

**From:** "DeWald, Lynn" <ldewald@entergy.com>  
**To:** <rle@nrc.gov>, <tlpatton@anl.gov>  
**Date:** 09/30/2006 9:54:25 AM  
**Subject:** VY 2005 DMR's

Attached are the 2005 DMR's for VY. Lynn

Lynn DeWald

Entergy Nuclear Vermont Yankee, LLC

320 Governor Hunt Road

Vernon, VT 05354

802-258-5526 (phone)

802-258-5865 (fax)

802-380-4493 (cell)

**Mail Envelope Properties** (451E76F4.CEC : 5 : 56556)

**Subject:** VY 2005 DMR's  
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**From:** "DeWald, Lynn" <ldewald@entergy.com>

**Created By:** ldewald@entergy.com

**Recipients**

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anl.gov  
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NPDES State Reports September 2005 DMR.pdf	309873	
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**Entergy Nuclear Northeast**  
Entergy Nuclear Operations, Inc.  
Vermont Yankee  
322 Governor Hunt Rd.  
P.O. Box 157  
Vernon, VT 05354  
Tel 802-257-7711

11 February 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for January 2005

Dear Ms. Tanner,

As required in Section D.2. of the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for January 2005.

The simulated temperature increase to the Connecticut River for January 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 4.02° F on 14 January 2005 when the permitted limit was 13.4 °F. This occurred at a river flow of 6,157 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of January ranged from 5,060 cfs to 33,465 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for January 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 33.20 °F to 34.03 °F during January 2005. The downstream measured River Station 3 temperatures ranged from 32.90 °F to 35.36 °F during January 2005. The permitted daily discharge volume from the Station ranged from approximately 292 million gallons per day (MGD) on January 16 to 351 MGD on January 7 (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were no circulating water or service water chlorination treatments during January 2005; therefore, no pH measurements were taken (Table 2). The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) (Table 3).

As always, there were no discharges of radioactive liquids during January 2005 (Table 4).

● Page 2

The Station's heating boilers were blown down daily in January 2005, the discharge flow rate each day was approximately 18 gallons and the hydroquinone concentration ranged from 1.025 to 2.000 ppm per discharge and the NPDES limit is 15.0 ppm (Table 5).

The traveling screens and strainers are secured for the winter and were not backwashed during January (Table 6).

The water treatment carbon filters were backwashed twice during January 2005, the discharge limit was never approached (Table 7).

The monthly inspection of the chemical containment berm was conducted on 30 January 2005 under work order 2005-4924. No deficiencies were identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,

*Entergy Nuclear Vermont Yankee, LLC*



Lynn DeWald  
Environmental Specialist



Samuel A. Wender IV  
Chemistry Superintendent

Figure1. River Water Temperature Change (Delta T) due to Plant Discharge for Jan 2005

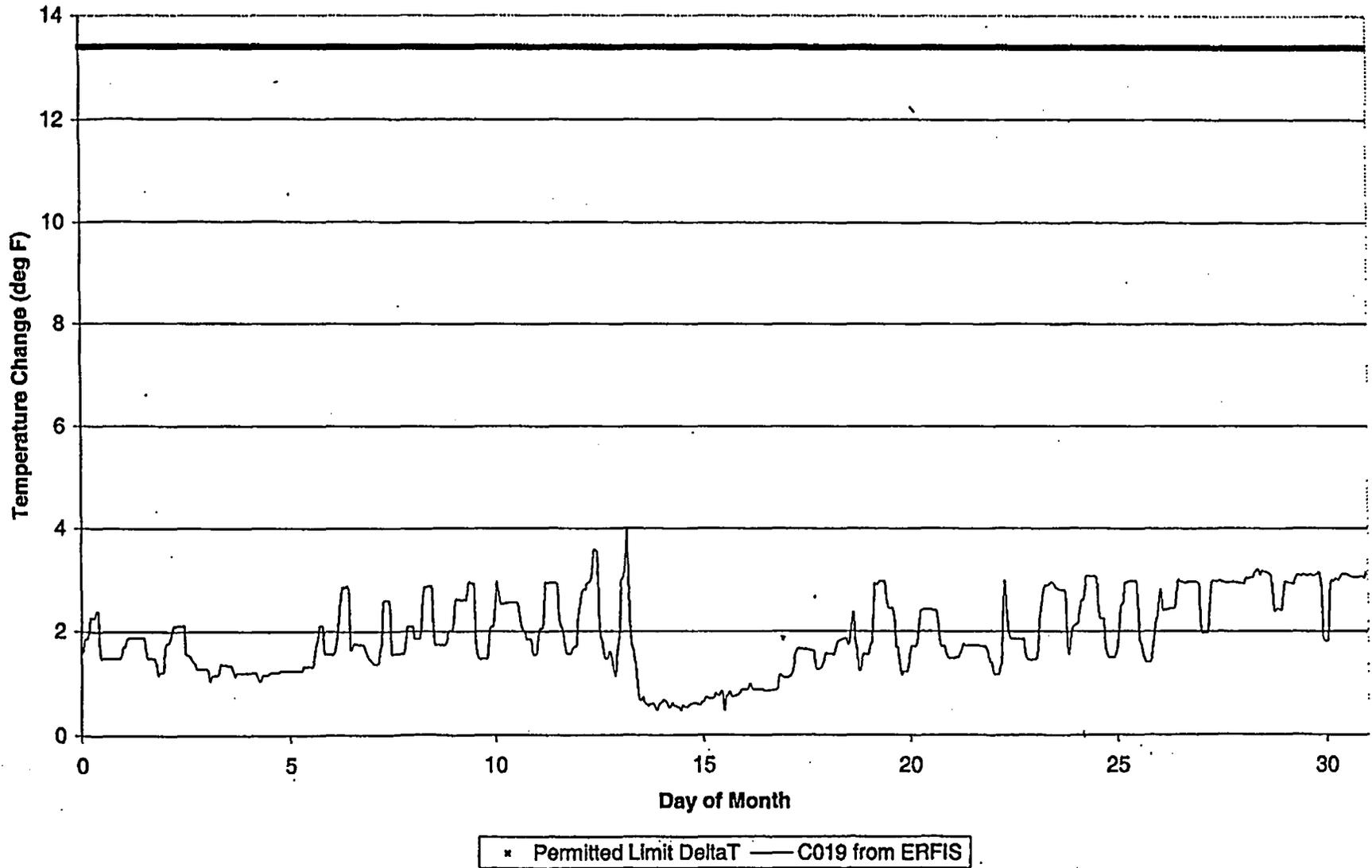
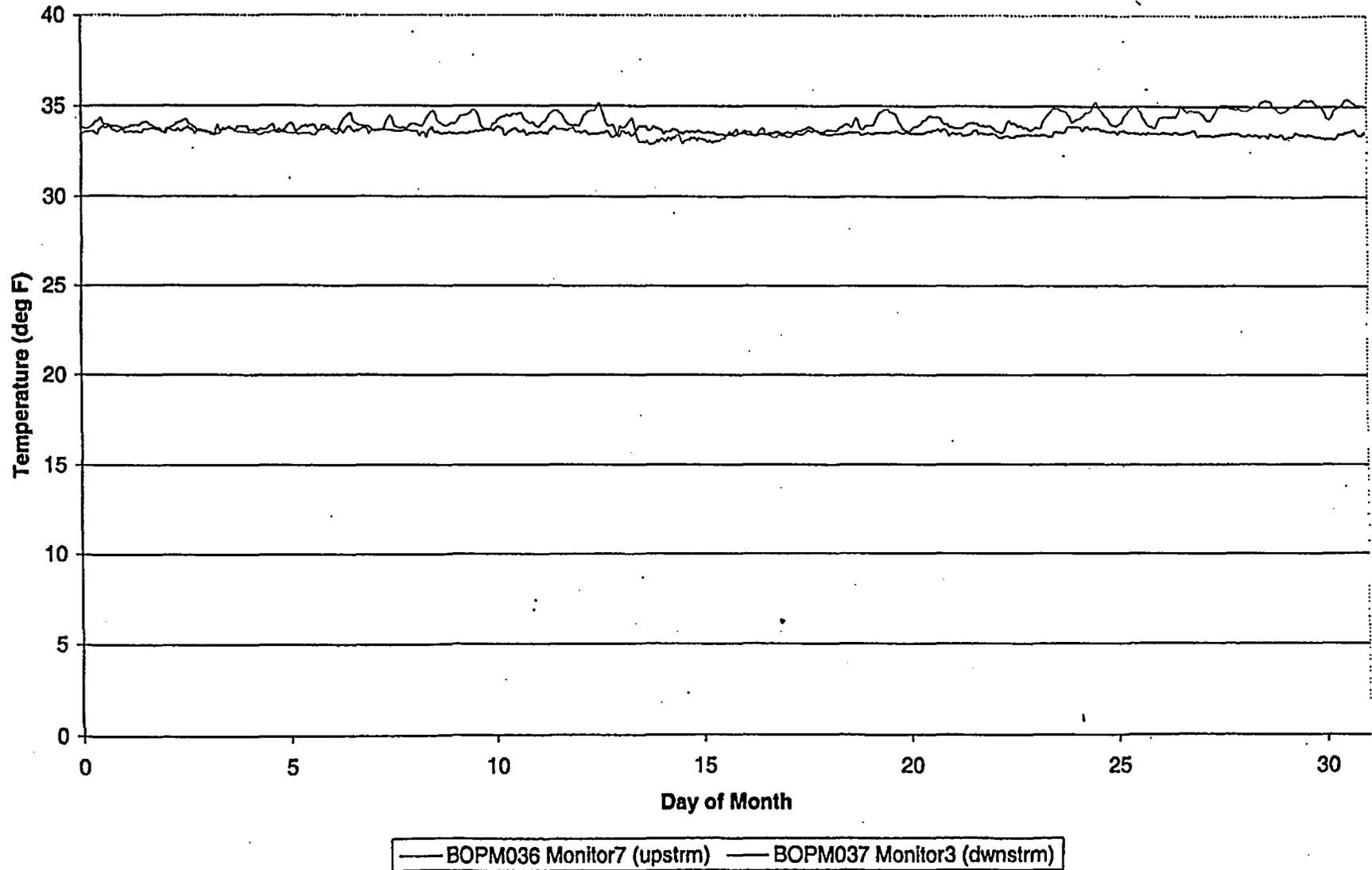


