathway was assumed to exist at each milk cow location since this data category is not part of the annual land use census. Doses were also calculated at the point of maximum ground level air concentration of radioactive materials in gaseous effluents and included the assumption that the inhalation, vegetable garden, and ground plane exposure pathways exist for an individual with a 100 percent occupancy factor.

It is assumed that milk and meat animals are free to graze on open pasture during the second and third quarters with no supplemental feeding. This assumption is conservative since most of the milk animals inventoried in the site vicinity are fed stored feed throughout the entire year with only limited grazing allowed during the growing season. It has also been assumed that only 50 percent of the iodine deposited from gaseous effluent is in elemental form (I_2) and is available for uptake (see p. 6, Reference 2). During the non-growing season (first and fourth quarters), the milk animals are assumed to receive only stored feed. During the growing season (second and third quarters), all animal feed is assumed to be derived from fresh pasture. Usage factors for gaseous effluents are listed by age group and pathway in Table 4D. Table 4E provides other dose model parameter assumptions used in the dose assessments.

The resultant organ doses were determined after adding the contributions from all pathways at each location. Doses were calculated for the whole body, GI-tract, bone, liver, kidney, thyroid, lung and skin for adults, teenagers, children and infants. The maximum estimated quarterly and annual organ doses to any age group due to iodines and particulates at any of the off-site receptor locations are reported in Table 4A. These estimated organ doses are well below the 10CFR Part 50, Appendix I dose criteria of ODCM 3/4.3.3.

3.4 Whole-Body Doses in Unrestricted Areas From Direct Radiation

The major source of dose in unrestricted areas occurs at the west site boundary, and mainly consisting of direct and skyshine radiation from N-16 decay in the Turbine Building steam cycle during power operations. Because of the orientation of the Turbine Building on the site, and the shielding effects of the adjacent Reactor Building, only the seven westerly sectors (SSW to NNW) see any significant direct radiation.

A correlation method was derived, based directly on site boundary exposure rate and in-plant Main Steam Line Radiation Monitor measurements, that allows changes in the N-16 carryover in the main steam flow to be directly related to changes in the site boundary dose. This correlation is documented in section 6.11.1 (Equation 6-27a) of the ODCM. This method was used to calculate direct dose at the maximum site boundary location from radiation sources in the steam cycle.

The other fixed sources of direct and scatter radiation to the site boundary are from low level radioactive waste stored in the North Warehouse, the Low Level Waste Storage Pad Facility, and

old turbine rotors and casings in the Turbine Storage Facility. The annual dose is based on dose rate measurements in these three storage facilities and determined at the same most restrictive site boundary dose location as that for N-16 shine from the Turbine Building.

The estimated direct radiation dose from all major sources combined for the most limiting site boundary location is listed in Table 4A. These site boundary doses assume a 100 percent occupancy factor, and take no credit for the shielding effect of any residential structure.

Table 4B lists the combination of direct radiation and effluent release doses at the limiting nearest residence for the purpose of demonstrating compliance with the dose standards contained in 40CFR190. For direct radiation, no credit for actual occupancy time is taken (i.e., occupancy is equal to 100%).

For 2004, the annual dose limit for the nearest real resident from all station sources (effluents plus fixed radiation sources) was below the 25 mrem total body and organ limit (75 mrem thyroid) of 40 CFR 190.

3.5 Doses From On-Site Disposal of Septic Waste, Cooling Tower Silt and Soil

Off-Site Dose Calculation Manual, Appendices B, F and I, require that all applications of septage, cooling tower silt and sand/soil within the approved designated disposal areas be limited to ensure the dose to a maximally-exposed individual during the period of Vermont Yankee site control be maintained at less than 1 mrem/year to the whole body and any organ. After the period associated with Vermont Yankee operational control, the dose to the inadvertent intruder is to be maintained at less than 5 mrem/year. The projected dose from on-site disposals of septic waste, cooling tower silt and sand/soil mixes is given in Appendix J of this report.

The dose limits applicable for the on-site spreading of materials were met for all disposals in 2004 and in combination with all past spreadings.

3.6 On-Site Recreational Activities

During 2004, no access for employees, their families and guests to the boat launching ramp located on-site just north of the intake structure was permitted. As such, no recreational activities were permitted on-site during the report period and, therefore, no associated dose impact to members of the public.

REFERENCES

1. Off-site Dose Calculation Manual (ODCM), Revision 30, Entergy Nuclear Northeast Vermont Yankee, LLC , dated 10/30/02.
2. Regulatory Guide 1.109, "Calculation of Annual Doses to Man From Routine Release of Reactor Effluents for the Purpose of Evaluating Compliance with 10CFR Part 50, Appendix I", U. S. Nuclear Regulatory Commission, Office of Standards Development, Revision 1, October 1977.
3. Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors", U.S. Nuclear Regulatory Commission, Office of Standards Development, March 1976.
4. Meteorology and Atomic Energy, 1968, Section 5-3.2.2, "Cloud Depletion", pg. 204. U. S. Atomic Energy Commission, July 1968.

TABLE 1A
Vermont Yankee
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2004
Gaseous Effluents - Summation of All Releases

	Unit	Quarter 1	Quarter 2	Est. Total Error, %
A. Fission and Activation Gases				
1. Total release	Ci	ND	ND	±2.30E+01
2. Average release rate for period	µCi/sec	ND	ND	
3. Percent of ODCM limit (1)	%	ND	ND	
B. Iodines				
1. Total Iodine	Ci	1.07E-04	1.52E-04	±1.80E+01
2. Average release rate for period	µCi/sec	1.35E-05	1.91E-05	
3. Percent of ODCM limit (2)	%	7.08E-02	1.14E-01	
C. Particulates				
1. Particulates with T-1/2>8 days	Ci	1.63E-05	4.56E-05	±1.80E+01
2. Average release rate for period	µCi/sec	2.05E-06	5.74E-07	
3. Percent of ODCM limit (3)	%	(3)	(3)	
4. Gross alpha radioactivity	Ci	1.19E-07	1.13E-06	
D. Tritium				
1. Total release	Ci	1.22 E+00	2.88E+00	±1.80E+01
2. Average release rate for period	µCi/sec	1.53E-01	3.62E-01	
3. Percent of ODCM limit (3)	%	(3)	(3)	

ND = Not Detected

- (1) ODCM Control 3.3.2. for the most limiting of beta air or gamma air dose. Percentage of ODCM limit calculated using Method I dose results.
- (2) ODCM Control 3.3.3. for dose from I-131, I-133, Tritium, and radionuclides in particulate form. Percentage of ODCM limit calculated using Method I dose results.
- (3) Per ODCM Control 3.3.3, dose contribution from Tritium and particulates are included with Iodine above in Part B.

TABLE 1A
(Continued)

Vermont Yankee
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2004
Gaseous Effluents - Summation of All Releases

	Unit	Quarter 3	Quarter 4	Est. Total Error, %
A. Fission and Activation Gases				
1. Total release	Ci	ND	ND	±2.30E+01
2. Average release rate for period	µCi/sec	ND	ND	
3. Percent of ODCM limit (1)	%	ND	ND	
B. Iodines				
1. Total Iodine	Ci	4.77E-05	5.64E-05	±1.80E+01
2. Average release rate for period	µCi/sec	6.00E-06	7.10E-06	
3. Percent of ODCM limit (2)	%	2.76E-02	2.93E-02	
C. Particulates				
1. Particulates with T-1/2>8 days	Ci	1.10E-04	4.69E-06	±1.80E+01
2. Average release rate for period	µCi/sec	1.38E-06	5.90E-07	
3. Percent of ODCM limit (3)	%	(3)	(3)	
4. Gross alpha radioactivity	Ci	ND	ND	
D. Tritium				
1. Total release	Ci	2.55 E+00	1.81 E+00	±1.80E+01
2. Average release rate for period	µCi/sec	3.21E-01	2.28E-01	
3. Percent of ODCM limit (3)	%	(3)	(3)	

ND = Not Detected

- (1) ODCM Control 3.3.2. for the most limiting of beta air or gamma air dose. Percentage of ODCM limit calculated using Method I dose results.
- (2) ODCM Control 3.3.3. for dose from I-131, I-133, Tritium, and radionuclides in particulate form. Percentage of ODCM limit calculated using Method I dose results.
- (3) Per ODCM Control 3.3.3, dose contribution from Tritium and particulates are included with Iodine above in Part B.

TABLE IB
Vermont Yankee
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2004
Gaseous Effluents -Elevated Releases

	Continuous Mode			Batch Mode (1)	
		Quarter		Quarter	
Nuclides Released	Units	1	2	1	2
1. Fission Gases					
Argon-41	Ci	ND	ND		
Krypton-85	Ci	ND	ND		
Krypton-85m	Ci	ND	ND		
Krypton-87	Ci	ND	ND		
Krypton-88	Ci	ND	ND		
Xenon-133	Ci	ND	ND		
Xenon-133m	Ci	ND	ND		
Xenon-135	Ci	ND	ND		
Xenon-135m	Ci	ND	ND		
Xenon-138	Ci	ND	ND		
Unidentified	Ci	ND	ND		
Total for Period	Ci	ND	ND		
2. Iodines					
Iodine-131	Ci	6.11E-05	9.21E-05		
Iodine-133	Ci	4.58E-05	5.98E-05		
Iodine-135	Ci	ND	ND		
Total for Period	Ci	1.07E-04	1.52E-04		
3. Particulates					
Strontium-89	Ci	1.63E-05	ND		
Strontium-90	Ci	ND	ND		
Cesium-134	Ci	ND	ND		
Cesium-137	Ci	ND	1.69E-05		
Barium-Lanthanum-140	Ci	ND	ND		
Manganese-54	Ci	ND	ND		
Chromium-51	Ci	ND	ND		
Cobalt-58	Ci	ND	ND		
Cobalt-60	Ci	ND	2.32E-05		
Cerium-141	Ci	ND	ND		
Zinc-65	Ci	ND	5.53E-06		
Total for Period	Ci	1.63E-05	4.56E-05	0.00E+00	0.00E+00

ND Not Detected at the plant stack
(1) There were no batch mode gaseous releases for this reporting period.

