



Entergy Nuclear Operations, Inc.
Vermont Yankee
P.O. Box 0250
320 Governor Hunt Road
Vernon, VT 05354
Tel 802 257 7711

Michael J. Colomb
Site Vice President

May 14, 2009

BVY 09-037

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

**Subject: 2008 Radioactive Effluent Release Report
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28**

Dear Sir or Madam,

In accordance with Vermont Yankee (VY) Technical Specifications (TS) 6.6.D, attached is a copy of the annual 2008 Radioactive Effluent Release Report.

In addition, VY TS 6.7.B requires reporting of changes to the Off-Site Dose Calculation Manual (ODCM). The changes made to the ODCM during 2008 as provided in Appendix H of the subject report.

There are no new regulatory commitments being made in this submittal.

Should you have any questions concerning this submittal, please contact Mr. David J. Mannai at (802) 451-3304.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Colomb".

[MJC/JTM]

Attachment 1: Radioactive Effluent Release Report for 2008
Attachment 2: CD-ROM with Revisions 31 and 32 of the VY ODCM

cc listing (next page)

IE48
A009
NRR

cc: Mr. Samuel J. Collins, Region 1 Administrator
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Mr. James S. Kim, Project Manager
U.S. Nuclear Regulatory Commission
Mail Stop 08C2A
Washington, DC 20555

USNRC Resident Inspector
Entergy Nuclear Vermont Yankee, LLC
320 Governor Hunt Road
Vernon, Vermont 05354

Mr. David O'Brien, Commissioner
VT Department of Public Service
112 State Street – Drawer 20
Montpelier, VT 05620

Vermont Department of Health
Division of Radiological Health
Attn: Bill Irwin
P.O. Box 70
Burlington, VT 05402-0070

Massachusetts Department of Public Health
Radiation Control Program
Attn: Bob Walker, Director
Schrafft Center – Suite 1M21
529 Main Street
Charlestown, MA 02129

Docket No. 50-271
BVY 09-037

Attachment 1

Vermont Yankee Nuclear Power Station
2008 Radioactive Effluent Release Report

RADIOACTIVE EFFLUENT
RELEASE REPORT
FOR 2008
INCLUDING ANNUAL RADIOLOGICAL
IMPACT ON MAN

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

Prepared by Jo-Ann Pelczar / 4/30/09
Jo-Ann Pelczar, Rad. Eng., AREVA NP Date

Preparation coordinated by: Stephen P. Skibniowski / 4/30/09
Stephen P. Skibniowski, Senior Environmental Specialist (RFMP) Date

Reviewed by: Stephen C. McAvoy / 5/6/09
Stephen C. McAvoy, Chemistry Supervisor Date

Approved for Distribution: JA Hardy / 5-7-2009
Jeffery A. Hardy, Chem. Supt. Date

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1
2.0 METEOROLOGICAL DATA.....	2
3.0 DOSE ASSESSMENT	3
3.1 DOSES FROM LIQUID EFFLUENTS.....	3
3.2 DOSES FROM NOBLE GASES.....	3
3.3 DOSES FROM IODINE-131, IODINE-133, TRITIUM, AND RADIONUCLIDES IN PARTICULATE FORM WITH HALF-LIVES GREATER THAN 8 DAYS.....	3
3.4 WHOLE-BODY DOSES IN UNRESTRICTED AREAS FROM DIRECT RADIATION.....	4
3.5 DOSES FROM ON-SITE DISPOSAL OF SEPTIC WASTE AND COOLING TOWER SILT	5
3.6 ON-SITE RECREATIONAL ACTIVITIES.....	5
REFERENCES	6
APPENDIX A -SUPPLEMENTAL INFORMATION	A-1
APPENDIX B -LIQUID HOLDUP TANKS	B-1
APPENDIX C -RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION	C-1
APPENDIX D -RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION.....	D-1
APPENDIX E - RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM	E-1
APPENDIX F - LAND USE CENSUS	F-1
APPENDIX G -PROCESS CONTROL PROGRAM.....	G-1
APPENDIX H -OFF-SITE DOSE CALCULATION MANUAL.....	H-1
APPENDIX I - RADIOACTIVE LIQUID, GASEOUS AND SOLID WASTE TREATMENT SYSTEMS	I-1
APPENDIX J - ON-SITE DISPOSAL OF SEPTIC/SILT/SOIL WASTE	J-1

LIST OF TABLES

<u>Number</u>	<u>Title</u>	<u>Page</u>
1A	2008 Gaseous Effluents - Summation of All Releases	7
1B	2008 Gaseous Effluents - Elevated Releases	9
1C	2008 Gaseous Effluents - Ground Level Releases	11
1D	Gaseous Effluents – Non-routine Releases	13
2A	Liquid Effluents - Summation of All Releases	14
2B	Liquid Effluents – Non-routine Releases	15
3	2008 Solid Waste and Irradiated Fuel Shipments	16
4A	Maximum Off-Site Doses/Dose Commitments to Members of the Public from Liquid and Gaseous Effluents for 2008 (10CFR50, Appendix I)	18
4B	Maximum Annual Dose Commitments from Direct External Radiation, Plus Liquid and Gaseous Effluents for 2008 (40CFR190)	19
4C	Receptor Locations	20
4D	Usage Factors for Gaseous Pathways	21
4E	Environmental Parameters for Gaseous Effluents	22
5A to 5H	Annual (2008) Summary of Lower Level Joint Frequency Distribution	24-31
6A to 6H	Annual (2008) Summary of Upper Level Joint Frequency Distribution	32-39

Radiological Effluent Release Report for 2008
[Including Annual Radiological Impact on Man]
Entergy Nuclear Vermont Yankee, LLC

1.0 INTRODUCTION

Tables 1 through 3 lists 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 2008 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 2008. Radioactive effluents reported in Tables 1 and 2 were used to determine the resulting doses for 2008.

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 plant'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 3/4.4, "Total Dose," have been exceeded during the year. Since the conditions indicated in the action statement under ODCM 3/4.4 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 2008 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.

χ/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 2008 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."

There were no recorded noble gas releases during the report period, 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. Table 4B provides an estimation of the total annual dose impact (including contributions from iodine and particulates) associated with the highest exposed member of the public for demonstration of compliance to the dose standard contained in 40CFR Part 190 for the uranium fuel cycle.

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 the Independent Spent Fuel Storage Installation (ISFSI), the low level radioactive materials 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 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 40CFR Part 190. For direct radiation, no credit for actual occupancy time is taken (i.e., occupancy is equal to 100%).

For 2008, 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 the single disposal (septic waste) in 2008 and in combination with all past spreadings.