Figure 2. River Water Temperature at Monitor Sites for Jan 2005



Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

Table 1. Volume of Water Discharged to River  
January, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	314.78
2	314.81
3	323.36
4	314.79
5	322.61
6	312.92
7	350.98
8	312.89
9	313.39
10	313.36
11	313.48
12	314.92
13	304.42
14	304.92
15	317.36
16	291.95
17	306.90
18	306.94
19	306.92
20	306.00
21	314.84
22	313.55
23	313.57
24	322.08
25	322.12
26	322.12
27	313.60
28	300.55
29	297.65
30	297.32
31	313.83

(a) Estimated value based on gate position

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service  
Water Systems  
January, 2005**

**There were no circulating or service water treatments in January 2005**

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water

**Table 3. Daily Condenser Water pH Measurement  
 January, 2005**

Day	(a) pH	(b) pH	(c) pH
1		7.30	7.30
2		7.20	7.30
3		7.40	7.20
4		7.30	7.40
5		7.30	7.30
6		7.30	7.40
7		7.50	7.40
8		7.30	7.30
9		7.30	7.30
10		7.30	7.30
11		7.40	7.40
12		7.40	7.50
13		7.20	7.30
14		7.10	7.20
15		7.30	7.20
16		7.10	7.20
17		7.20	7.30
18		7.30	7.40
19		7.30	7.40
20		7.40	7.20
21		7.40	7.30
22		7.30	7.40
23		7.30	7.30
24		7.30	7.30
25		7.30	7.20
26		7.20	7.20
27		7.20	7.20
28		7.20	7.10
29		7.20	7.20
30		7.30	7.20
31		7.20	7.20

- (a) Sample taken from discharge structure after bay
- (b) Sample taken from TBCCW sample sink - circ water stream
- (c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
January, 2005**

There were no radioactive liquid discharges  
in January, 2005

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 003, Plant Heating Boiler Blowdown

Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
January, 2005

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1	18.0	1.500
2	18.0	1.700
3	18.0	1.400
4	18.0	1.475
5	18.0	1.675
6	18.0	1.130
7	18.0	1.350
8	18.0	1.250
9	18.0	1.025
10	18.0	1.025
11	18.0	1.250
12	18.0	1.100
13	18.0	1.600
14	18.0	1.675
15	18.0	1.400
16	18.0	1.500
17	18.0	1.080
18	18.0	1.700
19	18.0	2.000
20	18.0	1.725
21	18.0	1.450
22	18.0	1.725
23	18.0	1.225
24	18.0	1.450
25	18.0	1.250
26	18.0	1.280
27	18.0	1.220
28	18.0	1.380
29	18.0	1.450
30	18.0	1.250
31	18.0	1.200

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 009, Strainer and Traveling Screen Backwash

**Table 6. Strainer and Traveling Screen Backwash  
January, 2005  
There were no backwashes in January**

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: January 2005

<b>Date</b>	<b>Backwash Pump Start Time</b>	<b>Backwash Pump Secured Time</b>	<b>Backwash flow rate (gpm)</b>	<b>Total gallons discharged (MGD)</b>
01/06/2005	1244	1256	125	0.002
01/23/2005	821	831	150	0.002



7 March 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for February 2005

Dear Ms. Tanner,

As required in Section D.2. of the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for February 2005.

The simulated temperature increase to the Connecticut River for February 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 12.91° F on 10 February 2005 when the permitted limit was 13.4 °F. This occurred at a near minimum river flow of 1,285 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of February ranged from 1,285cfs to 13,405 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for February 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 33.14 °F to 33.70 °F during February 2005. The downstream measured River Station 3 temperatures ranged from 33.58 °F to 37.10 °F during February 2005. The permitted daily discharge volume from the Station ranged from approximately 300 million gallons per day (MGD) on February 24 to 323 MGD on February 28 (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were no circulating water or service water chlorination treatments during February 2005; therefore, no pH measurements were taken (Table 2). The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) (Table 3).

As always, there were no discharges of radioactive liquids during February 2005 (Table 4).

● Page 2

The Station's heating boilers were blown down daily in February 2005, the discharge flow rate each day was approximately 18 gallons and the hydroquinone concentration ranged from 0.975 to 1.680 ppm per discharge and the NPDES limit is 15.0 ppm (Table 5).

The traveling screens and strainers are secured for the winter and were not backwashed during February (Table 6).

The water treatment carbon filters were backwashed twice during February 2005, in both instances the discharge volume was 0.001 million gallons for the day (Table 7).

The monthly inspection of the chemical containment berm was conducted on 11 February 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,  
*Entergy Nuclear Vermont Yankee, LLC*



Lynn DeWald  
Environmental Specialist



Samuel A. Wender IV  
Chemistry Superintendent



Entergy Nuclear Vermont Yankee, LLC  
322 Governor Hunt Road, Vernon Vermont

**CERTIFICATION STATEMENT**

PERMIT NUMBER: 3-1199 / VT0000264

PERMITTEE: Entergy Nuclear Vermont Yankee, LLC

MONTH/YEAR OF REPORT: February 2005

REPORT PREPARED BY: Lynn DeWald

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fine and imprisonment.

APPROVED BY:

Lynn DeWald  
Authorized Agent for the Permittee

DATE 3/7/05

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

Table 1. Volume of Water Discharged to River  
February, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	314.30
2	314.32
3	314.31
4	314.32
5	314.33
6	314.36
7	314.40
8	314.39
9	301.28
10	314.36
11	314.38
12	314.48
13	315.42
14	314.49
15	314.21
16	314.21
17	314.25
18	314.27
19	314.26
20	314.02
21	314.02
22	322.50
23	322.48
24	300.90
25	314.75
26	314.80
27	314.74
28	323.34

(a) Estimated value based on gate position

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water/Service Water

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
 February, 2005**  
*There were no treatments during February 2005*

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
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25							
26							
27							
28							

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge  
 (b) Sample taken from discharge structure

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water

Table 3. Daily Condenser Water pH Measurement  
February, 2005

Day	(a) pH	(b) pH	(c) pH
1		7.10	7.20
2		7.10	7.10
3		7.10	7.20
4		7.30	7.20
5		7.20	7.10
6		7.30	7.20
7		7.10	7.10
8		7.20	7.20
9		7.10	7.20
10		7.10	7.20
11		7.30	7.30
12		7.30	7.30
13		7.20	7.30
14		7.10	7.10
15		7.20	7.20
16		7.20	7.20
17		7.20	7.20
18		7.20	7.20
19		7.20	7.20
20		7.20	7.10
21		7.10	7.20
22		7.10	7.20
23		7.30	7.30
24		7.40	7.30
25		7.20	7.20
26		7.30	7.30
27		7.10	7.20
28		7.10	7.20

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
February, 2005**

There were no radioactive liquid discharges  
in February, 2005

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 003, Plant Heating Boiler Blowdown

Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
February, 2005

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1	18.0	1.150
2	18.0	1.425
3	18.0	1.300
4	18.0	1.500
5	18.0	1.200
6	18.0	1.250
7	18.0	1.375
8	18.0	1.550
9	18.0	1.200
10	18.0	1.150
11	18.0	1.350
12	18.0	1.200
13	18.0	0.975
14	18.0	1.320
15	18.0	1.575
16	18.0	1.375
17	18.0	1.100
18	18.0	1.300
19	18.0	1.150
20	18.0	1.000
21	30.0	1.500
22	18.0	1.200
23	18.0	1.000
24	18.0	1.430
25	18.0	1.650
26	18.0	1.680
27	18.0	1.200
28	18.0	1.320

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 009, Strainer and Traveling Screen Backwash

Table 6. Strainer and Traveling Screen Backwash  
February, 2005

*There were no strainer or traveling screen backwashes*

Day	Discharge Flow Rate gal/day	(a) - (millions of
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
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18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		

(a) Estimated value based on average river flow rate (cfs)

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: February 2005

Date	Backwash Pump Start Time	Backwash Pump Secured Time	Backwash flow rate (gpm)	Total gallons discharged (MGD)
02/09/2005	210	216	150	0.001
02/27/2005	2235	2245	140	0.001

Figure1. River Water Temperature Change (Delta T) due to Plant Discharge for Feb 2005