TABLE IB
(Continued)

Vermont Yankee
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2004
Gaseous Effluents - Elevated Releases

	Continuous Mode			Batch Mode (1)	
		Quarter		Quarter	
Nuclides Released	Units	3	4	3	4
1. Fission Gases					
Krypton-85	Ci	ND	ND		
Krypton-85m	Ci	ND	ND		
Krypton-87	Ci	ND	ND		
Krypton-88	Ci	ND	ND		
Xenon-133	Ci	ND	ND		
Xenon-133m	Ci	ND	ND		
Xenon-135	Ci	ND	ND		
Xenon-135m	Ci	ND	ND		
Xenon-138	Ci	ND	ND		
Unidentified	Ci	ND	ND		
Total for Period	Ci	ND	ND		
2. Iodines					
Iodine-131	Ci	1.16E-05	1.80E-05		
Iodine-133	Ci	3.61E-05	3.84E-05		
Iodine-135	Ci	ND	ND		
Total for Period	Ci	4.77E-05	5.64E-05		
3. Particulates					
Strontium-89	Ci	ND	ND		
Strontium-90	Ci	ND	ND		
Cesium-134	Ci	ND	ND		
Cesium-137	Ci	ND	ND		
Barium-Lanthanum-140	Ci	ND	ND		
Manganese-54	Ci	1.13E-05	ND		
Chromium-51	Ci	3.71E-05	ND		
Cobalt-58	Ci	5.66E-06	ND		
Cobalt-60	Ci	3.54E-05	ND		
Cerium-141	Ci	ND	ND		
Cerium-144	Ci	ND	ND		
Zinc-65	Ci	2.10E-05	ND		
Total for Period	Ci	1.10E-04	ND		

ND Not Detected at the Plant Stack

(1) There were no batch mode gaseous releases for this reporting period.

TABLE 1C

Vermont Yankee
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2004
Gaseous Effluents .Ground Level Releases ^{(2) (3)}

Nuclides Released	Continuous Mode			Batch Mode	
	Units	Quarter		Quarter	
		1(2)	2(1)	1(1)	2(1)
1. Fission Gases					
Krypton-85	Ci	ND			
Krypton-85m	Ci	ND			
Krypton-87	Ci	ND			
Krypton-88	Ci	ND			
Xenon-133	Ci	ND			
Xenon-135	Ci	ND			
Xenon-135m	Ci	ND			
Xenon-138	Ci	ND			
Unidentified	Ci	ND			
Total for Period	Ci	0.00E+00			
2. Iodines					
Iodine-131	Ci	ND			
Iodine-133	Ci	ND			
Iodine-I 35	Ci	ND			
Total for Period	Ci	ND			
3. Particulates					
Strontium-89	Ci	1.34E-10			
Strontium-90	Ci	1.48E-10			
Cesium-134	Ci	ND			
Cesium- 137	Ci	1.36E-08			
Barium-Lanthanum-140	Ci	ND			
Manganese-54	Ci	ND			
Chromium-51	Ci	ND			
Cobalt-58	Ci	ND			
Cobalt-60	Ci	2.19E-06			
Cerium-141	Ci	ND			
Zinc-65	Ci	ND			
Iron-55	Cl	5.19E-09			
Total for Period	Ci	4.37E-08			

ND Not detected in the used oil sample.

(1) There were no ground level gaseous releases for this reporting period.

(2) Burning of used oil was treated as a continuous release for the first and fourth quarters. Used oil was burned only in the first and fourth quarters.

(3) The North Warehouse stack was used as a ground level release point for burning of used oil.

TABLE IC
(Continued)

Vermont Yankee
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2004
Gaseous Effluents - Ground Level Releases

Nuclides Released	Continuous Mode			Batch Mode	
	Units	Quarter		Quarter	
		3 (1)	4 (2)	3 (1)	4 (1)
1. Fission Gases					
Krypton-85	Ci		ND		
Krypton-85m	Ci		ND		
Krypton-87	Ci		ND		
Krypton-88	Ci		ND		
Xenon-133	Ci		ND		
Xenon-135	Ci		ND		
Xenon-135m	Ci		ND		
Xenon-138	Ci		ND		
Unidentified	Ci		ND		
Total for Period	Ci		ND		
2. Iodines					
Iodine-131	Ci		ND		
Iodine-133	Ci		ND		
Iodine-135	Ci		ND		
Total for Period	Ci		ND		
3. Particulates					
Strontium-89	Ci		3.53E-9		
Strontium-90	Ci		3.91E-9		
Cesium- 134	Ci		ND		
Cesium-137	Ci		3.60E-7		
Barium-Lanthanum- 140	Ci		ND		
Manganese-54	Ci		2.25E-7		
Chromium-51	Ci		ND		
Cobalt-58	Ci		ND		
Cobalt-60	Ci		3.12E-6		
Cerium-141	Ci		ND		
Zinc-65	Ci		3.16E-7		
Iron-55	Ci		6.60E-7		
Total for Period	Ci		4.69E-6		

- (1) There were no ground level gaseous releases for this reporting period.
- (2) Burning of used oil was treated as a continuous release for the first and fourth quarters. Used oil was burned only in the first and fourth quarters.

TABLE 1D
Vermont Yankee
Effluent and Waste Disposal Annual Report
for 2004
Gaseous Effluents - Nonroutine Releases

There were no non-routine or accidental gaseous releases during this reporting period.

TABLE 2A
Vermont Yankee
Effluent and Waste Disposal Annual Report
for 2004
Liquid Effluents .Summation of All Releases

There were no liquid releases during this reporting period.

TABLE 2B
Vermont Yankee
Effluent and Waste Disposal Annual Report
for 2004
Liquid Effluents Nonroutine Releases

There were no non-routine or accidental liquid releases during this reporting period.

TABLE 3

Entergy Nuclear Northeast Vermont Yankee
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2004
Solid Waste and Irradiated Fuel Shipments

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (not irradiated fuel)

1. Type of Waste

Shipped from VY for Burial or Disposal	Unit	1 ST and 2 ND Quarters 2004	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³ Ci	None	N/A
b. Dry compressible waste, contaminated equipment, etc.	m ³ Ci	None	N/A
c. Irradiated components, control rods, etc.:	m ³ Ci	None	N/A

Shipped from Processor(s) for Burial or Disposal	Unit	1 ST and 2 ND Quarters 2004	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³ Ci	1.80E+01 7.83E+01	± 2.5 E+01
b. Dry compressible waste, contaminated equipment, etc.	m ³ Ci	2.72 E+02 2.40 E-01	± 2.5 E+01
c. Irradiated components, control rods, etc.:	m ³ Ci	None	N/A

2. Estimate of Major Nuclide Composition (By Type of Waste)

a. Spent resins, filter sludges, evaporator bottoms, etc.		b. Dry compressible waste, contaminated equipment, etc.	
Isotope	Percent (1)	Isotope	Percent (1)
Zinc-65	3.00 E+01 %	Iron-55	7.00 E+01 %
Cesium-137	2.00 E+01 %	Zinc-65	7.40 E+00 %
Cobalt-60	1.55 E+01 %	Cobalt-60	1.04 E+01 %
Ni-63	1.05 E+01 %	Manganese-54	5.80 E+00 %
Manganese-54	6.90 E+00 %	Chromium-51	3.10 E+00 %
Iron-55	5.80 E+00 %	Iron-59	1.20 E+00 %
Cesium-134	9.10 E+00 %		
Cerium-144	1.50 E+00 %		

(1) Includes only those nuclides that are greater than 1% of the total activity.

Note: Sections A.1 and A.2 above do not include the data for the waste shipments from VY to the processors. The data for this waste will be included in the report that covers the year that this waste is shipped from the processor for burial or disposal.

TABLE 3
(Continued)

**Entergy Nuclear Northeast Vermont Yankee
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2004
Solid Waste and Irradiated Fuel Shipments**

3. Disposition of solid waste shipments (1st and 2nd Quarters)

Number of Shipments	From VY	From Processor	Mode of Transportation	Destination	
				Processor	Burial or Disposal
4	X		Truck	Duratek Oak Ridge, TN	
6	X		Truck	Studsvik, Erwin, TN	
12		X	Truck	Duratek Oak Ridge, TN	Envirocare Clive, UT
1		X	Truck	Studvik Erwin, TN	Duratek Barnwell, SC

B. Irradiated Fuel Shipments (Disposition): None

C. Additional Data (1st and 2nd Quarters)

Supplemental Information	Shipments from VY to Processors	Shipments from VY for Burial or Disposal	Shipments from Processors for Burial or Disposal
Class of solid waste shipped	AU, B	None	AU
Type of containers used	Strong Tight, Type A	None	Strong Tight (quantity of containers not required)
Solidification agent or absorbent	None	None	None

TABLE 3 (Continued)

Entergy Nuclear Northeast Vermont Yankee
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2004
Solid Waste and Irradiated Fuel Shipments

A. SOLID WASTE SHIPPED OFFSITE FOR BURIAL OR DISPOSAL (not irradiated fuel)

1. Type of Waste

Shipped from VY for Burial or Disposal	Unit	3 rd and 4 th Quarters 2004	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³ Ci	5.00 E+00 6.34 E+01	±2.50 E+01
b. Dry compressible waste, contaminated equipment, etc.	m ³ Ci	None	N/A
c. Irradiated components, control rods, etc.	m ³ Ci	None	N/A