3.6 On-Site Recreational Activities

During 2008, 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 32, Entergy Nuclear Vermont Yankee, LLC , dated 06/24/08.
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
Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2008
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. Average release rate for period	μCi/sec	ND	ND	
3. Percent of ODCM limit (1)	%	ND	ND	
B. Iodines				
1. Total Iodine	Ci	ND	5.02E-06	±1.80E+01
2. Average release rate for period	μCi/sec	ND	6.32E-07	
3. Percent of ODCM limit (2)	%	4.84E-03	1.76E-02	
C. Particulates				
1. Particulates with T-1/2>8 days	Ci	ND	ND	±1.80E+01
2. Average release rate for period	μCi/sec	ND	ND	
3. Percent of ODCM limit (3)	%	(3)	(3)	
4. Gross alpha radioactivity	Ci	ND	ND	
D. Tritium				
1. Total release	Ci	1.16E+00	1.68E+00	±1.80E+01
2. Average release rate for period	μCi/sec	1.45E-01	2.11E-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 IA
(Continued)

Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2008
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. Average release rate for period	μCi/sec	ND	ND	
3. Percent of ODCM limit (1)	%	ND	ND	
B. Iodines				
1. Total Iodine	Ci	7.53E-05	8.96E-05	±1.80E+01
2. Average release rate for period	μCi/sec	9.48E-06	1.12E-05	
3. Percent of ODCM limit (2)	%	3.29E-02	4.22E-02	
C. Particulates				
1. Particulates with T-1/2>8 days	Ci	2.63E-05	ND	±1.80E+01
2. Average release rate for period	μCi/sec	3.31E-06	ND	
3. Percent of ODCM limit (3)	%	(3)	(3)	
4. Gross alpha radioactivity	Ci	ND	ND	
D. Tritium				
1. Total release	Ci	1.88E+00	7.90E-01	±1.80E+01
2. Average release rate for period	μCi/sec	1.27E-01	9.94E-02	
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 1B
Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2008
Gaseous Effluents - Elevated Releases

	Continuous Mode			Batch Mode (1)	
	Units	Quarter		Quarter	
Nuclides Released		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	(1)	(1)
2. Iodines					
Iodine-131	Ci	ND	5.02E-06		
Iodine-133	Ci	ND	ND		
Iodine-135	Ci	ND	ND		
Total for Period	Ci	ND	5.02E-06	(1)	(1)
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	ND	ND		
Chromium-51	Ci	ND	ND		
Cobalt-58	Ci	ND	ND		
Cobalt-60	Ci	ND	ND		
Cerium-141	Ci	ND	ND		
Zinc-65	Ci	ND	ND		
Total for Period	Ci	ND	ND	(1)	(1)

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

TABLE IB
(Continued)

**Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2008
Gaseous Effluents - Elevated Releases**

Nuclides Released	Continuous Mode		Batch Mode (1)		
	Units	Quarter		Quarter	
		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	1.06E-05	2.64E-05		
Iodine-133	Ci	6.47E-05	6.32E-05		
Iodine-135	Ci	ND	ND		
Total for Period	Ci	7.53E-05	8.96E-05		
3. Particulates					
Strontium-89	Ci	2.63E-05	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	ND	ND		
Chromium-51	Ci	ND	ND		
Cobalt-58	Ci	ND	ND		
Cobalt-60	Ci	ND	ND		
Cerium-141	Ci	ND	ND		
Cerium-144	Ci	ND	ND		
Zinc-65	Ci	ND	ND		
Total for Period	Ci	2.63E-05	ND		

ND Not Detected at the Plant Stack

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

TABLE 1C

Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
First and Second Quarters, 2008
Gaseous Effluents - Ground Level Releases ⁽²⁾

Nuclides Released	Continuous Mode		Batch Mode		
	Units	Quarter		Quarter	
		1(1)	2(1)	1(1)	2(1)
1. Fission Gases					
Krypton-85	Ci				
Krypton-85m	Ci				
Krypton-87	Ci				
Krypton-88	Ci				
Xenon-133	Ci				
Xenon-135	Ci				
Xenon-135m	Ci				
Xenon-138	Ci				
Unidentified	Ci				
Total for Period	Ci				
2. Iodines					
Iodine-131	Ci				
Iodine-133	Ci				
Iodine-I 35	Ci				
Total for Period	Ci				
3. Particulates					
Strontium-89	Ci				
Strontium-90	Ci				
Cesium-134	Ci				
Cesium- 137	Ci				
Barium-Lanthanum-140	Ci				
Manganese-54	Ci				
Chromium-51	Ci				
Cobalt-58	Ci				
Cobalt-60	Ci				
Cerium-141	Ci				
Zinc-65	Ci				
Iron-55	Ci				
Total for Period	Ci				

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

(2) No Radioactively Contaminated Used Oil was burned during 2008.

TABLE IC
(Continued)

Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters, 2008
Gaseous Effluents - Ground Level Releases⁽²⁾

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

(1) There were no ground level gaseous releases for this reporting period.
(2) No Radioactively Contaminated Used Oil was burned during 2008

TABLE 1D
Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
for 2008
Gaseous Effluents - Nonroutine Releases

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

TABLE 2A
Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
for 2008
Liquid Effluents - Summation of All Releases

There were no liquid releases during this reporting period.

TABLE 2B
Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
for 2008
Liquid Effluents Nonroutine Releases

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

TABLE 3
Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
First and Second Quarters for 2008
Solid Waste and Irradiated Fuel Shipments

A.. Solid Waste Shipped Off-Site for Burial or Disposal (not irradiated fuel)

1. Type of Waste

Shipped from VY for Burial	Unit	1st & 2nd Quarters	Est. Total Error %
a. Spent resins, filter sludges, etc.	m3	0.0	+/- 2.50 E+01
	Ci	0.0	+/- 2.50 E+01
b. Dry Compressable waste, equipment, etc.	m3	0.00	+/- 2.50 E+01
	Ci	0.0000E+00	+/- 2.50 E+01
c. Irradiated components, control rods, etc.	m3	0.0	+/- 2.50 E+01
	Ci	0.0	+/- 2.50 E+01

Shipped from Processor(s) for Burial	Unit	1st & 2nd Quarters	Est. Total Error %
a. Spent resins, filter sludges, etc.	m3	2.67	+/- 2.50 E+01
	Ci	3.6670E+02	+/- 2.50 E+01
b. Dry Compressable waste, equipment, etc.	m3	44.22	+/- 2.50 E+01
	Ci	7.6274E-01	+/- 2.50 E+01
c. Irradiated components, control rods, etc.	m3	0.0	+/- 2.50 E+01
	Ci	0.0	+/- 2.50 E+01

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

a. spent resins filter sludges		b. Dry Compactable waste, equipment		c. Irradiated components, control rods, etc.	
Isotope	Percent (1)	Isotope	Percent	Isotope	Percent
Co-60	20.95%	Cr-51	9.65%	na	na
Fe-55	35.81%	Mn-54	3.89%		
Zn-65	19.17%	Fe-55	55.79%		
Ni-63	9.63%	Fe-59	0.91%		
Mn-54	5.87%	Co-58	0.99%		
Cs-137	7.70%	Co-60	16.74%		
		Zn-65	10.05%		
		Zr-95	1.13%		

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

3. Disposition of Solid Waste Shipments (1st & 2nd Quarters)

No. of Shipments	From VY	From Processor	Mode	To Processor	To Burial
	X		truck / rail		Energy Solutions, Clive UT
10	X		truck	E/S-Oak Ridge TN	
5	X		truck	Studs vik-Erwin, TN	
18		E/S-Bear Creek TN	truck		Energy Solutions, Clive UT
1		Studs vik-Memphis TN	truck		Energy Solutions, Clive UT
8		Studs vik-Erwin TN	truck		E/S -Barnwell SC

B. Irradiated Fuel Shipments (Disposition): None

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

Supplimental Information	VY to processor	VY to Burial	Processors to Burial
Class of Solid Waste Shipped	AU, B	AU, B	AU, A, B, C
Type of Containers Used	STC/Type A	STC	STC, Type A, Type B
Solidification Agent or Absorbent Used	none	none	none

Completed By: Mark Y. Ustah 4-1-09

Reviewed By: [Signature] 4/1/09

TABLE 3
Entergy Nuclear Vermont Yankee
Effluent and Waste Disposal Annual Report
Third and Fourth Quarters for 2008
Solid Waste and Irradiated Fuel Shipments