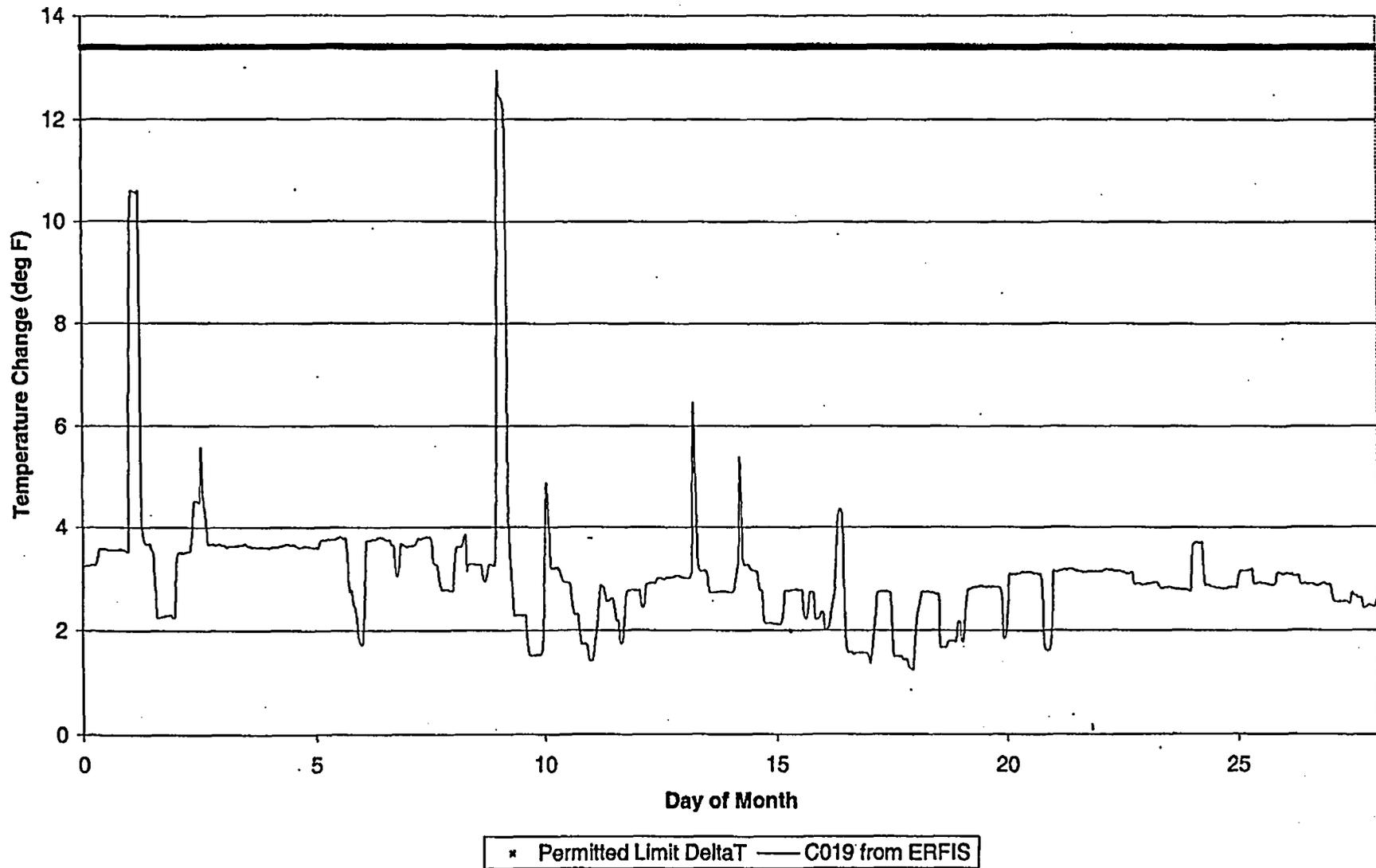
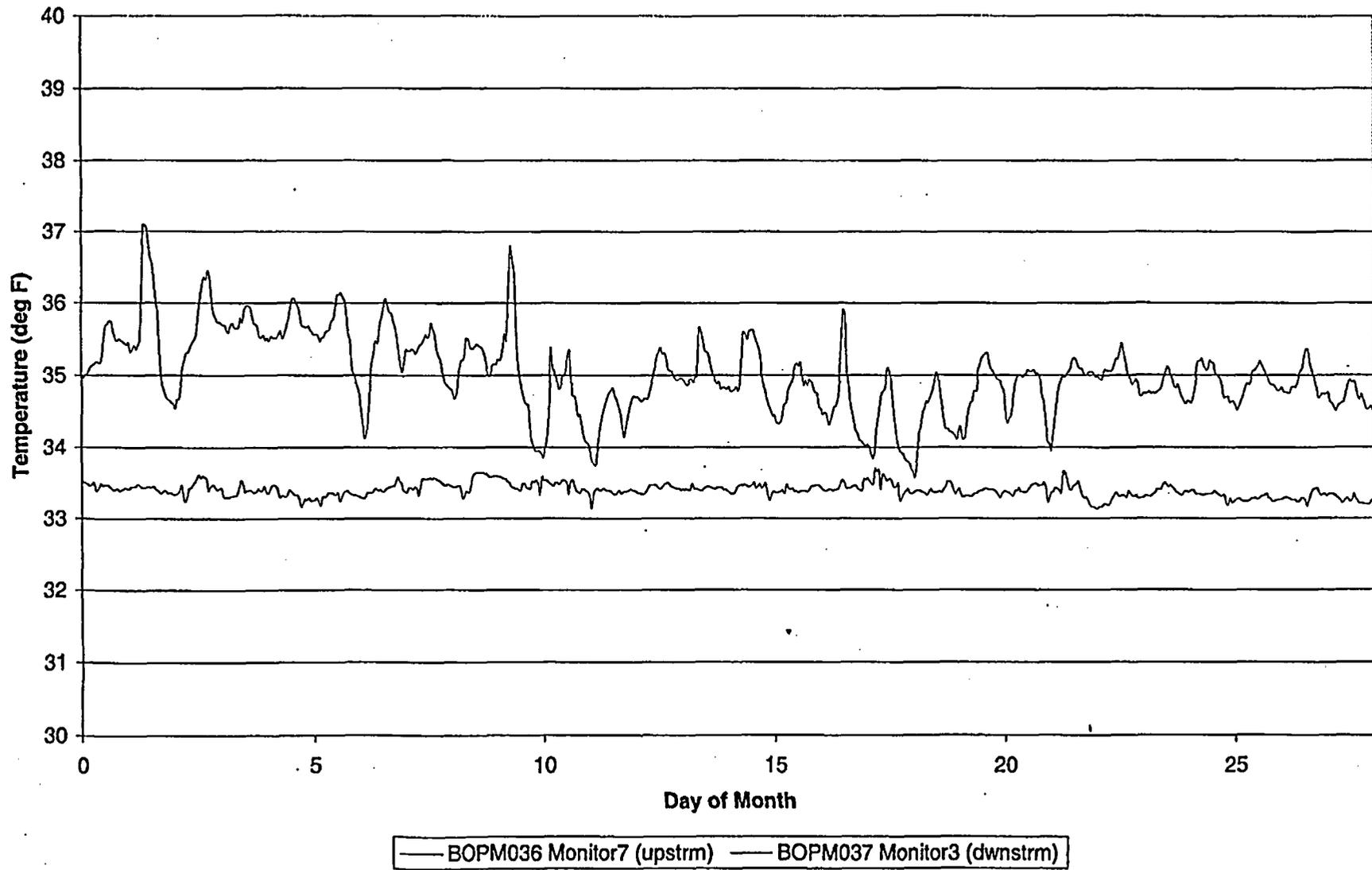


Figure 2. River Water Temperature at Monitor Sites for Feb 2005





13 April 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for March 2005

Dear Ms. Tanner,

As required in Section D.2. of the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for March 2005.

The simulated temperature increase to the Connecticut River for March 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 12.80° F on 7 March 2005 when the permitted limit was 13.4 °F. This occurred at a river flow of 1,315 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of March ranged from 1,315 cfs to 38,095 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for March 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 32.98 °F to 35.64 °F during March 2005. The downstream measured River Station 3 temperatures ranged from 33.97 °F to 38.58 °F during March 2005. The permitted daily discharge volume from the Station ranged from approximately 272 million gallons per day (MGD) on March 29 to 324 MGD on March 20 (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were no circulating water or service water chlorination treatments during March 2005; therefore, no pH measurements were taken (Table 2). The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) and are reported in Table 3.

There were no discharges of radioactive liquids during March 2005 (Table 4).



● Page 2

The Station's heating boilers were blown down daily in March 2005, the discharge flow rate each day was approximately 18 gallons and the hydroquinone concentration ranged from 0.600 to 1.625 ppm per discharge and the NPDES limit is 15.0 ppm (Table 5).

The traveling screens and strainers were backwashed daily during March 2005, the backwash volume ranged from 0.017 to 0.040 million gallons per day, the permitted limit of 0.050 million gallons per day was not exceeded (Table 6).

The water treatment carbon filters were backwashed once during March 2005, the discharge volume was 0.001 million gallons for the day (Table 7).

The monthly inspection of the chemical containment berm was conducted on March 21, 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,  
*Entergy Nuclear Vermont Yankee, LLC*

A handwritten signature in cursive script that reads "Lynn DeWald".

Lynn DeWald  
Environmental Specialist

A handwritten signature in cursive script that reads "Samuel A. Wender IV".

Samuel A. Wender IV  
Chemistry Superintendent

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

Table 1. Volume of Water Discharged to River  
March, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	314.78
2	314.77
3	314.77
4	314.77
5	314.55
6	313.18
7	314.32
8	313.77
9	313.84
10	313.88
11	313.86
12	313.77
13	313.40
14	313.91
15	314.29
16	314.34
17	314.39
18	314.40
19	314.60
20	324.35
21	315.76
22	315.76
23	315.75
24	315.74
25	315.73
26	324.33
27	320.26
28	323.02
29	272.33
30	323.02
31	323.02

(a) Estimated value based on gate position

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water/Service Water

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
 March, 2005**

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1							
2							
3							
4							
5							
6							
7							
8							
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31							

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge  
 (b) Sample taken from discharge structure

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water

Table 3. Daily Condenser Water pH Measurement  
March, 2005

Day	(a) pH	(b) pH	(c) pH
1		7.30	7.40
2		7.20	7.20
3		7.30	7.20
4		7.30	7.20
5		7.20	7.20
6		7.20	7.20
7		7.20	7.20
8		7.20	7.20
9		7.30	7.20
10		7.20	7.20
11		7.20	7.20
12		7.20	7.20
13		7.20	7.20
14		7.10	7.10
15		7.20	7.20
16		7.20	7.20
17		7.10	7.10
18		7.20	7.20
19		7.10	7.20
20		7.10	7.10
21		7.10	7.20
22		7.30	7.20
23		7.30	7.20
24		7.30	7.20
25		7.30	7.30
26		7.30	7.20
27		7.30	7.30
28		7.40	7.30
29		7.20	7.20
30		7.20	7.20
31		7.20	7.20

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
March, 2005**

There were no radioactive liquid discharges  
in March, 2005

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 003, Plant Heating Boiler Blowdown

Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
March, 2005

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1	18.0	1.125
2	18.0	1.150
3	18.0	1.100
4	18.0	1.025
5	18.0	1.075
6	18.0	0.900
7	18.0	1.530
8	18.0	1.250
9	18.0	1.150
10	18.0	1.625
11	0.0	1.400
12	18.0	1.300
13	18.0	1.225
14	18.0	1.300
15	18.0	1.050
16	18.0	1.330
17	18.0	1.500
18	18.0	1.500
19	18.0	1.500
20	18.0	1.500
21	18.0	1.500
22	18.0	1.500
23	18.0	1.500
24	18.0	1.125
25	18.0	1.200
26	18.0	1.600
27	18.0	0.950
28	18.0	0.750
29	18.0	1.075
30	18.0	0.600
31	18.0	0.625

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 009, Strainer and Traveling Screen Backwash

Table 6. Strainer and Traveling Screen Backwash  
March, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	0.017
2	0.017
3	0.017
4	0.017
5	0.017
6	0.017
7	0.017
8	0.017
9	0.017
10	0.017
11	0.017
12	0.017
13	0.017
14	0.017
15	0.017
16	0.017
17	0.017
18	0.017
19	0.017
20	0.017
21	0.017
22	0.017
23	0.017
24	0.017
25	0.017
26	0.017
27	0.017
28	0.026
29	0.035
30	0.044
31	0.035