Shipped from VY to Processor	Unit	3 rd and 4 th Quarters 2004	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³ Ci	7.00 E+00 6.49 E+01	±2.50 E+01
b. Dry compressible waste, contaminated equipment, etc.	m ³ Ci	None	N/A
c. Irradiated components, control rods, etc.	m ³ Ci	None	N/A

Shipped from Processor(s) for Burial or Disposal	Unit	3 rd and 4 th Quarters 2004	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³ Ci	3.00 E+00 8.51 E+01	±2.50 E+01
b. Dry compressible waste, contaminated equipment, etc.	m ³ Ci	8.00 E+00 1.02 E+00	±2.50 E+01
c. Irradiated components, control rods, etc.	m ³ Ci	None	N/A

TABLE 3 (Continued)

Entergy Nuclear Northeast Vermont Yankee
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2004
Solid Waste and Irradiated Fuel Shipments

2. Estimate of Major Nuclide Composition (By Type of Waste)

a. Spent resins, filter sludges, evaporator bottoms, etc.		b. Dry compressible waste, contaminated equipment, etc.		c. Irradiated components, control rods, etc.	
Isotope	Percent (1)	Isotope	Percent (1)	Isotope	Percent (1)
Zinc-65	4.46 E+01 %	Iron-55	6.45 E+01 %	N/A	N/A
Cesium-137	1.50 E+01 %	Zinc-65	7.70 E+00 %		
Cesium-134	5.14 E+00 %	Cobalt-60	1.52 E+01 %		
Cobalt-60	1.31 E+01 %	Manganese-54	4.90 E+00 %		
Ni-63	8.68 E+00 %	Cesium-137	1.28 E+00 %		
Manganese-54	4.13 E+00 %	Chromium-51	4.21 E+00 %		
Iron-55	5.41 E+00 %	Cerium-144	1.32 E+00 %		
Cerium-144	1.30 E+00 %				
Antimony-122	2.39 E+00 %				

(1) Includes only those nuclides that are greater than 1% of the total activity.

3. Disposition of Solid Waste Shipments (3rd and 4th Quarters)

Number of Shipments	From VY	From Processor	Mode of Transportation	Destination	
				Processor	Burial or Disposal
1	X		Truck		Duratek Barnwell, SC
2	X		Truck	Studsvik Erwin, TN	
11		X	Truck	Duratek Oak Ridge, TN	Envirocare Clive, UT
3		X	Truck	Studsvik Erwin, TN	Duratek Barnwell, SC
2	X		Truck	PermaFix Oak Ridge, TN	Envirocare Clive, UT

B. Irradiated Fuel Shipments (Disposition): None

TABLE 3 (Continued)

**Entergy Nuclear Northeast Vermont Yankee
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2004
Solid Waste and Irradiated Fuel Shipments**

C. Additional Data (3rd and 4th Quarters)

Supplemental Information	Shipments from VY to Processors	Shipments from VY for Burial or Disposal	Shipments from Processors for Burial or Disposal
Class of solid waste shipped	AU, B	B	AU,B, C (quantity of containers not required)
Type of containers used	Strong Tight Type A	Type A	Strong Tight, Type B (quantity of containers not required)
Solidification agent or absorbent	None	None	None

TABLE 4A

Entergy Nuclear Northeast Vermont Yankee
Maximum* Off-Site Doses/Dose Commitments to Members of the Public
from Liquid and Gaseous Effluents
for 2004
(10CFR50, Appendix I)

Source	Dose (mrem) ^(a)				
	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Year ^(b)
Liquid Effluents					
Total Body Dose	--	--	--	--	--
Footnotes	(c)	(c)	(c)	(c)	(c)
Organ Dose	--	--	--	--	--
Footnotes	(c)	(c)	(c)	(c)	(c)
Airborne Effluents					
Iodines and Particulates	5.56E-04	5.88E-03	1.14E-03	4.65E-04	8.04E-03
Footnotes	(3)	(2)	(2)	(1)	
Noble Gases					
Beta Air (mrad)	--	--	--	--	N/A
Footnotes	(d)	(d)	(d)	(d)	
Gamma Air (mrad)	--	--	--	--	N/A
Footnotes	(d)	(d)	(d)	(d)	
Direct Radiation					
See Section 5.7	3.90	2.30	3.47	3.64	13.3 (e)

- * "Maximum" means the largest fraction of the corresponding 10CFR50, Appendix I dose design objective.
- (a) The numbered footnotes indicate the age group, organ, and location of the dose receptor, where appropriate.
- (b) The yearly dose is the sum of the doses for each quarter, or a full annual assessment.
- (c) There were no liquid releases in this quarter.
- (d) There were no noble gas releases in this quarter.
- (e) Maximum direct dose point located on the west site boundary

- (1) CHILD/ THYROID/ SW/ 2600 meters from stack
(2) INFANT/ THYROID/ NW/ 4260 meters from stack
(3) CHILD/THYROID/SW/2600 meters from stack

TABLE 4B

Entergy Nuclear Northeast Vermont Yankee
Maximum Annual Dose Commitments from Direct External Radiation,
Plus Liquid and Gaseous Effluents for 2004^(*)
(40CFR190)

Pathway	Total Body (mrem)	Maximum Organ (mrem)	Thyroid (mrem)
Direct External (a)	13.3	13.3	13.3
Liquids (b)	N/A	N/A	N/A
Gases (c)	6.65E-05	9.57E-05	4.65E-05
Annual Total (d)	13.3	13.3	13.3

- (*) The location of the projected maximum individual doses from combined direct radiation plus liquid and gaseous effluents correspond to residences at the southwest boundary relative to the Turbine Hall.
- (a) No occupancy time fraction (assumed 100%) or residential shielding credit is assumed which would reduce real doses below the calculated values. Expected direct external radiation doses would be reduced by about 54% with a realistic residential shielding credit and occupancy time (0.7 shielding factor from Regulatory Guide 1.109 and annual occupancy time 6760 hours).
- (b) There were no liquid releases in 2004.
- (c) Maximum dose to any organ over all age groups for each release.
- (d) Annual dose limits contained in the EPA Radiation Protection Standards (40CFR190) equal 25 mrem to the total body and any organ, except 75 mrem to the thyroid of a real member of the public.

TABLE 4C
Receptor Locations
Entergy Nuclear Northeast Vermont Yankee

Sector	Site Boundary ⁽¹⁾ (Meters)	Nearest Resident ⁽²⁾ (Meters)	Nearest Milk Animal ⁽²⁾ Within 10 km (Meters)
N	400	1470	--
NNE	350	1400	5520 (cows)
NE	350	1250	--
ENE	400	970	--
E	500	930	--
ESE	700	2830	--
SE	750	1970	3600 (cows)
SSE	850	2050	5240* (cows)
S	385	450	2220 (cows)
SSW	300	450	--
SW	250	410	8200 (cows)
WSW	250	450	9590 (goats)
W	300	620	820 (cows)
WNW	400	1060	6980* (cows)
NW	550	2600	4260* (cows)
NNW	550	2600	--

* Receptor locations were conservatively included although these farms have been classified as "out of business"

(1) Vermont Yankee UFSAR Figure 2.2-5.

(2) The location(s) given are based on data from the Vermont Yankee 2004 Land Use Census and are relative to the plant stack. Gardens are assumed to be present at all resident locations.

TABLE 4D
Usage Factors for Gaseous Pathways
Entergy Nuclear Northeast Vermont Yankee

(From Reference 1, Table E-5^{*})

Age Group	Veg. (kg/yr)	Leafy Veg. (kg/yr)	Milk (l/yr)	Meat (kg/yr)	Inhalation (m³/yr)
Adult	520	64	310	110	8,000
Teen	630	42	400	65	8,000
Child	520	26	330	41	3,700
Infant	0	0	330	0	1,400

* Regulatory Guide 1.109 (Reference 2).

TABLE 4E
Environmental Parameters for Gaseous Effluents *
Entergy Nuclear Northeast Vermont Yankee

Variable		Vegetables		Cow Milk		Goat Milk		Meat	
		Stored	Leafy	Pasture	Stored	Pasture	Stored	Pasture	Stored
YV	Agricultural Productivity (kg/m ²)	2	2	0.70	2	0.70	2	0.70	2
P	Soil Surface Density (kg/m ²)	240	240	240	240	240	240	240	240
T	Transport Time to User (hrs)			48	48	48	48	480	480
TB	Soil Exposure Time ^(a) (hrs)	131,400	131,400	131,400	131,400	131,400	131,400	131,400	131,400
TE	Crop Exposure Time to Plume (hrs)	1,440	1,440	720	1,440	720	1,440	720	1,440
TH	Holdup After Harvest (hrs)	1,440	24	0	2,160	0	2,160	0	2,160
QF	Animals Daily Feed (kg/day)			50	50	6	6	50	50
FP	Fraction of Year on Pasture			(b)		(b)		(b)	
FS	Fraction Pasture Feed When on Pasture ^(c)			1		1		1	

Note: Footnotes on following page.

TABLE 4E (Continued)

Environmental Parameters for Gaseous Effluents
Entergy Nuclear Northeast Vermont Yankee

Variable		Vegetables		Cow Milk		Goat Milk		Meat	
		Stored	Leafy	Pasture	Stored	Pasture	Stored	Pasture	Stored
FG	Fraction of Stored Vegetables Grown in Garden	0.76							
FL	Fraction of Leafy Vegetables Grown in Garden		1.0						
FI	Fraction Elemental Iodine = 0.5								
H	Absolute Humidity = 5.6 ^(d)								

* From VY ODCM, Table 6.9.1 (Reference 1).