A. Solid Waste Shipped Off-Site for Burial or Disposal (not irradiated fuel)

1. Type of Waste

Shipped from VY for Burial	Unit	3rd & 4th Quarters	Est. Total Error %
a. Spent resins, filter sludges, etc.	m3	0.0	+/- 2.50 E+01
	Ci	0.0	+/- 2.50 E+01
b. Dry Compressable waste, equipment, etc.	m3	0.0	+/- 2.50 E+01
	Ci	0.0	+/- 2.50 E+01
c. Irradiated components, control rods, etc.	m3	0.0	+/- 2.50 E+01
	Ci	0.0	+/- 2.50 E+01

Shipped from Processor(s) for Burial	Unit	3rd & 4th Quarters	Est. Total Error %
a. Spent resins, filter sludges, etc.	m3	13.71	+/- 2.50 E+01
	Ci	9.1100E+01	+/- 2.50 E+01
b. Dry Compressable waste, equipment, etc.	m3	31.07	+/- 2.50 E+01
	Ci	5.2247E+00	+/- 2.50 E+01
c. Irradiated components, control rods, etc.	m3	0.0	+/- 2.50 E+01
	Ci	0.0	+/- 2.50 E+01

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

a. spent resins filter sludges		b. Dry Compactable waste, equipment		c. Irradiated components, control rods, etc.	
Isotope	Percent (1)	Isotope	Percent	Isotope	Percent
Co-60	20.95%	Cr-51	9.65%	na	na
Fe-55	35.81%	Mn-54	3.89%		
Zn-65	19.17%	Fe-55	55.79%		
Ni-63	9.63%	Fe-59	0.91%		
Mn-54	5.87%	Co-58	0.99%		
Cs-137	7.70%	Co-60	16.74%		
		Zn-65	10.05%		
		Zr-95	1.13%		

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

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

No. of Shipments	From VY	From Processor	Mode	To Processor	To Burial
1	X		truck	E/S - Barnwell Proc.	
14	X		truck	E/S - Oak Ridge TN	
0	X		truck	Studsvik-Erwin, TN	
1		E/S - Barnwell Proc.	truck		Energy Solutions, Clive UT
21		E/S - Bear Creek TN	truck		Energy Solutions, Clive UT
0		Studsvik-Memphis TN	truck		Energy Solutions, Clive UT
0		Studsvik-Erwin TN	truck		E/S - Barnwell SC

B. Irradiated Fuel Shipments (Disposition): None

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

Supplemental Information	VY to processor	VY to Burial	Processors to Burial
Class of Solid Waste Shipped	A,AU		A, C
Type of Containers Used	STC/Type A		STC, Type A & B
Solidification Agent or Absorbent Used	none		none

Completed By: M. G. Vada 3/31/09
 Reviewed By: [Signature] 3/31/09

TABLE 4A

Entergy Nuclear Vermont Yankee
 Maximum * Off-Site Doses/Dose Commitments to Members of the Public
 from Liquid and Gaseous Effluents
 for 2008
 (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	5.35E-04	5.08E-04	5.66E-04	3.34E-04	1.94E-03
Footnotes	(1)	(2)	(3)	(4)	
Noble Gases					
Beta Air (mrad)	--	--	--	--	--
Footnotes	(d)	(d)	(d)	(d)	(d)
Gamma Air (mrad)	--	--	--	--	--
Footnotes	(d)	(d)	(d)	(d)	(d)
Direct Radiation					
	4.36	4.22	4.46	3.26	16.30 (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/All Organs/WNW /2400 meters from stack
 - (2) CHILD/THYROID/WNW /2400 meters from stack
 - (3) CHILD/THYROID/WNW/2400 meters from stack
 - (4) CHILD/THYROID/NW/2900 meters from stack

"All Organs" include equal impact to Liver, Kidney, Lung, GI-LLI, Thyroid and Whole Body.

TABLE 4B

Entergy Nuclear Vermont Yankee
 Maximum Annual Dose Commitments from Direct External Radiation,
 Plus Liquid and Gaseous Effluents for 2008^(*)
 (40CFR190)

Pathway	Total Body (mrem)	Maximum Organ (mrem)	Thyroid (mrem)
Direct External (a)	16.30	16.30	16.30
Liquids (b)	N/A	N/A	N/A
Gases (c)	1.38E-06	1.39E-06	1.62E-06
Annual Total (d)	16.30	16.30	16.30

- (*) 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 2008.
- (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 Vermont Yankee

Sector	Site Boundary ⁽¹⁾ (Meters)	Nearest Resident ⁽²⁾ (Meters)	Nearest Milk Animal ⁽²⁾ Within 10 km (Meters)
N	400	1400	--
NNE	350	1384	5520 (cows)
NE	350	1255	--
ENE	400	966	--
E	500	935	--
ESE	700	1915	--
SE	750	1963	3600 (cows)
SSE	850	2044	--
S	385	644 ⁽³⁾	2220 (cows)
SSW	300	451	--
SW	250	418	8200 (cows)
WSW	250	451	9730 (cows)
W	300	628	820 (cows)
WNW	400	1062	--
NW	550	2253	--
NNW	550	1738	--

(1) Vermont Yankee UFSAR Figure 2.2-5.

(2) The location(s) given are based on information from the Vermont Yankee 2008 Land Use Census and are relative to the plant stack. Gardens are assumed to be present at all resident locations.

(3) The nearest residence was located in the S sector at 385 m from the plant stack through July 2008, but was vacated prior the Land Use Census conducted in September 2008. It was conservatively assumed that this residence was present for the entire year.

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

(From Reference 2, 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 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 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, Pergammon Press).

TABLE 5A

VERMONT YANKEE JAN 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS A

CLASS FREQUENCY (PERCENT) = 2.79

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	0	5	2	1	5	2	2	1	0	0	0	0	0	0	0	0	0	18
(1)	.00	2.05	.82	.41	2.05	.82	.82	.41	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.38
(2)	.00	.06	.02	.01	.06	.02	.02	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.21
4-7	25	4	1	1	4	17	11	9	8	0	0	0	6	2	1	33	0	122
(1)	10.25	1.64	.41	.41	1.64	6.97	4.51	3.69	3.28	.00	.00	.00	2.46	.82	.41	13.52	.00	50.00
(2)	.29	.05	.01	.01	.05	.19	.13	.10	.09	.00	.00	.00	.07	.02	.01	.38	.00	1.39
8-12	23	3	0	0	1	3	1	3	3	3	1	1	6	10	5	31	0	94
(1)	9.43	1.23	.00	.00	.41	1.23	.41	1.23	1.23	1.23	.41	.41	2.46	4.10	2.05	12.70	.00	38.52
(2)	.26	.03	.00	.00	.01	.03	.01	.03	.03	.03	.01	.01	.07	.11	.06	.35	.00	1.07
13-18	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	6	0	10
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.41	.41	.00	.00	.00	.41	.41	2.46	.00	4.10
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.01	.01	.07	.00	.11
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	48	12	3	2	10	22	14	13	12	4	1	1	12	13	7	70	0	244
(1)	19.67	4.92	1.23	.82	4.10	9.02	5.74	5.33	4.92	1.64	.41	.41	4.92	5.33	2.87	28.69	.00	100.00
(2)	.55	.14	.03	.02	.11	.25	.16	.15	.14	.05	.01	.01	.14	.15	.08	.80	.00	2.79

(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 5B

VERMONT YANKEE JAN 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA STABILITY CLASS B CLASS FREQUENCY (PERCENT) = 2.98