(a) Estimated value based on average river flow rate (cfs)

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: March 2005

<b>Date</b>	<b>Backwash Pump Start Time</b>	<b>Backwash Pump Secured Time</b>	<b>Backwash flow rate (gpm)</b>	<b>Total gallons discharg ed (MGD)</b>
03/22/2005	2307	2314	150	0.001

Figure1. River Water Temperature Change (Delta T) due to Plant Discharge for March 2005

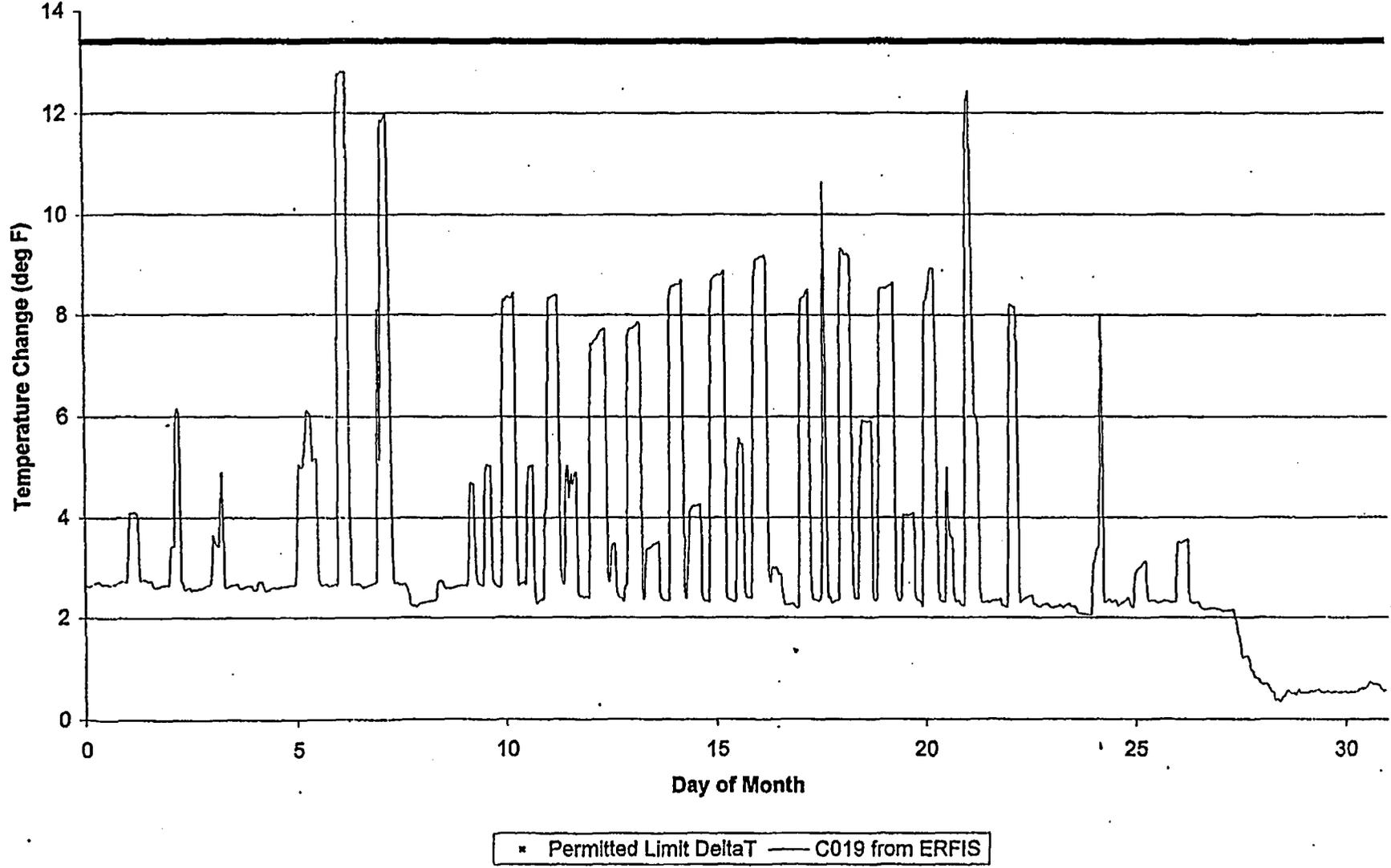
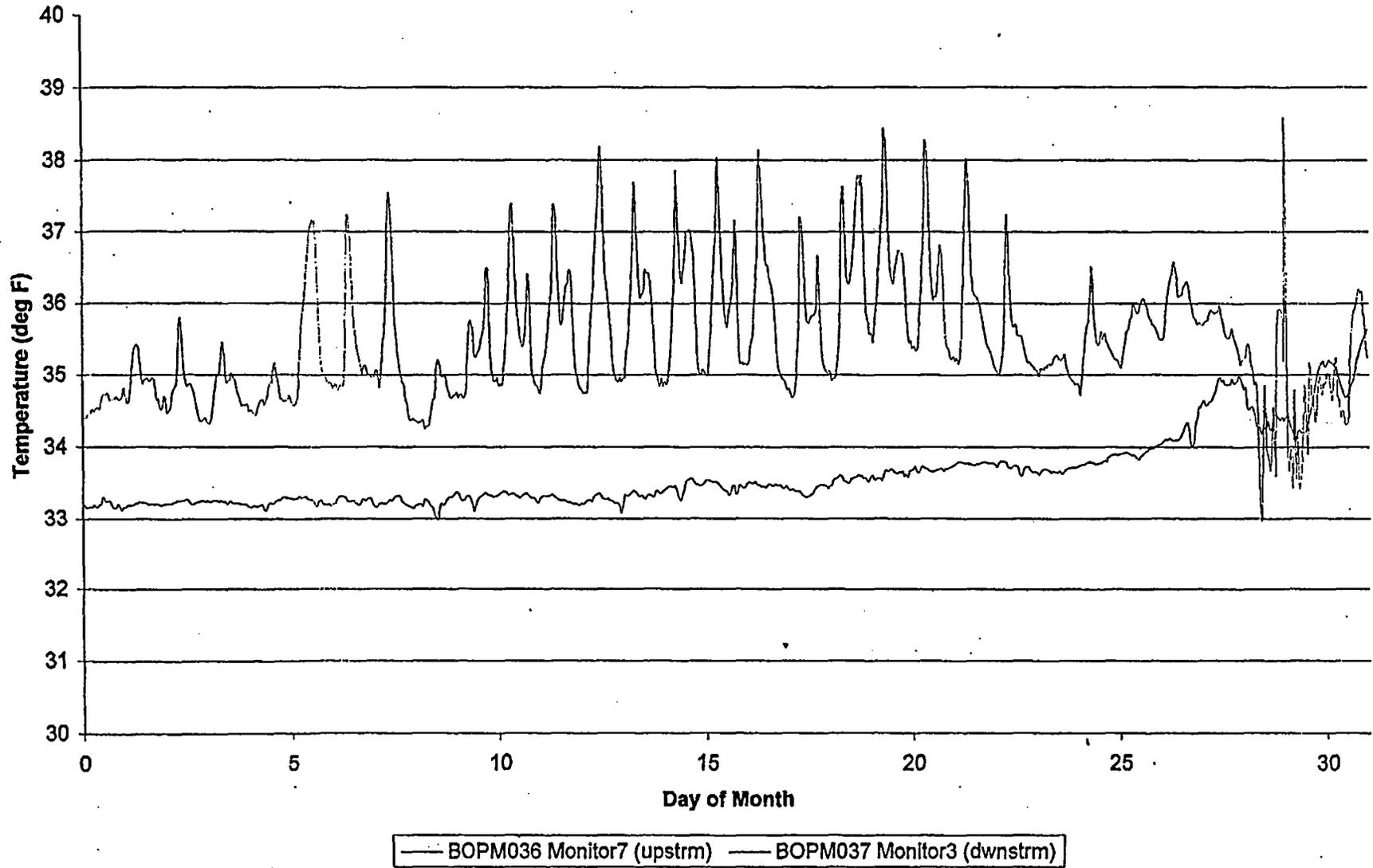


Figure 2. River Water Temperature at Monitor Sites for Mar 2005





**Entergy Nuclear Northeast**  
Entergy Nuclear Operations, Inc.  
Vermont Yankee  
322 Governor Hunt Rd.  
P.O. Box 157  
Vernon, VT 05354  
Tel 802-257-7711

12 May 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for April 2005

Dear Ms. Tanner,

As required in Section D.2. in the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for April 2005.

The simulated temperature increase to the Connecticut River for April 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 1.23° F on 17 April 2005 when the permitted limit was 13.4 °F. This occurred at a river flow of 14,000 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of April ranged from 14,005 cfs to 70,178 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for April 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 35.32 °F to 48.78 °F during April 2005. The downstream measured River Station 3 temperatures ranged from 35.14 °F to 50.93 °F during April 2005. The permitted daily discharge volume from the Station ranged from approximately 309 million gallons per day (MGD) on April 4 to 489 MGD on April 30 (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were no circulating water or service water chlorination treatments during April 2005; therefore, no pH measurements were taken (Table 2). The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) and are reported in Table 3.

There were no discharges of radioactive liquids during April 2005 (Table 4).



● Page 2

The Station's heating boilers were blown down 28 out of 30 days in April 2005, the discharge flow rate each day was approximately 18 gallons and the hydroquinone concentration ranged from 0.525 to 1.330 ppm per discharge and the NPDES limit is 15.0 ppm (Table 5).

The traveling screens and strainers were backwashed daily during April 2005, the backwash volume ranged from 0.026 to 0.044 million gallons per day, the permitted limit of 0.050 million gallons per day was not exceeded (Table 6).

The water treatment carbon filters were backwashed twice during April 2005, the discharge volume was 0.007 million gallons per day on 7 April and 0.001 million gallons per day on 26 April 2005 (Table 7).

The monthly inspection of the chemical containment berm was conducted on April 15, 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,  
*Entergy Nuclear Vermont Yankee, LLC*

A handwritten signature in cursive script that reads "Lynn DeWald".

Lynn DeWald  
Environmental Specialist

A handwritten signature in cursive script that reads "Samuel A. Wender IV".