- (a) For Method II dose/dose rate analyses of identified radioactivity releases of less than one year, the soil exposure time for that release may be set at 8,760 hours (one year) for all pathways.
- (b) For Method II dose/dose rate analyses performed for releases occurring during the first or fourth calendar quarters, the fraction of time animals are assumed to be on pasture is zero (nongrowing season). For the second and third calendar quarters, the fraction of time on pasture (FP) will be set at 1.0. FP may also be adjusted for specific farm locations if this information is so identified and reported as part of the land use census.
- (c) For Method II analyses, the fraction of pasture feed while on pasture may be set to less than 1.0 for specific farm locations if this information is so identified and reported as part of the land use census.
- (d) For all Method II analyses, an absolute humidity value equal to 5.6 (gm/m³) shall be used to reflect conditions in the Northeast (Reference: Health Physics Journal, Volume 39 (August), 1980; Pages 318-320, Pergamon Press).

TABLE 5A

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS A

CLASS FREQUENCY (PERCENT) = 1.86

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
(1)	.63	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.63
(2)	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
C-3	2	3	1	5	1	0	0	1	0	0	0	0	0	0	3	2	0	18
(1)	1.25	1.88	.63	3.13	.63	.00	.00	.63	.00	.00	.00	.00	.00	.00	1.88	1.25	.00	11.25
(2)	.02	.03	.01	.06	.01	.00	.00	.01	.00	.00	.00	.00	.00	.00	.03	.02	.00	.21
4-7	15	1	1	1	1	2	5	0	1	0	0	2	2	3	5	33	0	72
(1)	9.38	.63	.63	.63	.63	1.25	3.13	.00	.63	.00	.00	1.25	1.25	1.88	3.13	20.63	.00	45.00
(2)	.17	.01	.01	.01	.01	.02	.06	.00	.01	.00	.00	.02	.02	.03	.06	.38	.00	.84
8-12	17	1	0	0	0	0	1	5	3	1	0	1	1	7	3	9	0	49
(1)	10.63	.63	.00	.00	.00	.00	.63	3.13	1.88	.63	.00	.63	.63	4.38	1.88	5.63	.00	30.63
(2)	.20	.01	.00	.00	.00	.00	.01	.06	.03	.01	.00	.01	.01	.08	.03	.10	.00	.57
13-18	1	0	0	0	0	0	0	0	1	0	0	0	0	7	3	8	0	20
(1)	.63	.00	.00	.00	.00	.00	.00	.00	.63	.00	.00	.00	.00	4.38	1.88	5.00	.00	12.50
(2)	.01	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.08	.03	.09	.00	.23
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	36	5	2	6	2	2	6	6	5	1	0	3	3	17	14	52	0	160
(1)	22.50	3.13	1.25	3.75	1.25	1.25	3.75	3.75	3.13	.63	.00	1.88	1.88	10.63	8.75	32.50	.00	100.00
(2)	.42	.06	.02	.07	.02	.02	.07	.07	.06	.01	.00	.03	.03	.20	.16	.60	.00	1.86

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 5B

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS B

CLASS FREQUENCY (PERCENT) = 2.31

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
C-3	1	2	1	2	1	1	1	0	0	0	0	0	0	1	0	3	0	13
(1)	.50	1.01	.50	1.01	.50	.50	.50	.00	.00	.00	.00	.00	.00	.50	.00	1.51	.00	6.53
(2)	.01	.02	.01	.02	.01	.01	.01	.00	.00	.00	.00	.00	.00	.01	.00	.03	.00	.15
4-7	19	6	4	0	4	3	8	11	1	2	1	0	3	4	3	17	0	86
(1)	9.55	3.02	2.01	.00	2.01	1.51	4.02	5.53	.50	1.01	.50	.00	1.51	2.01	1.51	8.54	.00	43.22
(2)	.22	.07	.05	.00	.05	.03	.09	.13	.01	.02	.01	.00	.03	.05	.03	.20	.00	1.00
8-12	7	3	0	0	0	0	1	5	19	2	0	0	1	10	3	22	0	73
(1)	3.52	1.51	.00	.00	.00	.00	.50	2.51	9.55	1.01	.00	.00	.50	5.03	1.51	11.06	.00	36.68
(2)	.08	.03	.00	.00	.00	.00	.01	.06	.22	.02	.00	.00	.01	.12	.03	.26	.00	.85
13-18	2	1	0	0	0	0	0	0	5	2	1	0	0	2	5	9	0	27
(1)	1.01	.50	.00	.00	.00	.00	.00	.00	2.51	1.01	.50	.00	.00	1.01	2.51	4.52	.00	13.57
(2)	.02	.01	.00	.00	.00	.00	.00	.00	.06	.02	.01	.00	.00	.02	.06	.10	.00	.31
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	29	12	5	2	5	4	10	16	25	6	2	0	4	17	11	51	0	199
(1)	14.57	6.03	2.51	1.01	2.51	2.01	5.03	8.04	12.56	3.02	1.01	.00	2.01	8.54	5.53	25.63	.00	100.00
(2)	.34	.14	.06	.02	.06	.05	.12	.19	.29	.07	.02	.00	.05	.20	.13	.59	.00	2.31

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 5C

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS C

CLASS FREQUENCY (PERCENT) = 5.13

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
C-3	14	7	6	1	5	4	5	4	2	1	3	0	1	2	2	6	0	63
(1)	3.17	1.59	1.36	.23	1.13	.91	1.13	.91	.45	.23	.68	.00	.23	.45	.45	1.36	.00	14.29
(2)	.16	.08	.07	.01	.06	.05	.06	.05	.02	.01	.03	.00	.01	.02	.02	.07	.00	.73
4-7	27	7	1	6	11	17	29	24	15	3	0	2	6	4	15	52	0	219
(1)	6.12	1.59	.23	1.36	2.49	3.85	6.58	5.44	3.40	.68	.00	.45	1.36	.91	3.40	11.79	.00	49.66
(2)	.31	.08	.01	.07	.13	.20	.34	.28	.17	.03	.00	.02	.07	.05	.17	.60	.00	2.55
8-12	22	3	0	2	2	1	4	7	30	3	1	3	6	11	10	23	0	128
(1)	4.99	.68	.00	.45	.45	.23	.91	1.59	6.80	.68	.23	.68	1.36	2.49	2.27	5.22	.00	29.02
(2)	.26	.03	.00	.02	.02	.01	.05	.08	.35	.03	.01	.03	.07	.13	.12	.27	.00	1.49
13-18	6	2	0	0	0	0	0	0	5	1	2	0	0	3	7	5	0	31
(1)	1.36	.45	.00	.00	.00	.00	.00	.00	1.13	.23	.45	.00	.00	.68	1.59	1.13	.00	7.03
(2)	.07	.02	.00	.00	.00	.00	.00	.00	.06	.01	.02	.00	.00	.03	.08	.06	.00	.36
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	69	19	7	9	18	22	38	35	52	8	6	5	13	20	34	86	0	441
(1)	15.65	4.31	1.59	2.04	4.08	4.99	8.62	7.94	11.79	1.81	1.36	1.13	2.95	4.54	7.71	19.50	.00	100.00
(2)	.80	.22	.08	.10	.21	.26	.44	.41	.60	.09	.07	.06	.15	.23	.40	1.00	.00	5.13

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 5D

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS D

CLASS FREQUENCY (PERCENT) = 51.66

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
(1)	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
(2)	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
C-3	110	64	58	63	61	75	78	97	66	60	44	26	41	40	89	134	0	1106
(1)	2.48	1.44	1.31	1.42	1.37	1.69	1.76	2.18	1.49	1.35	.99	.59	.92	.90	2.00	3.02	.00	24.89
(2)	1.28	.74	.67	.73	.71	.87	.91	1.13	.77	.70	.51	.30	.48	.47	1.03	1.56	.00	12.86
4-7	230	78	36	30	50	97	155	283	284	67	21	38	98	107	120	354	0	2048
(1)	5.18	1.76	.81	.68	1.13	2.18	3.49	6.37	6.39	1.51	.47	.86	2.21	2.41	2.70	7.97	.00	46.09
(2)	2.67	.91	.42	.35	.58	1.13	1.80	3.29	3.30	.78	.24	.44	1.14	1.24	1.40	4.12	.00	23.81
8-12	177	32	4	2	0	4	7	28	208	52	1	10	45	163	141	161	0	1035
(1)	3.98	.72	.09	.05	.00	.09	.16	.63	4.68	1.17	.02	.23	1.01	3.67	3.17	3.62	.00	23.30
(2)	2.06	.37	.05	.02	.00	.05	.08	.33	2.42	.60	.01	.12	.52	1.90	1.64	1.87	.00	12.03
13-18	27	0	0	0	0	0	0	1	11	8	4	1	7	90	68	34	0	251
(1)	.61	.00	.00	.00	.00	.00	.00	.02	.25	.18	.09	.02	.16	2.03	1.53	.77	.00	5.65
(2)	.31	.00	.00	.00	.00	.00	.00	.01	.13	.09	.05	.01	.08	1.05	.79	.40	.00	2.92
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.02	.00	.00	.05
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.02
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	544	174	98	95	111	176	240	410	569	187	70	75	191	401	419	683	0	4443
(1)	12.24	3.92	2.21	2.14	2.50	3.96	5.40	9.23	12.81	4.21	1.58	1.69	4.30	9.03	9.43	15.37	.00	100.00
(2)	6.33	2.02	1.14	1.10	1.29	2.05	2.79	4.77	6.62	2.17	.81	.87	2.22	4.66	4.87	7.94	.00	51.66