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	6	2	0	2	4	2	3	2	0	1	0	0	0	0	1	1	0	24
(1)	2.30	.77	.00	.77	1.53	.77	1.15	.77	.00	.38	.00	.00	.00	.00	.38	.38	.00	9.20
(2)	.07	.02	.00	.02	.05	.02	.03	.02	.00	.01	.00	.00	.00	.00	.01	.01	.00	.27
4-7	25	4	1	1	19	26	12	14	7	4	2	5	3	6	5	23	0	157
(1)	9.58	1.53	.38	.38	7.28	9.96	4.60	5.36	2.68	1.53	.77	1.92	1.15	2.30	1.92	8.81	.00	60.15
(2)	.29	.05	.01	.01	.22	.30	.14	.16	.08	.05	.02	.06	.03	.07	.06	.26	.00	1.79
8-12	11	3	0	2	1	3	0	1	8	2	1	0	4	10	7	18	0	71
(1)	4.21	1.15	.00	.77	.38	1.15	.00	.38	3.07	.77	.38	.00	1.53	3.83	2.68	6.90	.00	27.20
(2)	.13	.03	.00	.02	.01	.03	.00	.01	.09	.02	.01	.00	.05	.11	.08	.21	.00	.81
13-18	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2	5	0	9
(1)	.00	.00	.00	.38	.00	.00	.00	.00	.00	.00	.00	.00	.00	.38	.77	1.92	.00	3.45
(2)	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.06	.00	.10
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	42	9	1	6	24	31	15	17	15	7	3	5	7	17	15	47	0	261
(1)	16.09	3.45	.38	2.30	9.20	11.88	5.75	6.51	5.75	2.68	1.15	1.92	2.68	6.51	5.75	18.01	.00	100.00
(2)	.48	.10	.01	.07	.27	.35	.17	.19	.17	.08	.03	.06	.08	.19	.17	.54	.00	2.98

(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 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS C

CLASS FREQUENCY (PERCENT) = 5.52

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	13	5	9	10	16	14	7	0	1	5	0	0	3	0	2	0	99
(1)	2.90	2.69	1.04	1.86	2.07	3.31	2.90	1.45	.00	.21	1.04	.00	.00	.62	.00	.41	.00	20.50
(2)	.16	.15	.06	.10	.11	.18	.16	.08	.00	.01	.06	.00	.00	.03	.00	.02	.00	1.13
4-7	28	18	6	7	25	23	28	19	27	8	4	4	8	11	17	40	0	273
(1)	5.80	3.73	1.24	1.45	5.18	4.76	5.80	3.93	5.59	1.66	.83	.83	1.66	2.28	3.52	8.28	.00	56.52
(2)	.32	.21	.07	.08	.29	.26	.32	.22	.31	.09	.05	.05	.09	.13	.19	.46	.00	3.12
8-12	15	5	1	2	0	1	1	1	12	4	4	1	11	14	8	18	0	98
(1)	3.11	1.04	.21	.41	.00	.21	.21	.21	2.48	.83	.83	.21	2.28	2.90	1.66	3.73	.00	20.29
(2)	.17	.06	.01	.02	.00	.01	.01	.01	.14	.05	.05	.01	.13	.16	.09	.21	.00	1.12
13-18	0	0	0	0	0	0	1	0	3	0	0	0	0	5	3	1	0	13
(1)	.00	.00	.00	.00	.00	.00	.21	.00	.62	.00	.00	.00	.00	1.04	.62	.21	.00	2.69
(2)	.00	.00	.00	.00	.00	.00	.01	.00	.03	.00	.00	.00	.00	.06	.03	.01	.00	.15
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	57	36	12	18	35	40	44	27	42	13	13	5	19	33	28	61	0	483
(1)	11.80	7.45	2.48	3.73	7.25	8.28	9.11	5.59	8.70	2.69	2.69	1.04	3.93	6.83	5.80	12.63	.00	100.00
(2)	.65	.41	.14	.21	.40	.46	.50	.31	.48	.15	.15	.06	.22	.38	.32	.70	.00	5.52

(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 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA STABILITY CLASS D CLASS FREQUENCY (PERCENT) = 43.15

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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
(1)	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03
(2)	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
C-3	130	74	66	46	63	61	92	80	67	53	40	56	35	43	101	137	0	1144
(1)	3.44	1.96	1.75	1.22	1.67	1.62	2.44	2.12	1.78	1.40	1.06	1.48	.93	1.14	2.68	3.63	.00	30.31
(2)	1.49	.85	.75	.53	.72	.70	1.05	.91	.77	.61	.46	.64	.40	.49	1.15	1.57	.00	13.08
4-7	173	38	16	18	49	63	93	246	267	45	30	50	124	120	92	325	0	1749
(1)	4.58	1.01	.42	.48	1.30	1.67	2.46	6.52	7.07	1.19	.79	1.32	3.29	3.18	2.44	8.61	.00	46.34
(2)	1.98	.43	.18	.21	.56	.72	1.06	2.81	3.05	.51	.34	.57	1.42	1.37	1.05	3.72	.00	20.00
8-12	73	17	0	5	3	5	6	17	101	18	6	7	74	174	108	132	0	746
(1)	1.93	.45	.00	.13	.08	.13	.16	.45	2.68	.48	.16	.19	1.96	4.61	2.86	3.50	.00	19.77
(2)	.83	.19	.00	.06	.03	.06	.07	.19	1.15	.21	.07	.08	.85	1.99	1.23	1.51	.00	8.53
13-18	4	0	0	0	0	0	0	0	16	4	0	0	3	54	32	14	0	127
(1)	.11	.00	.00	.00	.00	.00	.00	.00	.42	.11	.00	.00	.08	1.43	.85	.37	.00	3.37
(2)	.05	.00	.00	.00	.00	.00	.00	.00	.18	.05	.00	.00	.03	.62	.37	.16	.00	1.45
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	6
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.05	.00	.00	.16
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.02	.00	.00	.07
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.03
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.01
ALL SPEEDS	380	129	82	70	115	129	191	343	451	120	76	113	236	395	336	608	0	3774
(1)	10.07	3.42	2.17	1.85	3.05	3.42	5.06	9.09	11.95	3.18	2.01	2.99	6.25	10.47	8.90	16.11	.00	100.00
(2)	4.34	1.47	.94	.80	1.31	1.47	2.18	3.92	5.16	1.37	.87	1.29	2.70	4.52	3.84	6.95	.00	43.15

(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 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS E