Samuel A. Wender IV  
Chemistry Superintendent

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

Table 1. Volume of Water Discharged to River  
April, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	323.02
2	321.43
3	319.06
4	309.57
5	323.02
6	329.77
7	323.02
8	323.02
9	323.02
10	323.01
11	323.00
12	319.81
13	323.02
14	319.82
15	320.51
16	323.02
17	381.95
18	484.16
19	480.15
20	480.15
21	480.15
22	471.22
23	480.15
24	480.15
25	367.65
26	447.42
27	434.17
28	434.32
29	480.15
30	488.92

(a) Estimated value based on gate position

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water/Service Water

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
 April, 2005**

***There were no circulating or service water treatments in April 2005***

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge

(b) Sample taken from discharge structure

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water

Table 3. Daily Condenser Water pH Measurement  
 April, 2005

Day	(a) pH	(b) pH	(c) pH
1		7.20	7.10
2		7.30	7.20
3		7.10	7.10
4		7.20	7.10
5		7.10	7.10
6		7.10	7.10
7		7.20	7.20
8		7.10	7.10
9		7.30	7.20
10		7.20	7.20
11		7.20	7.20
12		7.20	7.10*
13		7.30	7.20
14		7.30	7.30
15		7.30	7.20
16		7.30	7.20
17		7.30	7.30
18	7.40		
19		7.20	7.30
20		7.40	7.40
21		7.50	7.40
22		7.40	7.50
23		7.40	7.40
24		7.30	7.30
25		7.20	7.20
26		7.30	7.20
27		7.20	7.20
28		7.20	7.30
29		7.20	7.20
30		7.40	7.40

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
April, 2005**

There were no radioactive liquid discharges  
in April, 2005

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 003, Plant Heating Boiler Blowdown

**Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
 April, 2005**

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1	no boiler blowdown	0.000
2	18.0	0.525
3	18.0	1.100
4	18.0	1.100
5	18.0	1.300
6	18.0	1.200
7	18.0	1.300
8	18.0	1.175
9	18.0	1.325
10	18.0	1.050
11	18.0	1.300
12	18.0	1.200
13	18.0	1.250
14	18.0	1.175
15	18.0	1.150
16	18.0	1.125
17	18.0	1.200
18	18.0	1.200
19	18.0	1.180
20	no boiler blowdown	0.000
21	18.0	1.330
22	18.0	1.000
23	18.0	1.025
24	18.0	1.085
25	18.0	1.075
26	18.0	1.082
27	no blowdown	0.000
28	18.0	1.100
29	18.0	1.100
30	18.0	1.100

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 009, Strainer and Traveling Screen Backwash

Table 6. Strainer and Traveling Screen Backwash  
April, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	0.044
2	0.044
3	0.044
4	0.044
5	0.044
6	0.044
7	0.044
8	0.044
9	0.044
10	0.044
11	0.044
12	0.044
13	0.035
14	0.035
15	0.035
16	0.026
17	0.026
18	0.026
19	0.026
20	0.035
21	0.035
22	0.035
23	0.035
24	0.044
25	0.044
26	0.044
27	0.044
28	0.044
29	0.044
30	0.035

(a) Estimated value based on average river flow rate (cfs)

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: April 2005

<b>Date</b>	<b>Backwash Pump Start Time</b>	<b>Backwash Pump Secured Time</b>	<b>Backwash flow rate (gpm)</b>	<b>Total gallons discharged (MGD)</b>
04/07/2005	155	203	140	0.007
04/26/2005	2345	2355	140	0.001

Figure1. River Water Temperature Change (Delta T) due to Plant Discharge for April 2005

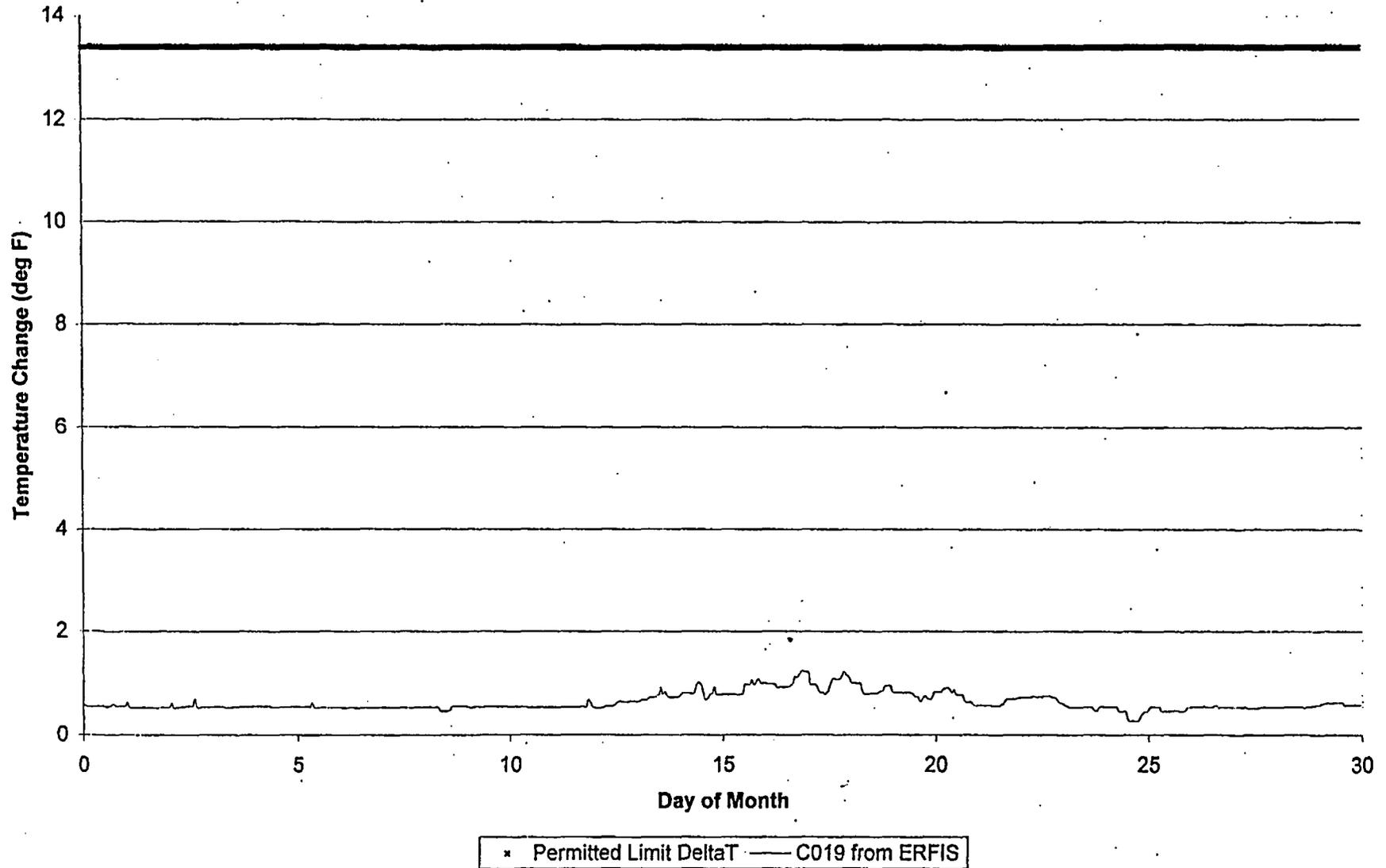
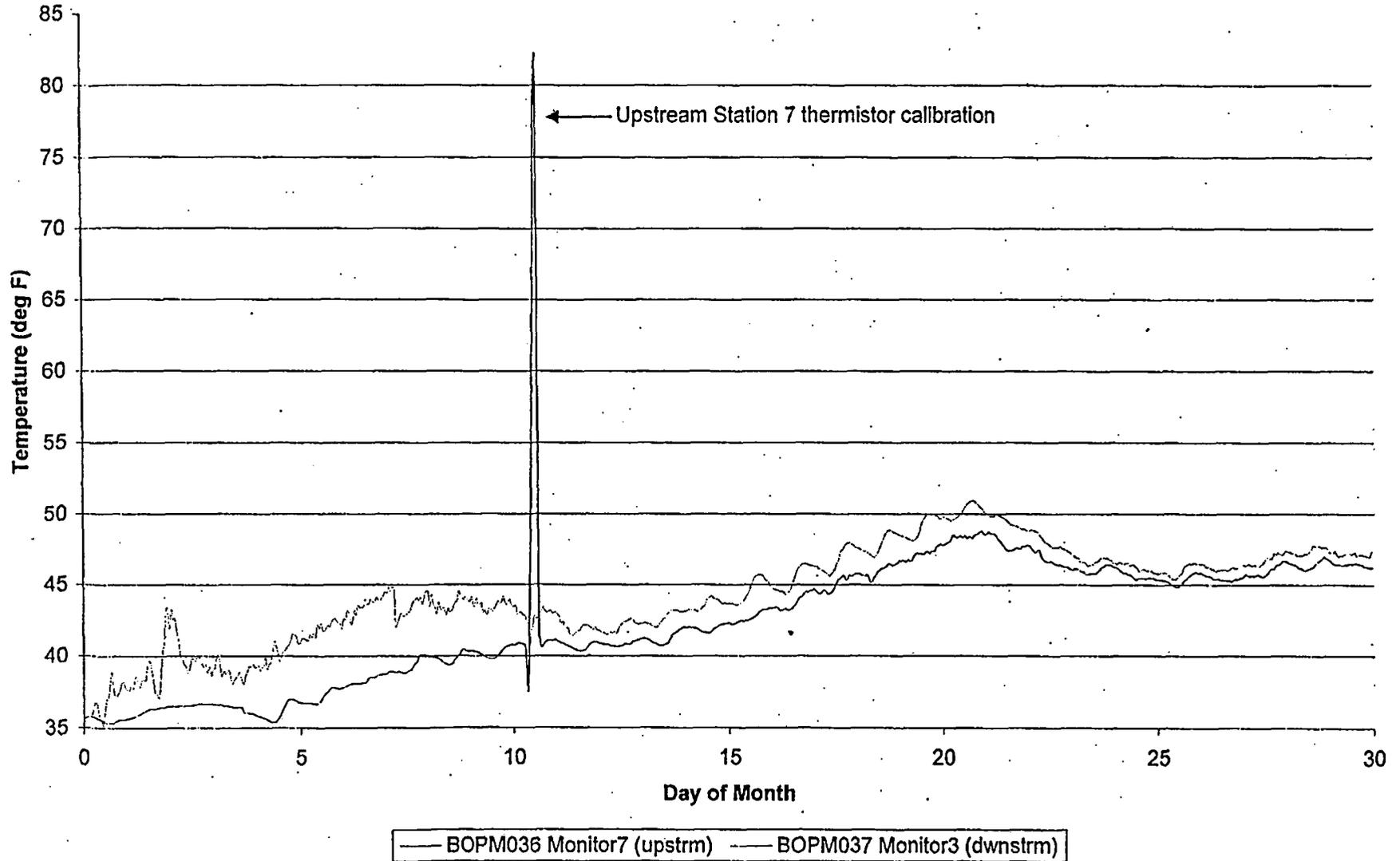


Figure 2. River Water Temperature at Monitor Sites for April 2005





**Entergy Nuclear Northeast**  
Entergy Nuclear Operations, Inc.  
Vermont Yankee  
322 Governor Hunt Rd.  
P.O. Box 157  
Vernon, VT 05354  
Tel 802-257-7711

6 June 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for May 2005

Dear Ms. Tanner,

As required in Section D.2. in the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for May 2005.