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 5E

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS E

CLASS FREQUENCY (PERCENT) = 26.20

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	0	0	0	0	0	0	1	0	0	0	2	1	0	0	0	4
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.09	.04	.00	.00	.00	.18
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.02	.01	.00	.00	.00	.05
C-3	73	28	17	12	17	19	32	65	82	106	173	188	199	178	178	178	0	1545
(1)	3.24	1.24	.75	.53	.75	.84	1.42	2.89	3.64	4.70	7.68	8.34	8.83	7.90	7.90	7.90	.00	68.58
(2)	.85	.33	.20	.14	.20	.22	.37	.76	.95	1.23	2.01	2.19	2.31	2.07	2.07	2.07	.00	17.97
4-7	62	8	2	1	1	11	21	51	71	28	21	17	39	57	83	117	0	590
(1)	2.75	.36	.09	.04	.04	.49	.93	2.26	3.15	1.24	.93	.75	1.73	2.53	3.68	5.19	.00	26.19
(2)	.72	.09	.02	.01	.01	.13	.24	.59	.83	.33	.24	.20	.45	.66	.97	1.36	.00	6.86
8-12	14	0	0	1	0	0	1	3	11	5	1	0	2	22	24	24	0	108
(1)	.62	.00	.00	.04	.00	.00	.04	.13	.49	.22	.04	.00	.09	.98	1.07	1.07	.00	4.79
(2)	.16	.00	.00	.01	.00	.00	.01	.03	.13	.06	.01	.00	.02	.26	.28	.28	.00	1.26
13-18	0	0	0	0	0	0	0	1	0	0	1	0	0	2	2	0	0	6
(1)	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.04	.00	.00	.09	.09	.00	.00	.27
(2)	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.01	.00	.00	.02	.02	.00	.00	.07
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	149	36	19	14	18	30	54	120	165	139	196	205	242	260	287	319	0	2253
(1)	6.61	1.60	.84	.62	.80	1.33	2.40	5.33	7.32	6.17	8.70	9.10	10.74	11.54	12.74	14.16	.00	100.00
(2)	1.73	.42	.22	.16	.21	.35	.63	1.40	1.92	1.62	2.28	2.38	2.81	3.02	3.34	3.71	.00	26.20

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 5F

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS F

CLASS FREQUENCY (PERCENT) = 11.05

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.00	.11	.00	.00	.21
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01	.00	.00	.02
C-3	21	6	8	2	5	5	7	20	43	74	167	203	136	74	57	54	0	882
(1)	2.21	.63	.84	.21	.53	.53	.74	2.11	4.53	7.79	17.58	21.37	14.32	7.79	6.00	5.68	.00	92.84
(2)	.24	.07	.09	.02	.06	.06	.08	.23	.50	.86	1.94	2.36	1.58	.86	.66	.63	.00	10.26
4-7	1	2	0	1	1	1	2	3	5	3	9	3	5	3	11	15	0	65
(1)	.11	.21	.00	.11	.11	.11	.21	.32	.53	.32	.95	.32	.53	.32	1.16	1.58	.00	6.84
(2)	.01	.02	.00	.01	.01	.01	.02	.03	.06	.03	.10	.03	.06	.03	.13	.17	.00	.76
8-12	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00	.00	.11
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.01
13-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	22	8	8	3	6	6	9	23	48	77	176	206	143	77	69	69	0	950
(1)	2.32	.84	.84	.32	.63	.63	.95	2.42	5.05	8.11	18.53	21.68	15.05	8.11	7.26	7.26	.00	100.00
(2)	.26	.09	.09	.03	.07	.07	.10	.27	.56	.90	2.05	2.40	1.66	.90	.80	.80	.00	11.05

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 5G

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS G

CLASS FREQUENCY (PERCENT) = 1.79

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
C-3	7	1	2	0	0	1	3	3	9	14	24	22	24	12	16	9	0	147
(1)	4.55	.65	1.30	.00	.00	.65	1.95	1.95	5.84	9.09	15.58	14.29	15.58	7.79	10.39	5.84	.00	95.45
(2)	.08	.01	.02	.00	.00	.01	.03	.03	.10	.16	.28	.26	.28	.14	.19	.10	.00	1.71
4-7	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	2	0	6
(1)	.00	.65	.00	.00	.00	.00	.00	.65	.65	.00	.00	.00	.00	.00	.65	1.30	.00	3.90
(2)	.00	.01	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00	.01	.02	.00	.07
8-12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
(1)	.00	.00	.00	.00	.00	.00	.00	.65	.00	.00	.00	.00	.00	.00	.00	.00	.00	.65
(2)	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
13-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	7	2	2	0	0	1	3	5	10	14	24	22	24	12	17	11	0	154
(1)	4.55	1.30	1.30	.00	.00	.65	1.95	3.25	6.49	9.09	15.58	14.29	15.58	7.79	11.04	7.14	.00	100.00
(2)	.08	.02	.02	.00	.00	.01	.03	.06	.12	.16	.28	.26	.28	.14	.20	.13	.00	1.79

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE
 (2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD
 C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 5H

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS ALL

CLASS FREQUENCY (PERCENT) = 100.00

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	1	0	0	0	0	0	0	1	1	0	0	0	3	1	1	0	0	8
(1)	.01	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.03	.01	.01	.00	.00	.09
(2)	.01	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.03	.01	.01	.00	.00	.09
C-3	228	111	93	85	90	105	126	190	202	255	411	439	401	307	345	386	0	3774
(1)	2.65	1.29	1.08	.99	1.05	1.22	1.47	2.21	2.35	2.97	4.78	5.10	4.66	3.57	4.01	4.49	.00	43.88
(2)	2.65	1.29	1.08	.99	1.05	1.22	1.47	2.21	2.35	2.97	4.78	5.10	4.66	3.57	4.01	4.49	.00	43.88
4-7	354	103	44	39	68	131	220	373	378	103	52	62	153	178	238	590	0	3086
(1)	4.12	1.20	.51	.45	.79	1.52	2.56	4.34	4.40	1.20	.60	.72	1.78	2.07	2.77	6.86	.00	35.88
(2)	4.12	1.20	.51	.45	.79	1.52	2.56	4.34	4.40	1.20	.60	.72	1.78	2.07	2.77	6.86	.00	35.88
8-12	237	39	4	5	2	5	14	49	271	63	3	14	56	213	181	239	0	1395
(1)	2.76	.45	.05	.06	.02	.06	.16	.57	3.15	.73	.03	.16	.65	2.48	2.10	2.78	.00	16.22
(2)	2.76	.45	.05	.06	.02	.06	.16	.57	3.15	.73	.03	.16	.65	2.48	2.10	2.78	.00	16.22
13-18	36	3	0	0	0	0	0	2	22	11	8	1	7	104	85	56	0	335
(1)	.42	.03	.00	.00	.00	.00	.00	.02	.26	.13	.09	.01	.08	1.21	.99	.65	.00	3.90
(2)	.42	.03	.00	.00	.00	.00	.00	.02	.26	.13	.09	.01	.08	1.21	.99	.65	.00	3.90
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.02
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.02
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	856	256	141	129	160	241	360	615	874	432	474	516	620	804	851	1271	0	8600
(1)	9.95	2.98	1.64	1.50	1.86	2.80	4.19	7.15	10.16	5.02	5.51	6.00	7.21	9.35	9.90	14.78	.00	100.00
(2)	9.95	2.98	1.64	1.50	1.86	2.80	4.19	7.15	10.16	5.02	5.51	6.00	7.21	9.35	9.90	14.78	.00	100.00

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 6A

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA

STABILITY CLASS A

CLASS FREQUENCY (PERCENT) = .33

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
(1)	3.57	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.57
(2)	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
C-3	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	4
(1)	3.57	3.57	.00	.00	.00	.00	3.57	.00	3.57	.00	.00	.00	.00	.00	.00	.00	.00	14.29
(2)	.01	.01	.00	.00	.00	.00	.01	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.05
4-7	3	0	0	0	0	3	2	3	0	0	0	0	1	0	0	1	0	13
(1)	10.71	.00	.00	.00	.00	10.71	7.14	10.71	.00	.00	.00	.00	3.57	.00	.00	3.57	.00	46.43
(2)	.03	.00	.00	.00	.00	.03	.02	.03	.00	.00	.00	.00	.01	.00	.00	.01	.00	.15
8-12	0	0	0	0	0	0	1	0	2	0	0	0	1	0	0	0	0	4
(1)	.00	.00	.00	.00	.00	.00	3.57	.00	7.14	.00	.00	.00	3.57	.00	.00	.00	.00	14.29
(2)	.00	.00	.00	.00	.00	.00	.01	.00	.02	.00	.00	.00	.01	.00	.00	.00	.00	.05
13-18	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	4
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.57	7.14	.00	3.57	.00	14.29
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.00	.01	.00	.05
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.14	.00	.00	.00	7.14
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.02
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	5	1	0	0	0	3	4	3	3	0	0	0	3	4	0	2	0	28
(1)	17.86	3.57	.00	.00	.00	10.71	14.29	10.71	10.71	.00	.00	.00	10.71	14.29	.00	7.14	.00	100.00
(2)	.06	.01	.00	.00	.00	.03	.05	.03	.03	.00	.00	.00	.03	.05	.00	.02	.00	.33