CLASS FREQUENCY (PERCENT) = 28.79

WIND DIRECTION FROM

SPEED MPH	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	VRBL	TOTAL
CALM	1	0	2	0	0	1	0	2	0	0	0	0	2	0	0	0	0	8
(1)	.04	.00	.08	.00	.00	.04	.00	.08	.00	.00	.00	.00	.08	.00	.00	.00	.00	.32
(2)	.01	.00	.02	.00	.00	.01	.00	.02	.00	.00	.00	.00	.02	.00	.00	.00	.00	.09
C-3	54	29	16	14	14	27	48	75	119	140	178	212	235	171	189	152	0	1673
(1)	2.14	1.15	.64	.56	.56	1.07	1.91	2.98	4.73	5.56	7.07	8.42	9.33	6.79	7.51	6.04	.00	66.44
(2)	.62	.33	.18	.16	.16	.31	.55	.86	1.36	1.60	2.03	2.42	2.69	1.95	2.16	1.74	.00	19.13
4-7	27	3	1	4	1	8	26	42	62	34	27	29	76	76	85	193	0	694
(1)	1.07	.12	.04	.16	.04	.32	1.03	1.67	2.46	1.35	1.07	1.15	3.02	3.02	3.38	7.66	.00	27.56
(2)	.31	.03	.01	.05	.01	.09	.30	.48	.71	.39	.31	.33	.87	.87	.97	2.21	.00	7.93
8-12	2	0	0	0	0	0	0	5	49	5	1	1	10	27	21	12	0	133
(1)	.08	.00	.00	.00	.00	.00	.00	.20	1.95	.20	.04	.04	.40	1.07	.83	.48	.00	5.28
(2)	.02	.00	.00	.00	.00	.00	.00	.06	.56	.06	.01	.01	.11	.31	.24	.14	.00	1.52
13-18	0	0	0	0	0	0	0	2	5	1	0	0	1	1	0	0	0	10
(1)	.00	.00	.00	.00	.00	.00	.00	.08	.20	.04	.00	.00	.04	.04	.00	.00	.00	.40
(2)	.00	.00	.00	.00	.00	.00	.00	.02	.06	.01	.00	.00	.01	.01	.00	.00	.00	.11
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	84	32	19	18	15	36	74	126	235	180	206	242	324	275	295	357	0	2518
(1)	3.34	1.27	.75	.71	.60	1.43	2.94	5.00	9.33	7.15	8.18	9.61	12.87	10.92	11.72	14.18	.00	100.00
(2)	.96	.37	.22	.21	.17	.41	.85	1.44	2.69	2.06	2.36	2.77	3.70	3.14	3.37	4.08	.00	28.79

(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 5F

VERMONT YANKEE JAN 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA

STABILITY CLASS F

CLASS FREQUENCY (PERCENT) = 13.88

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	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2
(1)	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.16
(2)	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.02
C-3	12	8	5	4	2	7	13	24	51	95	198	263	225	126	71	41	0	1145
(1)	.99	.66	.41	.33	.16	.58	1.07	1.98	4.20	7.83	16.31	21.66	18.53	10.38	5.85	3.38	.00	94.32
(2)	.14	.09	.06	.05	.02	.08	.15	.27	.58	1.09	2.26	3.01	2.57	1.44	.81	.47	.00	13.09
4-7	0	0	0	0	1	1	2	4	6	9	5	7	10	1	7	11	0	64
(1)	.00	.00	.00	.00	.08	.08	.16	.33	.49	.74	.41	.58	.82	.08	.58	.91	.00	5.27
(2)	.00	.00	.00	.00	.01	.01	.02	.05	.07	.10	.06	.08	.11	.01	.08	.13	.00	.73
8-12	0	0	0	0	0	0	0	0	0	0	0	0	1	.1	1	0	0	3
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.08	.08	.00	.00	.25
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.01	.00	.00	.03
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	12	8	5	5	3	8	15	28	57	104	203	270	237	128	79	52	0	1214
(1)	.99	.66	.41	.41	.25	.66	1.24	2.31	4.70	8.57	16.72	22.24	19.52	10.54	6.51	4.28	.00	100.00
(2)	.14	.09	.06	.06	.03	.09	.17	.32	.65	1.19	2.32	3.09	2.71	1.46	.90	.59	.00	13.88

(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 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

35.0 FT WIND DATA STABILITY CLASS G CLASS FREQUENCY (PERCENT) = 2.89

SPEED MPH	WIND DIRECTION FROM																TOTAL		
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		VRBL	
CALM	0	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	.00
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
C-3	5	1	4	1	1	0	2	7	10	28	47	46	38	31	19	7	0	247	
(1)	1.98	.40	1.58	.40	.40	.00	.79	2.77	3.95	11.07	18.58	18.18	15.02	12.25	7.51	2.77	.00	97.63	
(2)	.06	.01	.05	.01	.01	.00	.02	.08	.11	.32	.54	.53	.43	.35	.22	.08	.00	2.82	
4-7	0	0	0	0	1	0	0	0	1	1	1	0	0	0	2	0	0	6	
(1)	.00	.00	.00	.00	.40	.00	.00	.00	.40	.40	.40	.00	.00	.00	.79	.00	.00	2.37	
(2)	.00	.00	.00	.00	.01	.00	.00	.00	.01	.01	.01	.00	.00	.00	.02	.00	.00	.07	
8-12	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	
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	5	1	4	1	2	0	2	7	11	29	48	46	38	31	21	7	0	253	
(1)	1.98	.40	1.58	.40	.79	.00	.79	2.77	4.35	11.46	18.97	18.18	15.02	12.25	8.30	2.77	.00	100.00	
(2)	.06	.01	.05	.01	.02	.00	.02	.08	.13	.33	.55	.53	.43	.35	.24	.08	.00	2.89	

(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 08 - DEC 08 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	2	2	0	1	0	2	0	0	0	0	3	0	0	0	0	11
(1)	.01	.00	.02	.02	.00	.01	.00	.02	.00	.00	.00	.00	.03	.00	.00	.00	.00	.13
(2)	.01	.00	.02	.02	.00	.01	.00	.02	.00	.00	.00	.00	.03	.00	.00	.00	.00	.13
C-3	221	132	98	77	99	115	174	196	247	318	468	577	533	374	381	340	0	4350
(1)	2.53	1.51	1.12	.88	1.13	1.31	1.99	2.24	2.82	3.64	5.35	6.60	6.09	4.28	4.36	3.89	.00	49.73
(2)	2.53	1.51	1.12	.88	1.13	1.31	1.99	2.24	2.82	3.64	5.35	6.60	6.09	4.28	4.36	3.89	.00	49.73
4-7	278	67	25	31	100	138	172	334	378	101	69	95	227	216	209	625	0	3065
(1)	3.18	.77	.29	.35	1.14	1.58	1.97	3.82	4.32	1.15	.79	1.09	2.60	2.47	2.39	7.15	.00	35.04
(2)	3.18	.77	.29	.35	1.14	1.58	1.97	3.82	4.32	1.15	.79	1.09	2.60	2.47	2.39	7.15	.00	35.04
8-12	124	28	1	9	5	12	8	27	173	32	13	10	106	236	150	211	0	1145
(1)	1.42	.32	.01	.10	.06	.14	.09	.31	1.98	.37	.15	.11	1.21	2.70	1.71	2.41	.00	13.09
(2)	1.42	.32	.01	.10	.06	.14	.09	.31	1.98	.37	.15	.11	1.21	2.70	1.71	2.41	.00	13.09
13-18	4	0	0	1	0	0	1	2	25	6	0	0	4	62	38	26	0	169
(1)	.05	.00	.00	.01	.00	.00	.01	.02	.29	.07	.00	.00	.05	.71	.43	.30	.00	1.93
(2)	.05	.00	.00	.01	.00	.00	.01	.02	.29	.07	.00	.00	.05	.71	.43	.30	.00	1.93
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	6
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.02	.00	.00	.07
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.02	.00	.00	.07
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.01
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.01
ALL SPEEDS	628	227	126	120	204	266	355	561	823	457	550	682	873	892	781	1202	0	8747
(1)	7.18	2.60	1.44	1.37	2.33	3.04	4.06	6.41	9.41	5.22	6.29	7.80	9.98	10.20	8.93	13.74	.00	100.00
(2)	7.18	2.60	1.44	1.37	2.33	3.04	4.06	6.41	9.41	5.22	6.29	7.80	9.98	10.20	8.93	13.74	.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 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION
 297.0 FT WIND DATA STABILITY CLASS A CLASS FREQUENCY (PERCENT) = .49
 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	1	2	3	1	1	0	0	1	0	1	0	0	0	10
(1)	.00	.00	.00	.00	2.33	4.65	6.98	2.33	2.33	.00	.00	2.33	.00	2.33	.00	.00	.00	23.26
(2)	.00	.00	.00	.00	.01	.02	.03	.01	.01	.00	.00	.01	.00	.01	.00	.00	.00	.11
4-7	0	0	0	0	2	2	6	2	0	0	0	0	0	0	0	0	0	12
(1)	.00	.00	.00	.00	4.65	4.65	13.95	4.65	.00	.00	.00	.00	.00	.00	.00	.00	.00	27.91
(2)	.00	.00	.00	.00	.02	.02	.07	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
8-12	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	4
(1)	.00	.00	.00	.00	.00	.00	2.33	.00	.00	.00	.00	.00	.00	.00	.00	6.98	.00	9.30
(2)	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.05
13-18	2	0	0	0	0	0	0	0	1	0	0	0	3	2	0	4	0	12
(1)	4.65	.00	.00	.00	.00	.00	.00	.00	2.33	.00	.00	.00	6.98	4.65	.00	9.30	.00	27.91
(2)	.02	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.03	.02	.00	.05	.00	.14
19-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	11.63	.00	11.63
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.06
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	2	0	0	0	3	4	10	3	2	0	0	-1	3	3	0	12	0	43
(1)	4.65	.00	.00	.00	6.98	9.30	23.26	6.98	4.65	.00	.00	2.33	6.98	6.98	.00	27.91	.00	100.00
(2)	.02	.00	.00	.00	.03	.05	.11	.03	.02	.00	.00	.01	.03	.03	.00	.14	.00	.49