The simulated temperature increase to the Connecticut River for May 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 2.85° F on 21 May 2005 when the permitted limit was 5.0 °F. This occurred at a river flow of 6,011 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of May ranged from 6,011 cfs to 32,000 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for May 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 45.69 °F to 54.79 °F during May 2005. The downstream measured River Station 3 temperatures ranged from 46.50 °F to 57.67 °F during May 2005. The permitted daily discharge volume from the Station ranged from approximately 313 million gallons per day (MGD) on May 31 to 489 MGD on May 2 (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were three circulating water and service water chlorination treatments during May 2005. Table 2 provides details on the treatment duration, amount of oxidant detected, and the pH during treatment. The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) and are reported in Table 3.

There were no discharges of radioactive liquids during May 2005 (Table 4).

● Page 2

The Station's heating boilers were blown down 18 out of 31 days in May 2005, the discharge flow rate on each occurrence was approximately 18 gallons and the hydroquinone concentration ranged from 1.0 to 1.5 ppm per discharge and the NPDES limit is 15.0 ppm (Table 5).

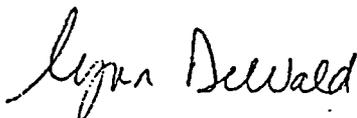
The traveling screens and strainers were backwashed daily during May 2005, the backwash volume ranged from 0.017 to 0.044 million gallons per day, the permitted limit of 0.050 million gallons per day was not exceeded (Table 6).

The water treatment carbon filters were not backwashed during May 2005. (Table 7).

The monthly inspection of the chemical containment berm was conducted on May 31, 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,  
*Entergy Nuclear Vermont Yankee, LLC*



Lynn DeWald  
Environmental Specialist



Samuel A. Wender IV  
Chemistry Superintendent



Entergy Nuclear Vermont Yankee, LLC  
322 Governor Hunt Road, Vernon Vermont

### CERTIFICATION STATEMENT

PERMIT NUMBER: 3-1199 / VT0000264

PERMITTEE: Entergy Nuclear Vermont Yankee, LLC

MONTH/YEAR OF REPORT: May 2005

REPORT PREPARED BY: Lynn DeWald

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fine and imprisonment.

APPROVED BY: Lynn DeWald DATE June 6, 2005  
Authorized Agent for the Permittee

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

Table 1. Volume of Water Discharged to River  
May, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	480.15
2	488.92
3	488.92
4	488.92
5	484.54
6	480.15
7	480.15
8	480.15
9	484.77
10	488.92
11	480.15
12	440.14
13	480.15
14	480.15
15	480.15
16	480.15
17	488.92
18	480.14
19	480.15
20	480.15
21	480.14
22	480.15
23	427.53
24	480.15
25	480.15
26	420.71
27	480.15
28	480.15
29	480.15
30	480.15
31	313.27

(a) Estimated value based on gate position

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water/Service Water

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
 May, 2005**

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23	105	0.05	0.18	7.8	0.05	0.11	7.9
24							
25							
26	90	0.05	0.20	7.9	0.05	0.11	8.0
27							
28							
29							
30							
31	76	0.05	0.11	7.6	0.05	0.11	7.9

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge

(b) Sample taken from discharge structure

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water

Table 3. Daily Condenser Water pH Measurement  
 May, 2005

Day	(a) pH	(b) pH	(c) pH
1	7.60	7.30	7.40
2	7.60		
3	7.50	7.30	7.20
4	7.70	7.30	7.20
5	7.80		
6	7.70		
7	7.60		
8	7.60		
9	7.60		
10		7.10	7.00
11		7.50	7.40
12	7.90	7.50	7.30
13		7.50	7.40
14		7.40	7.50
15		7.50	7.50
16		7.40	7.50
17		7.30	7.40
18		7.30	7.50
19		7.50	7.50
20		7.40	7.40
21		7.40	7.30
22		7.40	7.40
23	7.90		
24		7.30	7.40
25	7.30		
26	7.90		
27	7.50		
28	7.40		
29	7.40		
30	7.50		
31	7.90	7.50	7.40

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
May, 2005**

There were no radioactive liquid discharges  
in May, 2005

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 003, Plant Heating Boiler Blowdown

Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
May, 2005

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1	18.0	1.225
2	18.0	1.200
3	18.0	1.200
4	18.0	1.200
5	18.0	1.100
6	18.0	1.080
7	18.0	1.500
8	18.0	1.125
9	18.0	1.150
10	18.0	1.250
11		
12		
13		
14		
15		
16	18.0	1.000
17		
18	18.0	1.025
19	18.0	1.050
20	18.0	1.350
21	18.0	1.400
22		
23		
24	18.0	1.200
25		
26	18.0	1.200
27	18.0	1.120
28		
29		
30		
31		

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 009, Strainer and Traveling Screen Backwash

Table 6. Strainer and Traveling Screen Backwash  
May, 2005

Day	Discharge Flow Rate (millions of gal/day) <sup>(a)</sup>
1	0.044
2	0.044
3	0.035
4	0.035
5	0.026
6	0.026
7	0.026
8	0.026
9	0.026
10	0.026
11	0.026
12	0.026
13	0.026
14	0.026
15	0.026
16	0.026
17	0.026
18	0.026
19	0.026
20	0.026
21	0.017
22	0.017
23	0.026
24	0.035
25	0.035
26	0.035
27	0.026
28	0.026
29	0.026
30	0.026
31	0.026

(a) Estimated value based on average river flow rate (cfs)

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: May 2005

Date	Backwash Pump Start Time	Backwash Pump Secured Time	Backwash flow rate (gpm)	Total gallons discharged (MGD)
NA	0	0	0	0.000

Figure 1. River Water Temperature Change (Delta T) due to Plant Discharge for May 2005