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 6B

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA

STABILITY CLASS B

CLASS FREQUENCY (PERCENT) = .78

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
C-3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
(1)	.00	.00	.00	.00	.00	.00	1.49	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.49
(2)	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
4-7	0	0	0	0	0	2	1	0	0	0	0	0	0	0	2	2	0	7
(1)	.00	.00	.00	.00	.00	2.99	1.49	.00	.00	.00	.00	.00	.00	.00	2.99	2.99	.00	10.45
(2)	.00	.00	.00	.00	.00	.02	.01	.00	.00	.00	.00	.00	.00	.00	.02	.02	.00	.08
8-12	0	0	0	0	0	0	2	7	3	0	0	1	0	2	0	10	0	25
(1)	.00	.00	.00	.00	.00	.00	2.99	10.45	4.48	.00	.00	1.49	.00	2.99	.00	14.93	.00	37.31
(2)	.00	.00	.00	.00	.00	.00	.02	.08	.03	.00	.00	.01	.00	.02	.00	.12	.00	.29
13-18	0	0	0	0	0	0	1	2	4	0	0	2	4	4	1	2	0	20
(1)	.00	.00	.00	.00	.00	.00	1.49	2.99	5.97	.00	.00	2.99	5.97	5.97	1.49	2.99	.00	29.85
(2)	.00	.00	.00	.00	.00	.00	.01	.02	.05	.00	.00	.02	.05	.05	.01	.02	.00	.23
19-24	0	0	0	0	0	0	0	0	1	0	0	0	0	5	2	5	0	13
(1)	.00	.00	.00	.00	.00	.00	.00	.00	1.49	.00	.00	.00	.00	7.46	2.99	7.46	.00	19.40
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.06	.02	.06	.00	.15
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.49	.00	1.49
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
ALL SPEEDS	0	0	0	0	0	2	5	9	8	0	0	3	4	11	5	20	0	67
(1)	.00	.00	.00	.00	.00	2.99	7.46	13.43	11.94	.00	.00	4.48	5.97	16.42	7.46	29.85	.00	100.00
(2)	.00	.00	.00	.00	.00	.02	.06	.10	.09	.00	.00	.03	.05	.13	.06	.23	.00	.78

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 6C

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA

STABILITY CLASS C

CLASS FREQUENCY (PERCENT) = 2.34

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
C-3	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	0	4
(1)	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.50	.00	.00	1.00	.00	1.99
(2)	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.01	.00	.00	.02	.00	.05
4-7	2	1	1	0	0	3	5	3	2	0	1	1	0	0	1	5	0	25
(1)	1.00	.50	.50	.00	.00	1.49	2.49	1.49	1.00	.00	.50	.50	.00	.00	.50	2.49	.00	12.44
(2)	.02	.01	.01	.00	.00	.03	.06	.03	.02	.00	.01	.01	.00	.00	.01	.06	.00	.29
8-12	9	3	1	0	0	0	9	23	10	0	0	0	2	4	5	20	0	86
(1)	4.48	1.49	.50	.00	.00	.00	4.48	11.44	4.98	.00	.00	.00	1.00	1.99	2.49	9.95	.00	42.79
(2)	.10	.03	.01	.00	.00	.00	.10	.27	.12	.00	.00	.00	.02	.05	.06	.23	.00	1.00
13-18	4	0	0	0	0	0	0	1	21	1	1	1	1	7	6	12	0	55
(1)	1.99	.00	.00	.00	.00	.00	.00	.50	10.45	.50	.50	.50	.50	3.48	2.99	5.97	.00	27.36
(2)	.05	.00	.00	.00	.00	.00	.00	.01	.24	.01	.01	.01	.01	.08	.07	.14	.00	.64
19-24	3	0	0	0	0	0	0	0	1	0	1	0	0	2	6	13	0	26
(1)	1.49	.00	.00	.00	.00	.00	.00	.00	.50	.00	.50	.00	.00	1.00	2.99	6.47	.00	12.94
(2)	.03	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01	.00	.00	.02	.07	.15	.00	.30
GT 24	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	5
(1)	1.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	1.00	.00	2.49
(2)	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.00	.06
ALL SPEEDS	20	4	2	0	0	3	15	27	34	1	3	2	4	13	19	54	0	201
(1)	9.95	1.99	1.00	.00	.00	1.49	7.46	13.43	16.92	.50	1.49	1.00	1.99	6.47	9.45	26.87	.00	100.00
(2)	.23	.05	.02	.00	.00	.03	.17	.31	.40	.01	.03	.02	.05	.15	.22	.63	.00	2.34

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 6D

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA

STABILITY CLASS D

CLASS FREQUENCY (PERCENT) = 52.66

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	3
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.02	.00	.00	.02	.00	.07
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.01	.00	.00	.01	.00	.03
C-3	54	33	40	34	52	52	95	45	24	16	12	6	7	11	18	45	0	544
(1)	1.19	.73	.88	.75	1.15	1.15	2.10	.99	.53	.35	.27	.13	.15	.24	.40	.99	.00	12.01
(2)	.63	.38	.47	.40	.60	.60	1.10	.52	.28	.19	.14	.07	.08	.13	.21	.52	.00	6.33
4-7	103	38	25	26	51	83	169	204	119	15	10	13	8	21	45	204	0	1134
(1)	2.27	.84	.55	.57	1.13	1.83	3.73	4.51	2.63	.33	.22	.29	.18	.46	.99	4.51	.00	25.04
(2)	1.20	.44	.29	.30	.59	.97	1.97	2.37	1.38	.17	.12	.15	.09	.24	.52	2.37	.00	13.19
8-12	157	41	15	14	10	31	85	180	291	33	20	28	93	105	65	317	0	1485
(1)	3.47	.91	.33	.31	.22	.68	1.88	3.98	6.43	.73	.44	.62	2.05	2.32	1.44	7.00	.00	32.80
(2)	1.83	.48	.17	.16	.12	.36	.99	2.09	3.38	.38	.23	.33	1.08	1.22	.76	3.69	.00	17.27
13-18	117	6	5	0	0	2	8	18	163	17	7	17	85	191	113	223	0	972
(1)	2.58	.13	.11	.00	.00	.04	.18	.40	3.60	.38	.15	.38	1.88	4.22	2.50	4.92	.00	21.47
(2)	1.36	.07	.06	.00	.00	.02	.09	.21	1.90	.20	.08	.20	.99	2.22	1.31	2.59	.00	11.30
19-24	55	0	0	0	0	0	0	4	20	2	4	1	19	77	54	109	0	345
(1)	1.21	.00	.00	.00	.00	.00	.00	.09	.44	.04	.09	.02	.42	1.70	1.19	2.41	.00	7.62
(2)	.64	.00	.00	.00	.00	.00	.00	.05	.23	.02	.05	.01	.22	.90	.63	1.27	.00	4.01
GT 24	1	0	0	0	0	0	0	0	1	0	0	0	2	8	5	28	0	45
(1)	.02	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.04	.18	.11	.62	.00	.99
(2)	.01	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.02	.09	.06	.33	.00	.52
ALL SPEEDS	487	118	85	74	113	168	357	451	619	83	53	65	215	413	300	927	0	4528
(1)	10.76	2.61	1.88	1.63	2.50	3.71	7.88	9.96	13.67	1.83	1.17	1.44	4.75	9.12	6.63	20.47	.00	100.00
(2)	5.66	1.37	.99	.86	1.31	1.95	4.15	5.24	7.20	.97	.62	.76	2.50	4.80	3.49	10.78	.00	52.66

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 6E

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA

STABILITY CLASS E

CLASS FREQUENCY (PERCENT) = 33.17

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	1	0	0	1	0	2	0	0	1	0	0	1	0	0	0	0	0	6
(1)	.04	.00	.00	.04	.00	.07	.00	.00	.04	.00	.00	.04	.00	.00	.00	.00	.00	.21
(2)	.01	.00	.00	.01	.00	.02	.00	.00	.01	.00	.00	.01	.00	.00	.00	.00	.00	.07
C-3	122	74	86	60	56	74	101	62	27	20	9	12	10	15	54	98	0	880
(1)	4.28	2.59	3.02	2.10	1.96	2.59	3.54	2.17	.95	.70	.32	.42	.35	.53	1.89	3.44	.00	30.86
(2)	1.42	.86	1.00	.70	.65	.86	1.17	.72	.31	.23	.10	.14	.12	.17	.63	1.14	.00	10.23
4-7	126	22	18	3	12	27	136	151	72	30	20	18	23	27	51	273	0	1009
(1)	4.42	.77	.63	.11	.42	.95	4.77	5.29	2.52	1.05	.70	.63	.81	.95	1.79	9.57	.00	35.38
(2)	1.47	.26	.21	.03	.14	.31	1.58	1.76	.84	.35	.23	.21	.27	.31	.59	3.17	.00	11.73
8-12	67	10	4	0	3	4	30	77	78	18	17	19	55	64	38	204	0	688
(1)	2.35	.35	.14	.00	.11	.14	1.05	2.70	2.73	.63	.60	.67	1.93	2.24	1.33	7.15	.00	24.12
(2)	.78	.12	.05	.00	.03	.05	.35	.90	.91	.21	.20	.22	.64	.74	.44	2.37	.00	8.00
13-18	24	0	0	1	0	0	1	6	20	4	1	0	19	31	35	91	0	233
(1)	.84	.00	.00	.04	.00	.00	.04	.21	.70	.14	.04	.00	.67	1.09	1.23	3.19	.00	8.17
(2)	.28	.00	.00	.01	.00	.00	.01	.07	.23	.05	.01	.00	.22	.36	.41	1.06	.00	2.71
19-24	1	0	1	1	0	0	0	0	2	0	0	0	2	4	3	20	0	34
(1)	.04	.00	.04	.04	.00	.00	.00	.00	.07	.00	.00	.00	.07	.14	.11	.70	.00	1.19
(2)	.01	.00	.01	.01	.00	.00	.00	.00	.02	.00	.00	.00	.02	.05	.03	.23	.00	.40
GT 24	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
(1)	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.04	.00	.07
(2)	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.01	.00	.02
ALL SPEEDS	341	106	109	66	71	107	268	297	200	72	47	50	109	141	181	687	0	2852
(1)	11.96	3.72	3.82	2.31	2.49	3.75	9.40	10.41	7.01	2.52	1.65	1.75	3.82	4.94	6.35	24.09	.00	100.00
(2)	3.97	1.23	1.27	.77	.83	1.24	3.12	3.45	2.33	.84	.55	.58	1.27	1.64	2.10	7.99	.00	33.17