(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 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA STABILITY CLASS B CLASS FREQUENCY (PERCENT) = .94

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	1	0	0	0	0	0	0	0	0	0	2
(1)	.00	.00	.00	.00	.00	.00	1.22	1.22	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.44
(2)	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
4-7	0	0	0	0	1	4	3	0	0	0	0	0	0	0	0	1	0	9
(1)	.00	.00	.00	.00	1.22	4.88	3.66	.00	.00	.00	.00	.00	.00	.00	.00	1.22	.00	10.98
(2)	.00	.00	.00	.00	.01	.05	.03	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.10
8-12	2	0	0	0	0	7	11	7	1	0	0	0	1	0	0	8	0	37
(1)	2.44	.00	.00	.00	.00	8.54	13.41	8.54	1.22	.00	.00	.00	1.22	.00	.00	9.76	.00	45.12
(2)	.02	.00	.00	.00	.00	.08	.13	.08	.01	.00	.00	.00	.01	.00	.00	.09	.00	.42
13-18	2	0	0	0	0	0	1	3	2	0	2	0	3	3	0	7	0	23
(1)	2.44	.00	.00	.00	.00	.00	1.22	3.66	2.44	.00	2.44	.00	3.66	3.66	.00	8.54	.00	28.05
(2)	.02	.00	.00	.00	.00	.00	.01	.03	.02	.00	.02	.00	.03	.03	.00	.08	.00	.26
19-24	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	7	0	10
(1)	.00	.00	.00	.00	.00	.00	.00	.00	1.22	1.22	1.22	.00	.00	.00	.00	8.54	.00	12.20
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.01	.00	.00	.00	.00	.08	.00	.11
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	1.22	.00	1.22
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
ALL SPEEDS	4	0	0	0	1	11	16	11	4	1	3	0	4	3	0	24	0	82
(1)	4.88	.00	.00	.00	1.22	13.41	19.51	13.41	4.88	1.22	3.66	.00	4.88	3.66	.00	29.27	.00	100.00
(2)	.05	.00	.00	.00	.01	.13	.18	.13	.05	.01	.03	.00	.05	.03	.00	.27	.00	.94

(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 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION
 297.0 FT WIND DATA STABILITY CLASS C CLASS FREQUENCY (PERCENT) = 2.81

SPEED MPH	WIND DIRECTION FROM																TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		VRBL
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	0	0	0	1	1	2	0	0	0	0	0	0	0	0	5	0	
(1)	.41	.00	.00	.00	.41	.41	.81	.00	.00	.00	.00	.00	.00	.00	.00	2.03	.00	
(2)	.01	.00	.00	.00	.01	.01	.02	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	
4-7	4	1	0	1	0	20	17	7	2	0	0	0	0	0	1	5	0	
(1)	1.63	.41	.00	.41	.00	8.13	6.91	2.85	.81	.00	.00	.00	.00	.00	.41	2.03	.00	
(2)	.05	.01	.00	.01	.00	.23	.19	.08	.02	.00	.00	.00	.00	.00	.01	.06	.00	
8-12	13	1	0	0	2	4	13	19	8	2	0	2	3	4	4	21	0	
(1)	5.28	.41	.00	.00	.81	1.63	5.28	7.72	3.25	.81	.00	.81	1.22	1.63	1.63	8.54	.00	
(2)	.15	.01	.00	.00	.02	.05	.15	.22	.09	.02	.00	.02	.03	.05	.05	.24	.00	
13-18	8	5	0	0	1	2	1	0	6	0	1	1	2	8	7	21	0	
(1)	3.25	2.03	.00	.00	.41	.81	.41	.00	2.44	.00	.41	.41	.81	3.25	2.85	8.54	.00	
(2)	.09	.06	.00	.00	.01	.02	.01	.00	.07	.00	.01	.01	.02	.09	.08	.24	.00	
19-24	0	0	0	1	0	0	0	0	0	0	0	0	0	2	3	11	0	
(1)	.00	.00	.00	.41	.00	.00	.00	.00	.00	.00	.00	.00	.00	.81	1.22	4.47	.00	
(2)	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.03	.13	.00	
GT 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.81	.00	
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	
ALL SPEEDS	26	7	0	2	4	27	33	26	16	2	1	3	5	14	15	65	0	
(1)	10.57	2.85	.00	.81	1.63	10.98	13.41	10.57	6.50	.81	.41	1.22	2.03	5.69	6.10	26.42	.00	
(2)	.30	.08	.00	.02	.05	.31	.38	.30	.18	.02	.01	.03	.06	.16	.17	.74	.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 6D

VERMONT YANKEE JAN 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION
 297.0 FT WIND DATA STABILITY CLASS D CLASS FREQUENCY (PERCENT) = 43.53