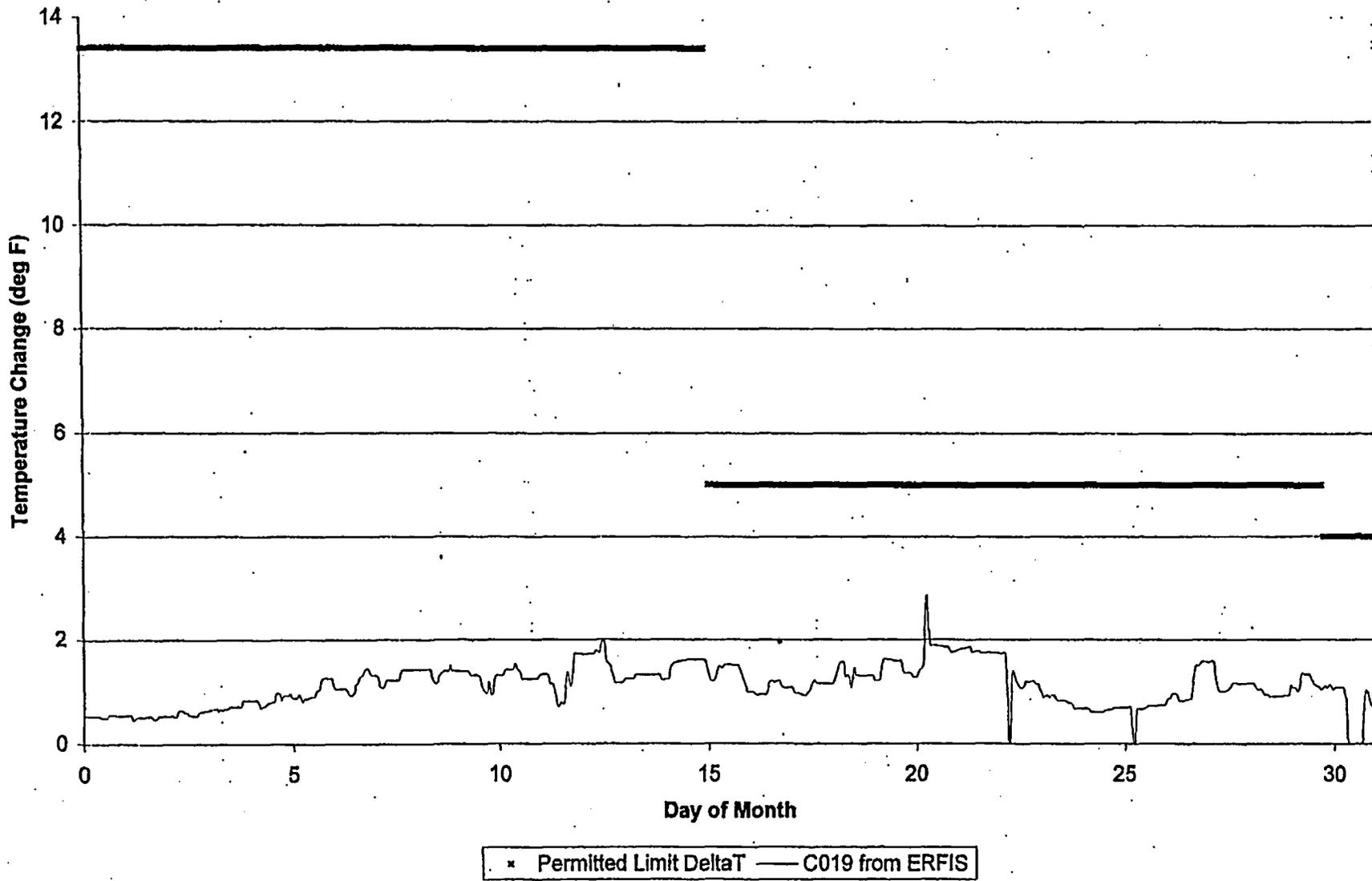
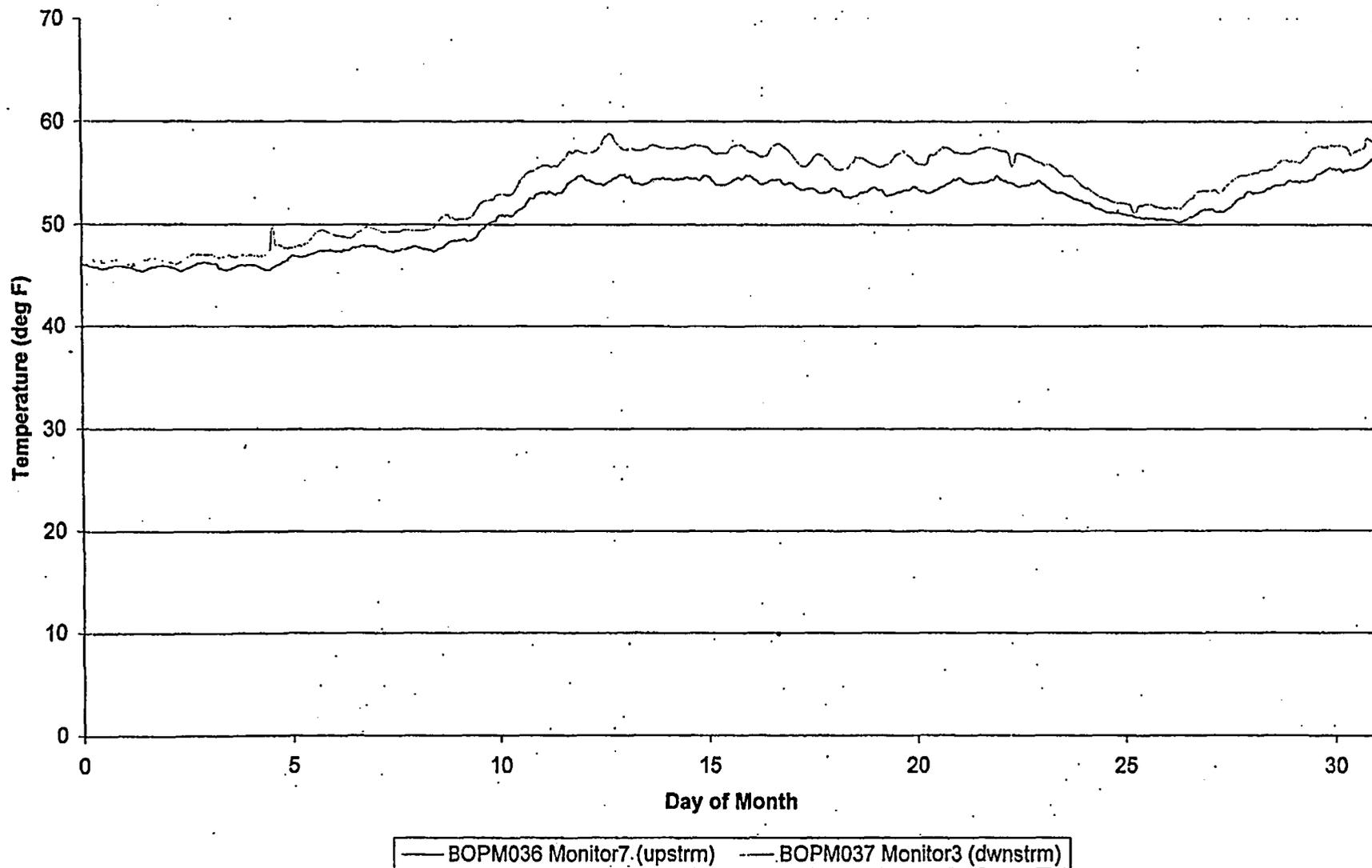


Figure 2. River Water Temperature at Monitor Sites for May 2005





13 July 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for June 2005

Dear Ms. Tanner,

As required in Section D.2. in the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for June 2005.

The simulated temperature increase to the Connecticut River for June 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 2.85° F on 6 June 2005 when the permitted limit was 3.0 °F. This occurred at a river flow of 3,365 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of June ranged from 2,564 cfs to 32,000 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for June 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 56.33 °F to 71.72 °F during June 2005. The downstream measured River Station 3 temperatures ranged from 44.61 °F to 76.72 °F during June 2005. The permitted daily discharge volume from the Station ranged from approximately 305 million gallons per day (MGD) on June 2<sup>nd</sup> to 489 MGD on June 19<sup>th</sup> (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were ten circulating water and service water chlorination treatments during June 2005. Table 2 provides details on the treatment duration, amount of oxidant detected, and the pH measured during treatment. The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) and are reported in Table 3.

● Page 2

There were no discharges of radioactive liquids during June 2005 (Table 4).

The Station's heating boilers were blown down once in June 2005, the discharge flow rate was approximately 18 gallons and the hydroquinone concentration was 1.13 ppm and the NPDES limit is 15.0 ppm (Table 5).

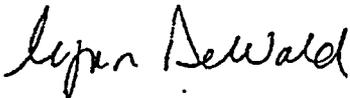
The traveling screens and strainers were backwashed daily during May 2005, the backwash volume ranged from 0.017 to 0.044 million gallons per day, the permitted limit of 0.050 million gallons per day was not exceeded (Table 6).

The water treatment carbon filters were backwashed once during June 2005. (Table 7). The discharge volume was approximately 0.001 million gallons, well below the permitted limit of 0.010 million gallons per day.

The monthly inspection of the chemical containment berm was conducted on June 29, 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,  
*Entergy Nuclear Vermont Yankee, LLC*



Lynn DeWald  
Environmental Specialist



Samuel A. Wender IV  
Chemistry Superintendent



Entergy Nuclear Northeast  
Entergy Nuclear Operations, Inc.  
Vermont Yankee  
322 Governor Hunt Rd.  
P.O. Box 157  
Vernon, VT 05354  
Tel 802-257-7711

Entergy Nuclear Vermont Yankee, LLC  
322 Governor Hunt Road, Vernon Vermont

### CERTIFICATION STATEMENT

PERMIT NUMBER: 3-1199 / VT0000264

PERMITTEE: Entergy Nuclear Vermont Yankee, LLC

MONTH/YEAR OF REPORT: June 2005

REPORT PREPARED BY: Lynn DeWald

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fine and imprisonment.

APPROVED BY:

Lynn DeWald  
Authorized Agent for the Permittee

DATE 7-14-05

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

Table 1. Volume of Water Discharged to River  
June, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	322.29
2	305.49
3	480.15
4	480.15
5	484.52
6	419.40
7	484.53
8	480.12
9	418.12
10	480.15
11	484.52
12	484.51
13	432.16
14	484.54
15	484.54
16	426.44
17	484.53
18	484.54
19	488.92
20	416.40
21	484.54
22	484.53
23	403.48
24	484.54
25	448.29
26	484.49
27	408.15
28	484.54
29	484.54
30	421.10

(a) Estimated value based on gate position

Energy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water/Service Water

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
 June, 2005**

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1	55	0.00	0.00	0.0	0.05	0.11	7.9
2	100	0.05	0.11	8.3	0.05	0.11	8.4
3							
4							
5							
6	100	0.05	0.11	7.9	0.05	0.01	7.9
7							
8							
9	105	0.05	0.11	8.0	0.05	0.11	8.0
10							
11							
12							
13	85	0.05	0.14	7.8	0.05	0.11	8.0
14							
15							
16	95	0.05	0.23	7.5	0.50	0.18	7.9
17							
18							
19							
20	100	0.05	0.27	7.7	0.05	0.20	7.7
21							
22							
23	100	0.05	0.16	7.7	0.05	0.11	7.8
24							
25							
26							
27	100	0.05	0.22	7.9	0.05	0.18	7.9
28							
29							
30	100	0.05	0.18	8.0	0.05	0.16	8.0

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge

(b) Sample taken from discharge structure

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water

**Table 3. Daily Condenser Water pH Measurement  
 June, 2005**

Day	(a) pH	(b) pH	(c) pH
1	7.90		
2	7.90		
3		7.50	7.50
4		7.40	7.40
5	7.60		
6	7.90		
7	7.50	7.30	7.30
8		7.37	7.44
9		8.00	8.00
10		7.40	7.30
11		7.50	7.40
12		7.40	7.40
13	7.80	7.80	8.00
14		7.30	7.40
15		7.30	7.30
16		7.50	7.90
17		7.40	7.40
18	7.50		
19	7.60		
20	7.70		
21	7.40	7.30	7.30
22	7.40		
23	7.70		
24	7.40		
25	7.90		
26	7.50		
27	7.90		
28	7.90	7.33	7.40
29	7.90		
30	8.00		8.00

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
June, 2005**

There were no radioactive liquid discharges  
in June, 2005

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 003, Plant Heating Boiler Blowdown

Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
June, 2005

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1	boiler secured	
2	boiler secured	
3	boiler secured	
4	boiler secured	
5	boiler secured	
6	boiler secured	
7	boiler secured	
8	boiler secured	
9	boiler secured	
10	boiler secured	
11	boiler secured	
12	boiler secured	
13	0.0	1.125
14	boiler secured	
15	boiler secured	
16	boiler secured	
17	boiler secured	
18	boiler secured	
19	boiler secured	
20	boiler secured	
21	boiler secured	
22	boiler secured	
23	boiler secured	
24	boiler secured	
25	boiler secured	
26	boiler secured	
27	boiler secured	
28	boiler secured	
29	boiler secured	
30		

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 009, Strainer and Traveling Screen Backwash

Table 6. Strainer and Traveling Screen Backwash  
June, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	0.035
2	0.035
3	0.026
4	0.026
5	0.017
6	0.026
7	0.017
8	0.017
9	0.017
10	0.017
11	0.026
12	0.026
13	0.026
14	0.026
15	0.026
16	0.035
17	0.035
18	0.044
19	0.044
20	0.035
21	0.035
22	0.026
23	0.026
24	0.017
25	0.017
26	0.017
27	0.017
28	0.017
29	0.026
30	0.026