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 6F

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA

STABILITY CLASS F

CLASS FREQUENCY (PERCENT) = 9.63

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
(1)	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12
(2)	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
C-3	41	32	23	20	19	18	36	30	17	8	11	4	8	9	14	37	0	327
(1)	4.95	3.86	2.78	2.42	2.29	2.17	4.35	3.62	2.05	.97	1.33	.48	.97	1.09	1.69	4.47	.00	39.49
(2)	.48	.37	.27	.23	.22	.21	.42	.35	.20	.09	.13	.05	.09	.10	.16	.43	.00	3.80
4-7	41	6	4	0	3	17	41	50	26	13	13	17	13	16	22	80	0	362
(1)	4.95	.72	.48	.00	.36	2.05	4.95	6.04	3.14	1.57	1.57	2.05	1.57	1.93	2.66	9.66	.00	43.72
(2)	.48	.07	.05	.00	.03	.20	.48	.58	.30	.15	.15	.20	.15	.19	.26	.93	.00	4.21
8-12	3	0	1	0	0	1	10	15	12	5	4	8	6	7	9	46	0	127
(1)	.36	.00	.12	.00	.00	.12	1.21	1.81	1.45	.60	.48	.97	.72	.85	1.09	5.56	.00	15.34
(2)	.03	.00	.01	.00	.00	.01	.12	.17	.14	.06	.05	.09	.07	.08	.10	.53	.00	1.48
13-18	0	0	0	0	0	0	0	1	0	0	0	0	3	1	0	5	0	10
(1)	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.36	.12	.00	.60	.00	1.21
(2)	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.03	.01	.00	.06	.00	.12
19-24	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.12
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.01
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	85	38	29	20	22	36	87	96	56	26	28	29	30	33	45	168	0	828
(1)	10.27	4.59	3.50	2.42	2.66	4.35	10.51	11.59	6.76	3.14	3.38	3.50	3.62	3.99	5.43	20.29	.00	100.00
(2)	.99	.44	.34	.23	.26	.42	1.01	1.12	.65	.30	.33	.34	.35	.38	.52	1.95	.00	9.63

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 6G

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA

STABILITY CLASS G

CLASS FREQUENCY (PERCENT) = 1.10

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
C-3	5	6	1	2	3	3	2	1	3	0	2	1	1	2	1	3	0	36
(1)	5.26	6.32	1.05	2.11	3.16	3.16	2.11	1.05	3.16	.00	2.11	1.05	1.05	2.11	1.05	3.16	.00	37.89
(2)	.06	.07	.01	.02	.03	.03	.02	.01	.03	.00	.02	.01	.01	.02	.01	.03	.00	.42
4-7	2	0	0	0	0	3	2	4	6	2	0	0	4	3	7	16	0	49
(1)	2.11	.00	.00	.00	.00	3.16	2.11	4.21	6.32	2.11	.00	.00	4.21	3.16	7.37	16.84	.00	51.58
(2)	.02	.00	.00	.00	.00	.03	.02	.05	.07	.02	.00	.00	.05	.03	.08	.19	.00	.57
8-12	0	0	0	0	0	0	1	1	0	0	1	2	1	1	0	3	0	10
(1)	.00	.00	.00	.00	.00	.00	1.05	1.05	.00	.00	1.05	2.11	1.05	1.05	.00	3.16	.00	10.53
(2)	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.01	.02	.01	.01	.00	.03	.00	.12
13-18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ALL SPEEDS	7	6	1	2	3	6	5	6	9	2	3	3	6	6	8	22	0	95
(1)	7.37	6.32	1.05	2.11	3.16	6.32	5.26	6.32	9.47	2.11	3.16	3.16	6.32	6.32	8.42	23.16	.00	100.00
(2)	.08	.07	.01	.02	.03	.07	.06	.07	.10	.02	.03	.03	.07	.07	.09	.26	.00	1.10

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

TABLE 6H

VERMONT YANKEE JAN 04 - DEC 04 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA

STABILITY CLASS ALL

CLASS FREQUENCY (PERCENT) = 100.00

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	2	0	1	1	0	2	0	0	2	0	0	1	1	0	0	1	0	11
(1)	.02	.00	.01	.01	.00	.02	.00	.00	.02	.00	.00	.01	.01	.00	.00	.01	.00	.13
(2)	.02	.00	.01	.01	.00	.02	.00	.00	.02	.00	.00	.01	.01	.00	.00	.01	.00	.13
C-3	223	146	150	116	130	147	237	138	72	44	34	23	27	37	87	185	0	1796
(1)	2.59	1.70	1.74	1.35	1.51	1.71	2.76	1.60	.84	.51	.40	.27	.31	.43	1.01	2.15	.00	20.89
(2)	2.59	1.70	1.74	1.35	1.51	1.71	2.76	1.60	.84	.51	.40	.27	.31	.43	1.01	2.15	.00	20.89
4-7	277	67	48	29	66	138	356	415	225	60	44	49	49	67	128	581	0	2599
(1)	3.22	.78	.56	.34	.77	1.60	4.14	4.83	2.62	.70	.51	.57	.57	.78	1.49	6.76	.00	30.22
(2)	3.22	.78	.56	.34	.77	1.60	4.14	4.83	2.62	.70	.51	.57	.57	.78	1.49	6.76	.00	30.22
8-12	236	54	21	14	13	36	138	303	396	56	42	58	158	183	117	600	0	2425
(1)	2.74	.63	.24	.16	.15	.42	1.60	3.52	4.61	.65	.49	.67	1.84	2.13	1.36	6.98	.00	28.20
(2)	2.74	.63	.24	.16	.15	.42	1.60	3.52	4.61	.65	.49	.67	1.84	2.13	1.36	6.98	.00	28.20
13-18	145	6	5	1	0	2	10	28	208	22	9	20	113	236	155	334	0	1294
(1)	1.69	.07	.06	.01	.00	.02	.12	.33	2.42	.26	.10	.23	1.31	2.74	1.80	3.88	.00	15.05
(2)	1.69	.07	.06	.01	.00	.02	.12	.33	2.42	.26	.10	.23	1.31	2.74	1.80	3.88	.00	15.05
19-24	59	0	1	1	0	0	0	4	25	2	5	1	21	90	65	147	0	421
(1)	.69	.00	.01	.01	.00	.00	.00	.05	.29	.02	.06	.01	.24	1.05	.76	1.71	.00	4.90
(2)	.69	.00	.01	.01	.00	.00	.00	.05	.29	.02	.06	.01	.24	1.05	.76	1.71	.00	4.90
GT 24	3	0	0	0	0	0	0	1	1	0	0	0	2	8	6	32	0	53
(1)	.03	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.02	.09	.07	.37	.00	.62
(2)	.03	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.02	.09	.07	.37	.00	.62
ALL SPEEDS	945	273	226	162	209	325	741	889	929	184	134	152	371	621	558	1880	0	8599
(1)	10.99	3.17	2.63	1.88	2.43	3.78	8.62	10.34	10.80	2.14	1.56	1.77	4.31	7.22	6.49	21.86	.00	100.00
(2)	10.99	3.17	2.63	1.88	2.43	3.78	8.62	10.34	10.80	2.14	1.56	1.77	4.31	7.22	6.49	21.86	.00	100.00

(1)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PAGE

(2)=PERCENT OF ALL GOOD OBSERVATIONS FOR THIS PERIOD

C= CALM (WIND SPEED LESS THAN OR EQUAL TO .95 MPH)

APPENDIX A

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
Supplemental Information
for 2004

Facility: Vermont Yankee Nuclear Power Station

Licensee: Entergy Nuclear Northeast Vermont Yankee

1A. ODCM DOSE AND DOSE RATE LIMITS -

	<u>ODCM Controls</u>	<u>Dose Limit</u>
a.	<u>Noble Gases</u>	
	3/4.3.1 Total body dose rate	500 mrem/yr
	3/4.3.1 Skin dose rate	3000 mrem/yr
	3/4.3.2 Gamma air dose	5 mrad in a quarter
	3/4.3.2 Gamma air dose	10 mrad in a year
	3/4.3.2 Beta air dose	10 mrad in a quarter
	3/4.3.2 Beta air dose	20 mrad in a year
b.	<u>Iodine-131, Iodine-133, Tritium and Radionuclides in Particulate Form With Half-Lives Greater Than 8 Days</u>	
	3/4.3.1 Organ dose rate	1500 mrem/yr
	3/4.3.3 Organ dose	7.5 mrem in a quarter
	3/4.3.3 Organ dose	15 mrem in a year
c.	<u>Liquids</u>	
	3/4.2.2 Total body dose	1.5 mrem in a quarter
	3/4.2.2 Total body dose	3 mrem in a year
	3/4.2.2 Organ dose	5 mrem in a quarter
	3/4.2.2 Organ dose	10 mrem in a year