SPEED MPH	WIND DIRECTION FROM																TOTAL	
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW		VRBL
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	56	33	36	42	33	64	70	38	26	19	12	8	8	5	19	68	0	
(1)	1.47	.87	.95	1.10	.87	1.68	1.84	1.00	.68	.50	.32	.21	.21	.13	.50	1.79	.00	
(2)	.64	.38	.41	.48	.38	.73	.80	.43	.30	.22	.14	.09	.09	.06	.22	.78	.00	
4-7	83	28	17	17	52	85	144	127	90	35	11	20	19	27	17	177	0	
(1)	2.18	.74	.45	.45	1.37	2.23	3.78	3.34	2.36	.92	.29	.53	.50	.71	.45	4.65	.00	
(2)	.95	.32	.19	.19	.59	.97	1.65	1.45	1.03	.40	.13	.23	.22	.31	.19	2.02	.00	
8-12	104	22	5	7	37	39	58	149	235	45	31	37	86	121	68	220	0	
(1)	2.73	.58	.13	.18	.97	1.02	1.52	3.91	6.17	1.18	.81	.97	2.26	3.18	1.79	5.78	.00	
(2)	1.19	.25	.06	.08	.42	.45	.66	1.70	2.69	.51	.35	.42	.98	1.38	.78	2.52	.00	
13-18	60	15	0	4	48	20	11	9	82	9	6	12	89	151	80	170	0	
(1)	1.58	.39	.00	.11	1.26	.53	.29	.24	2.15	.24	.16	.32	2.34	3.97	2.10	4.46	.00	
(2)	.69	.17	.00	.05	.55	.23	.13	.10	.94	.10	.07	.14	1.02	1.73	.91	1.94	.00	
19-24	12	0	0	3	16	10	0	0	17	4	0	0	22	55	24	90	0	
(1)	.32	.00	.00	.08	.42	.26	.00	.00	.45	.11	.00	.00	.58	1.44	.63	2.36	.00	
(2)	.14	.00	.00	.03	.18	.11	.00	.00	.19	.05	.00	.00	.25	.63	.27	1.03	.00	
GT 24	0	0	0	0	3	2	0	0	1	0	0	0	4	11	4	14	0	
(1)	.00	.00	.00	.00	.08	.05	.00	.00	.03	.00	.00	.00	.11	.29	.11	.37	.00	
(2)	.00	.00	.00	.00	.03	.02	.00	.00	.01	.00	.00	.00	.05	.13	.05	.16	.00	
ALL SPEEDS	315	98	58	73	189	220	283	323	451	112	60	77	228	370	212	739	0	
(1)	8.27	2.57	1.52	1.92	4.96	5.78	7.43	8.48	11.84	2.94	1.58	2.02	5.99	9.72	5.57	19.41	.00	
(2)	3.60	1.12	.66	.83	2.16	2.52	3.24	3.69	5.16	1.28	.69	.88	2.61	4.23	2.42	8.45	.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 6E

VERMONT YANKEE JAN 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA		STABILITY CLASS E																CLASS FREQUENCY (PERCENT) = 37.83	
		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	1	0	2	0	0	0	0	0	0	0	1	0	0	4
(1)		.00	.00	.00	.00	.03	.00	.06	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.12
(2)		.00	.00	.00	.00	.01	.00	.02	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.05
C-3		108	81	52	52	49	111	130	80	35	23	13	6	16	22	36	76	0	890
(1)		3.26	2.45	1.57	1.57	1.48	3.35	3.93	2.42	1.06	.70	.39	.18	.48	.66	1.09	2.30	.00	26.90
(2)		1.23	.93	.59	.59	.56	1.27	1.49	.91	.40	.26	.15	.07	.18	.25	.41	.87	.00	10.17
4-7		140	25	12	6	29	59	167	187	108	35	23	12	31	39	42	271	0	1186
(1)		4.23	.76	.36	.18	.88	1.78	5.05	5.65	3.26	1.06	.70	.36	.94	1.18	1.27	8.19	.00	35.84
(2)		1.60	.29	.14	.07	.33	.67	1.91	2.14	1.23	.40	.26	.14	.35	.45	.48	3.10	.00	13.56
8-12		71	5	1	1	22	24	27	83	90	28	19	19	66	78	49	242	0	825
(1)		2.15	.15	.03	.03	.66	.73	.82	2.51	2.72	.85	.57	.57	1.99	2.36	1.48	7.31	.00	24.93
(2)		.81	.06	.01	.01	.25	.27	.31	.95	1.03	.32	.22	.22	.75	.89	.56	2.77	.00	9.43
13-18		18	0	0	0	10	5	3	13	55	14	5	3	26	36	20	127	0	335
(1)		.54	.00	.00	.00	.30	.15	.09	.39	1.66	.42	.15	.09	.79	1.09	.60	3.84	.00	10.12
(2)		.21	.00	.00	.00	.11	.06	.03	.15	.63	.16	.06	.03	.30	.41	.23	1.45	.00	3.83
19-24		0	0	0	0	0	1	0	4	28	4	1	1	6	7	0	15	0	67
(1)		.00	.00	.00	.00	.00	.03	.00	.12	.85	.12	.03	.03	.18	.21	.00	.45	.00	2.02
(2)		.00	.00	.00	.00	.00	.01	.00	.05	.32	.05	.01	.01	.07	.08	.00	.17	.00	.77
GT 24		0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
(1)		.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06
(2)		.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
ALL SPEEDS		337	111	65	59	111	200	329	369	316	104	61	41	145	182	148	731	0	3309
(1)		10.18	3.35	1.96	1.78	3.35	6.04	9.94	11.15	9.55	3.14	1.84	1.24	4.38	5.50	4.47	22.09	.00	100.00
(2)		3.85	1.27	.74	.67	1.27	2.29	3.76	4.22	3.61	1.19	.70	.47	1.66	2.08	1.69	8.36	.00	37.83

(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 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA

STABILITY CLASS F

CLASS FREQUENCY (PERCENT) = 12.76

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	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	4
(1)	.09	.09	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.09	.00	.00	.00	.00	.36
(2)	.01	.01	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.01	.00	.00	.00	.00	.05
C-3	42	47	40	23	32	45	73	36	28	14	12	9	11	7	11	24	0	454
(1)	3.76	4.21	3.58	2.06	2.87	4.03	6.54	3.23	2.51	1.25	1.08	.81	.99	.63	.99	2.15	.00	40.68
(2)	.48	.54	.46	.26	.37	.51	.83	.41	.32	.16	.14	.10	.13	.08	.13	.27	.00	5.19
4-7	60	7	5	3	21	28	60	77	22	22	17	19	23	16	22	98	0	500
(1)	5.38	.63	.45	.27	1.88	2.51	5.38	6.90	1.97	1.97	1.52	1.70	2.06	1.43	1.97	8.78	.00	44.80
(2)	.69	.08	.06	.03	.24	.32	.69	.88	.25	.25	.19	.22	.26	.18	.25	1.12	.00	5.72
8-12	22	0	0	0	2	5	15	11	7	4	5	7	11	7	3	42	0	141
(1)	1.97	.00	.00	.00	.18	.45	1.34	.99	.63	.36	.45	.63	.99	.63	.27	3.76	.00	12.63
(2)	.25	.00	.00	.00	.02	.06	.17	.13	.08	.05	.06	.08	.13	.08	.03	.48	.00	1.61
13-18	0	0	0	0	0	0	0	0	7	0	0	0	4	2	1	3	0	17
(1)	.00	.00	.00	.00	.00	.00	.00	.00	.63	.00	.00	.00	.36	.18	.09	.27	.00	1.52
(2)	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.05	.02	.01	.03	.00	.19
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	125	55	45	26	55	78	148	124	65	40	34	35	50	32	37	167	0	1116
(1)	11.20	4.93	4.03	2.33	4.93	6.99	13.26	11.11	5.82	3.58	3.05	3.14	4.48	2.87	3.32	14.96	.00	100.00
(2)	1.43	.63	.51	.30	.63	.89	1.69	1.42	.74	.46	.39	.40	.57	.37	.42	1.91	.00	12.76