2A. ODCM LIMITS - CONCENTRATION

	<u>ODCM Control</u>	<u>Limit</u>
a.	<u>Noble Gases</u>	No ECL Limits
b.	<u>Iodine-131, Iodine-133, Tritium and Radionuclides in Particulate Form With Half-Lives</u>	
	Greater Than 8 Days	No ECL Limits

c. Liquids

3/4.2.1 Sum of the fractions of ECL
excluding noble gases
(10CFR20, Appendix B,
Table 2, Column 2): $\leq 1.0E+01$

3/4.2.1 Total noble gas concentration: $\leq 2E-04 \mu\text{Ci/cc}$

3. AVERAGE ENERGY

Provided below are the average energy (E) of the radionuclide mixture in releases of fission and activation gases, if applicable.

a. Average gamma energy: Not Applicable

b. Average beta energy: Not Applicable

4. MEASUREMENTS AND APPROXIMATIONS OF TOTAL RADIOACTIVITY

Provided below are the methods used to measure or approximate the total radioactivity in effluents and the methods used to determine radionuclide composition.

a. Fission and Activation Gases

Continuous stack monitors monitor the gross Noble Gas radioactivity released from the plant stack. Because release rates are normally below the detection limit of these monitors, periodic grab samples are taken and analyzed for the gaseous isotopes present. These are used to calculate the individual isotopic releases indicated in Table 1B and the totals of Table 1A. The error involved in these steps may be approximately ± 23 percent.

b. Iodines

Continuous isokinetic samples are drawn from the plant stack through a particulate filter and charcoal cartridge. The filters and cartridges are normally removed weekly and are analyzed for Iodine-131, 132, 133, 134, and 135. The error involved in these steps may be approximately ± 18 percent.

c. Particulates

The particulate filters described in b. above are also counted for particulate radioactivity. The error involved in this sample is also approximately ± 18 percent.

d. Tritium

ODCM Table 4.3.1 requires as a minimum that grab samples from the plant stack be taken monthly and analyzed for tritium. The stack tritium collection has been upgraded with silica gel columns and continuous sampling of stack effluents. The error involved in this sample is approximately ± 10 percent.

e. Waste Oil

Prior to issuing the permit to burn a drum of radioactively contaminated waste oil, one liter of the oil is analyzed by gamma spectroscopy to determine concentrations of radionuclides that meet or exceed the LLD for all of the liquid phase radionuclides listed in ODCM Table 4.2.1.

Monthly, samples from drums that were issued burn permits are sent to the contracted laboratory for compositing and analysis. The lab analyzes for tritium, alpha, Fe-55, Sr-89, and Sr-90 on the composite sample.

The error involved in this sample is approximately ± 15 percent.

f. Liquid Effluents

If radioactive liquid effluents are to be released from the facility, they are continuously monitored. Measurements are also required on a representative sample of each batch of radioactive liquid effluents released. For each batch, station records are retained of the total activity (mCi) released, concentration ($\mu\text{Ci/ml}$) of gross radioactivity, volume (liters), and approximate total quantity of water (liters) used to dilute the liquid effluent prior to release to the Connecticut River.

Each batch of radioactive liquid effluents to be released is analyzed for gross gamma and gamma isotopic radioactivity. A monthly proportional composite sample, comprising an aliquot of each batch released during a month, is analyzed for tritium and gross alpha radioactivity. A quarterly proportional composite sample, comprising an aliquot of each batch released during a quarter, is analyzed for Sr-89, Sr-90, and Fe-55.

5. BATCH RELEASES

a. Liquid

There were no routine liquid batch releases during the reporting period.

b. Gaseous

Waste oil was burned during the first and fourth quarters and were considered to be a continuous release.

The gaseous releases from burning waste oil are treated as either batch or continuous releases based on the total hours of burning in a calendar quarter.

All other atmospheric discharges were recorded as continuous elevated releases from the main plant stack.

6. ABNORMAL RELEASES

a. Liquid

There were no non-routine liquid releases during the reporting period.

b. Gaseous

There were no non-routine gaseous releases (measured) during the reporting period.

APPENDIX B

LIQUID HOLDUP TANKS

<u>Requirement</u>	Technical Specification 3.8.D.1 limits the quantity of radioactive material contained in any outside tank. With the quantity of radioactive material in any outside tank exceeding the limits of Technical Specification 3.8.D.1, a description of the events leading to this condition is required in the next annual Radioactive Effluent Release Report per 10.1.
<u>Response:</u>	The limits of Technical Specification 3.8.D.1 were not exceeded during this reporting period.

APPENDIX C

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

Requirement: Radioactive liquid effluent monitoring instrumentation channels are required to be operable in accordance with ODCM Table 3.1.1. If an inoperable radioactive liquid effluent monitoring instrument is not returned to operable status prior to a release pursuant to Note 4 of Table 3.1.1, an explanation in the next annual Radioactive Effluent Release Report of the reason(s) for delay in correcting the inoperability are required per ODCM Section 10.1.

Response: Since the requirements of ODCM Table 3.1.1 governing the operability of radioactive liquid effluent monitoring instrumentation were met for this reporting period, no response is required.

APPENDIX D

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

Requirement: Radioactive gaseous effluent monitoring instrumentation channels are required to be operable in accordance with ODCM Table 3.1.2. If inoperable gaseous effluent monitoring instrumentation is not returned to operable status within 30 days pursuant to Note 5 of Table 3.1.2, an explanation in the next annual Radioactive Effluent Release Report of the reason(s) for the delay in correcting the inoperability is required per ODCM Section 10.1.

Response: Since the requirements of ODCM Table 3.1.2 governing the operability of radioactive gaseous effluent monitoring instrumentation were met for this reporting period, no response is required.

APPENDIX E

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Requirement: The radiological environmental monitoring program is conducted in accordance with ODCM Control 3/4.5.1. With milk samples no longer available from one or more of the sample locations required by ODCM Table 3.5.1, ODCM 10.1 requires the following to be included in the next annual Radioactive Effluent Release Report: (1) identify the cause(s) of the sample(s) no longer being available, (2) identify the new location(s) for obtaining available replacement samples and (3) include revised ODCM figure(s) and table(s) reflecting the new location(s).

Response: No changes were needed in the milk sampling locations as specified in ODCM Table 3.5.1 and implemented in ODCM Table 7.1 during the reporting year.

APPENDIX F

LAND USE CENSUS

Requirement: A land use census is conducted in accordance with ODCM Control 3/4.5.2. With a land use census identifying a location(s) that yields at least a 20 percent greater dose or dose commitment than the values currently being calculated pursuant to ODCM Control 4.3.3, the new location(s) must be identified in the next Annual Radioactive Effluent Release Report.

Response: The Land Use Census was completed during the third quarter of 2004. No significant land use changes from the previous year's census were identified. As a result, no locations were identified which yielded a 20 percent greater dose or dose commitment than the values currently being calculated pursuant to ODCM Control 4.3.3.

APPENDIX G

PROCESS CONTROL PROGRAM

Requirement: ODCM Section 10.1 requires that licensee initiated changes to the Process Control Program (PCP) be submitted to the Commission in the annual Radioactive Effluent Release Report for the period in which the change(s) was made.

Response: There were no changes made to the Process Control Program during this reporting period.

APPENDIX H

OFF-SITE DOSE CALCULATION MANUAL

Requirement: Technical Specification 6.7.B.1 requires that licensee initiated changes to the Off-Site Dose Calculation Manual (ODCM) be submitted to the Commission in the annual Radioactive Effluent Release Report for the period in which the change(s) was made effective.

Response: There were no changes made to the ODCM during this reporting period.

APPENDIX I

RADIOACTIVE LIQUID, GASEOUS, AND SOLID WASTE TREATMENT SYSTEMS

Requirement: ODCM Section 10.4 requires that licensee initiated major changes to the radioactive waste systems (liquid, gaseous, and solid) be reported to the Commission in the annual Radioactive Effluent Release Report for the period in which the evaluation was reviewed by the Plant Operation Review Committee.

Response: There were no licensee-initiated major changes to the radioactive waste systems during this reporting period.

APPENDIX J

ON-SITE DISPOSAL OF SEPTIC/SILT/SOIL WASTE

Requirement: Off-Site Dose Calculation Manual, Appendices B, F and I require that the dose impact due to on-site disposal of septic waste, cooling tower silt and sand/soil type materials during the reporting year and from previous years be reported to the Nuclear Regulatory Commission in the annual Radioactive Effluent Report if disposals occur during the reporting year. Entergy Nuclear Northeast Vermont Yankee will report in the Annual Radioactive Effluent Release Report a list of the radionuclides present and the total radioactivity associated with the on-site disposal activities on the Vermont Yankee site.

Response: There was one on-site disposal of soil during the reporting year. The total volume of the soil spread in 2004 was 28 m³. The total activity spread on the 1.9 acres (southern) on-site disposal field from 2004 spreadings and from previous years was as follows:

<u>Activity Spread in 2004</u>		Activity from 2004, plus Activity from Past Disposals Decayed to 11/17/2004
<u>Nuclide</u>	<u>(Ci)</u>	<u>(Ci)</u>
Mn-54	-	1.98E-07
Co-60	-	2.66E-05
Zn-65	-	9.54E-07
Cs-134	-	8.36E-10
Cs-137	2.55E-06	7.34E-05
Ce-141	-	5.16E-19

The maximum organ (including whole body) incremental dose from material spread in 2004 was estimated to be 3.56E-03 mrem/yr. The maximum organ dose from all past spreading operations, including the material spread in 2004, totaled 1.21E-01 mrem/yr. These calculated values are within the 1 mrem/yr limit applied during the period of operational control of the site. The projected hypothetical dose for the period following the loss of operational control of the site area due to all spreading operations to-date is 3.67E-01 mrem/yr versus a 5 mrem/yr dose limit.