(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 08 - DEC 08 METEOROLOGICAL DATA JOINT FREQUENCY DISTRIBUTION

297.0 FT WIND DATA STABILITY CLASS G CLASS FREQUENCY (PERCENT) = 1.63

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	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	4	1	2	2	1	6	9	4	3	2	0	1	2	3	2	0	42
(1)	.00	2.80	.70	1.40	1.40	.70	4.20	6.29	2.80	2.10	1.40	.00	.70	1.40	2.10	1.40	.00	29.37
(2)	.00	.05	.01	.02	.02	.01	.07	.10	.05	.03	.02	.00	.01	.02	.03	.02	.00	.48
4-7	2	3	1	0	4	4	11	8	2	3	2	4	6	5	3	9	0	67
(1)	1.40	2.10	.70	.00	2.80	2.80	7.69	5.59	1.40	2.10	1.40	2.80	4.20	3.50	2.10	6.29	.00	46.85
(2)	.02	.03	.01	.00	.05	.05	.13	.09	.02	.03	.02	.05	.07	.06	.03	.10	.00	.77
8-12	3	0	0	0	1	1	2	1	2	2	3	3	4	3	0	6	0	31
(1)	2.10	.00	.00	.00	.70	.70	1.40	.70	1.40	1.40	2.10	2.10	2.80	2.10	.00	4.20	.00	21.68
(2)	.03	.00	.00	.00	.01	.01	.02	.01	.02	.02	.03	.03	.05	.03	.00	.07	.00	.35
13-18	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	3
(1)	.00	.00	.00	.00	.00	.00	.00	.70	.70	.00	.00	.00	.00	.70	.00	.00	.00	2.10
(2)	.00	.00	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00	.01	.00	.00	.00	.03
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	5	7	2	2	7	6	19	19	9	8	7	7	11	11	6	17	0	143
(1)	3.50	4.90	1.40	1.40	4.90	4.20	13.29	13.29	6.29	5.59	4.90	4.90	7.69	7.69	4.20	11.89	.00	100.00
(2)	.06	.08	.02	.02	.08	.07	.22	.22	.10	.09	.08	.08	.13	.13	.07	.19	.00	1.63

(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 6H

VERMONT YANKEE JAN 08 - DEC 08 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	1	1	0	0	1	0	2	0	1	0	0	0	1	0	1	0	0	8
(1)	.01	.01	.00	.00	.01	.00	.02	.00	.01	.00	.00	.00	.01	.00	.01	.00	.00	.09
(2)	.01	.01	.00	.00	.01	.00	.02	.00	.01	.00	.00	.00	.01	.00	.01	.00	.00	.09
C-3	207	165	129	119	118	224	285	165	94	59	39	24	36	37	69	175	0	1945
(1)	2.37	1.89	1.47	1.36	1.35	2.56	3.26	1.89	1.07	.67	.45	.27	.41	.42	.79	2.00	.00	22.24
(2)	2.37	1.89	1.47	1.36	1.35	2.56	3.26	1.89	1.07	.67	.45	.27	.41	.42	.79	2.00	.00	22.24
4-7	289	64	35	27	109	202	408	408	224	95	53	55	79	87	85	561	0	2781
(1)	3.30	.73	.40	.31	1.25	2.31	4.66	4.66	2.56	1.09	.61	.63	.90	.99	.97	6.41	.00	31.79
(2)	3.30	.73	.40	.31	1.25	2.31	4.66	4.66	2.56	1.09	.61	.63	.90	.99	.97	6.41	.00	31.79
8-12	215	28	6	8	64	80	127	270	343	81	58	68	171	213	124	542	0	2398
(1)	2.46	.32	.07	.09	.73	.91	1.45	3.09	3.92	.93	.66	.78	1.95	2.44	1.42	6.20	.00	27.42
(2)	2.46	.32	.07	.09	.73	.91	1.45	3.09	3.92	.93	.66	.78	1.95	2.44	1.42	6.20	.00	27.42
13-18	90	20	0	4	59	27	16	26	154	23	14	16	127	203	108	332	0	1219
(1)	1.03	.23	.00	.05	.67	.31	.18	.30	1.76	.26	.16	.18	1.45	2.32	1.23	3.80	.00	13.94
(2)	1.03	.23	.00	.05	.67	.31	.18	.30	1.76	.26	.16	.18	1.45	2.32	1.23	3.80	.00	13.94
19-24	12	0	0	4	16	11	0	4	46	9	2	1	28	64	27	128	0	352
(1)	.14	.00	.00	.05	.18	.13	.00	.05	.53	.10	.02	.01	.32	.73	.31	1.46	.00	4.02
(2)	.14	.00	.00	.05	.18	.13	.00	.05	.53	.10	.02	.01	.32	.73	.31	1.46	.00	4.02
GT 24	0	0	0	0	3	2	0	2	1	0	0	0	4	11	4	17	0	44
(1)	.00	.00	.00	.00	.03	.02	.00	.02	.01	.00	.00	.00	.05	.13	.05	.19	.00	.50
(2)	.00	.00	.00	.00	.03	.02	.00	.02	.01	.00	.00	.00	.05	.13	.05	.19	.00	.50
ALL SPEEDS	814	278	170	162	370	546	838	875	863	267	166	164	446	615	418	1755	0	8747
(1)	9.31	3.18	1.94	1.85	4.23	6.24	9.58	10.00	9.87	3.05	1.90	1.87	5.10	7.03	4.78	20.06	.00	100.00
(2)	9.31	3.18	1.94	1.85	4.23	6.24	9.58	10.00	9.87	3.05	1.90	1.87	5.10	7.03	4.78	20.06	.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 2008

Facility: Vermont Yankee Nuclear Power Station

Licensee: Entergy Nuclear 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 Greater Than 8 Days</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

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

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 ODCM Section 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 2008. With the exception of the nearest residence in the S sector at 385 meters from the plant stack being vacated in July 2008, 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: During the reporting period, two changes, Revision No. 31 and Revision No. 32 were made to the ODCM.

The major changes included in Revision 31 to the ODCM were:

- Updated dispersion factors, dose/dose rate equations and dose factors associated with calculating dose and dose rates from gaseous effluents released via the plant stack to reflect a revised nominal plant stack flow rate of 146,160 cfm,
- Added equations, definitions and methodology to be used in the calculation of the site boundary dose contribution from spent fuel casks stored on the ISFSI,
- Revised action statement associated with the gross radioactivity release rate from the Steam Jet Air Ejector (SJAE) (Section 3/4.3.7) to remove the shutdown action statement and added reference to Technical Specification 3/4.8.K,
- Removed Downey-Spencer and Cheney Hill dairy farms (TM-25 and TM-26) from the REMP sampling program due to the farms being out of business (2007).
- Added Appendix J to capture BVY 04-110 and NVY 05-090, "Soil Spreading Correspondence – Vermont Yankee and the Nuclear Regulatory Commission."

The major changes included in Revision 32 to the ODCM were:

- Updated factors used in the Equation 6-27A, which is used to calculate the dose contribution from N-16 in the turbine to the critical site boundary receptor location. These factors were updated based on an evaluation that was performed due to changes in plant operating conditions (i.e., 20% power uprate, installation of a shield plate over the high pressure section of the turbine and changes to the site landscape).

Complete copies of Revision 31 and Revision 32 of the ODCM are included on the attached CD-ROM.

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 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 septic waste during the reporting year. The total volume of the septic waste spread in 2008 was 11,000 gallons. There was no detectable activity in the septic sludge that was disposed of during 2008. The total activity spread on the 1.9 acres (southern) on-site disposal field from 2008 spreading and from previous years was as follows:

<u>Nuclide</u>	<u>Activity Spread in 2008 (Ci)</u>	<u>Activity from 2008, plus Activity from All Past Disposals Decayed to 10/10/2008 (Ci)</u>
Mn-54	0.00E+00	1.05E-08
Co-60	0.00E+00	9.16E-06
Zn-65	0.00E+00	4.79E-09
Cs-134	0.00E+00	6.68E-09
Cs-137	0.00E+00	2.84E-06
Ce-141	0.00E+00	0.00E+00

The maximum organ dose from all past spreading operations, including the material spread in 2008, totaled 1.00E-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 3.79E-01 mrem/yr versus a 5 mrem/yr dose limit.