(a) Estimated value based on average river flow rate (cfs)

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: June 2005

<b>Date</b>	<b>Backwash Pump Start Time</b>	<b>Backwash Pump Secured Time</b>	<b>Backwash flow rate (gpm)</b>	<b>Total gallons discharged (MGD)</b>
06/02/2005	1427	1435	135	0.001

Figure1. River Water Temperature Change (Delta T) due to Plant Discharge for June 2005

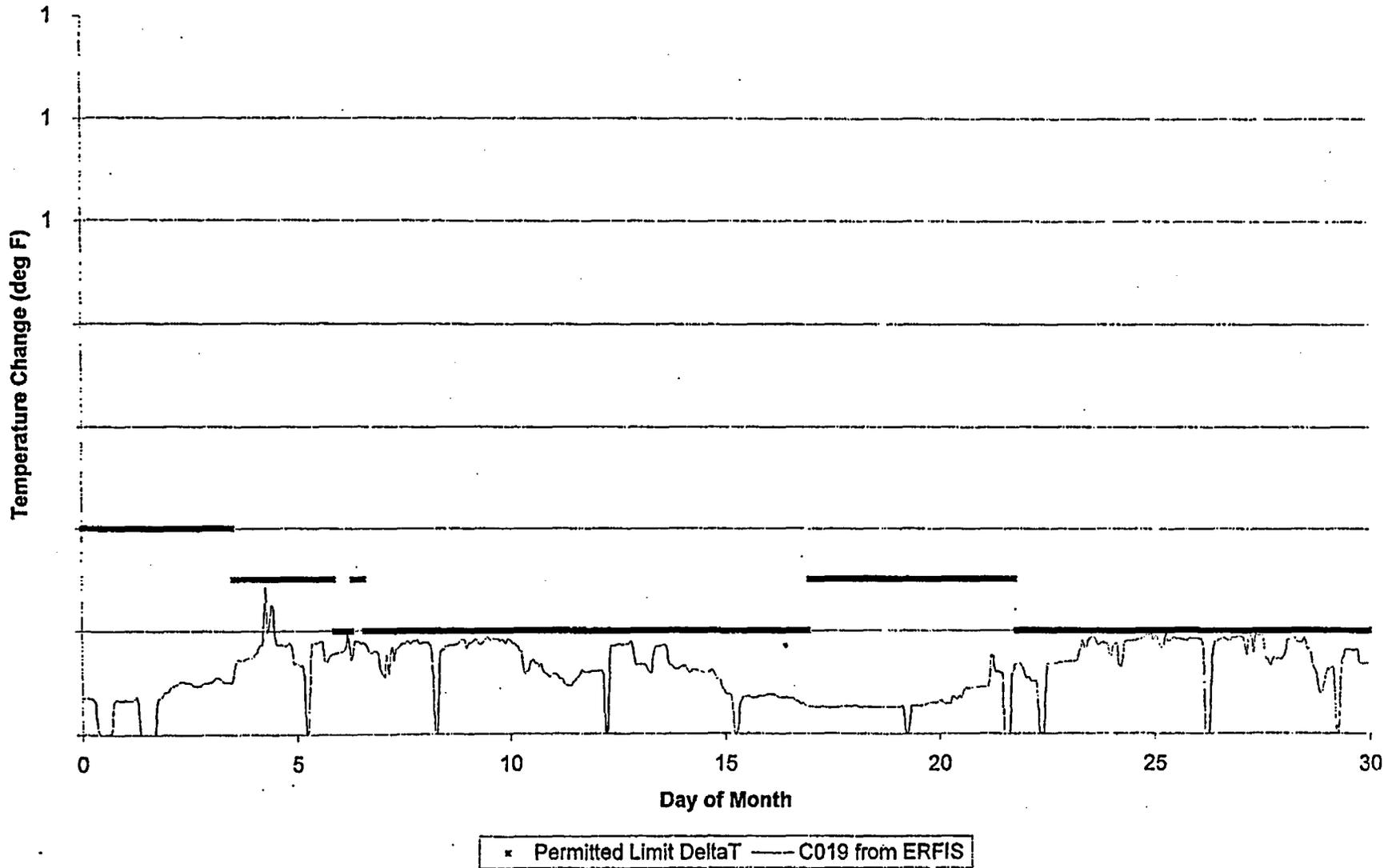
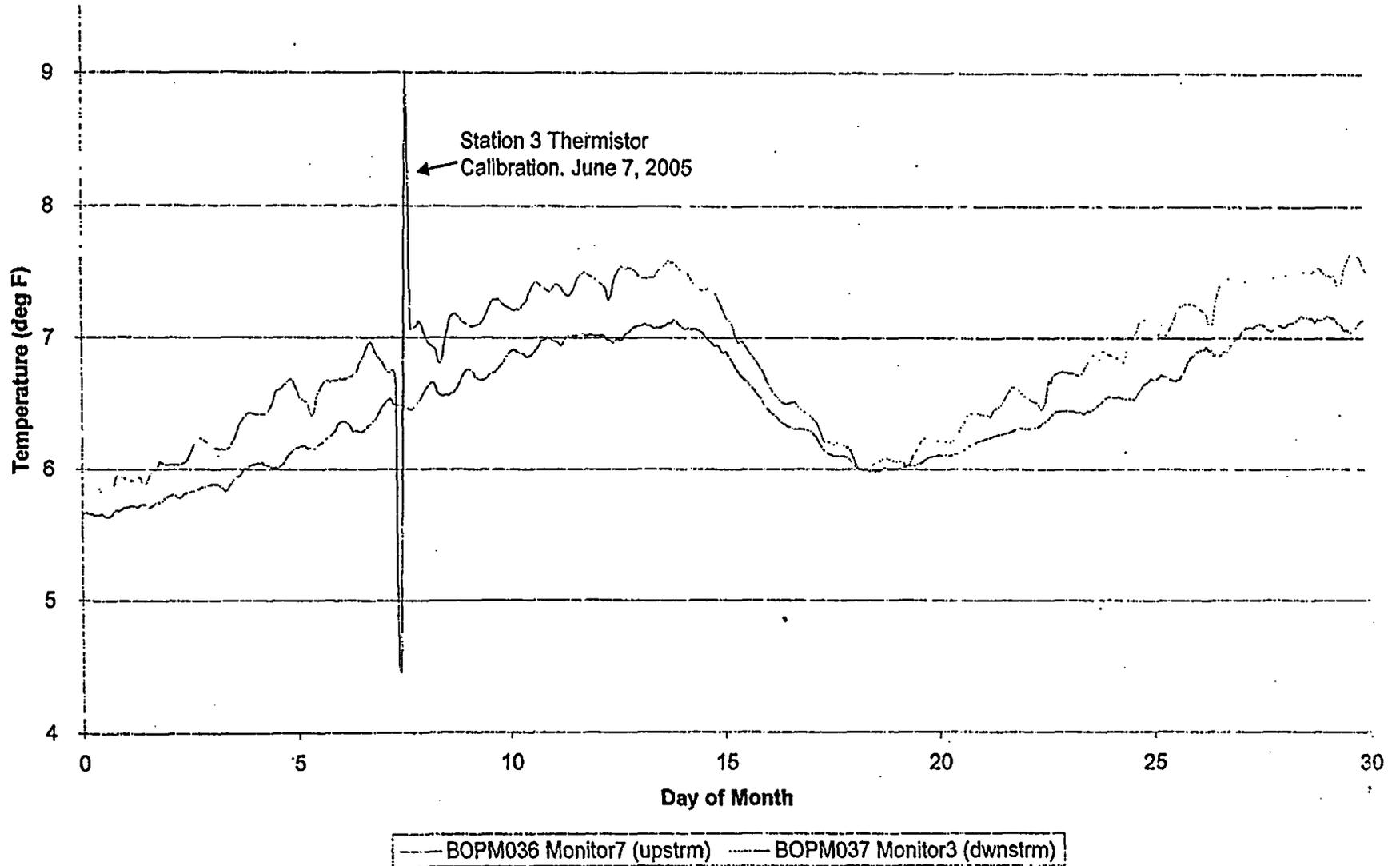


Figure 2. River Water Temperature at Monitor Sites for Jun 2005





12 August 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for July 2005

Dear Ms. Tanner,

As required in Section D.2. in the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for July 2005. The Station was forced into an unplanned outage when complications in a switchyard which triggered an automatic shutdown of the Station. The outage ran from July 25 at 1526 through July 28 at 1436.

The simulated temperature increase to the Connecticut River for July 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 1.97° F on 1 July 2005 when the permitted limit was 2.0° F. This occurred at a river flow of 6,760 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of July ranged from 1,530 cfs to 14,439 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for July 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 70.36 °F to 76.89 °F during July 2005. The downstream measured River Station 3 temperatures ranged from 72.44 °F to 81.27 °F during July 2005. The permitted daily discharge volume from the Station ranged from approximately 262 million gallons per day (MGD) on July 21 to 485 MGD on several days in July (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were seven circulating water and service water chlorination treatments during July 2005. Table 2 provides details on the treatment duration, amount of oxidant detected, and the pH measured during treatment. The required daily circulating water and service water pH values were obtained from water



● Page 2

taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) and are reported in Table 3.

There were no discharges of radioactive liquids during July 2005 (Table 4).

The Station's heating boilers were secured throughout July 2005, therefore no discharges occurred (Table 5).

The traveling screens and strainers were backwashed daily during July 2005, the backwash volume ranged from 0.017 to 0.026 million gallons per day, the permitted limit of 0.050 million gallons per day was not exceeded (Table 6).

The water treatment carbon filters were backwashed once during July 2005 (Table 7). The discharge volume was approximately 0.001 million gallons, well below the permitted limit of 0.010 million gallons per day.

The monthly inspection of the chemical containment berm was conducted on August 1, 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,  
*Entergy Nuclear Vermont Yankee, LLC*

Handwritten signature of Lynn DeWald in black ink.

Lynn DeWald  
Environmental Specialist

Handwritten signature of Samuel A. Wender IV in black ink.

Samuel A. Wender IV  
Chemistry Superintendent



Entergy Nuclear Vermont Yankee, LLC  
322 Governor Hunt Road, Vernon Vermont

**CERTIFICATION STATEMENT**

PERMIT NUMBER: 3-1199 / VT0000264

PERMITTEE: Entergy Nuclear Vermont Yankee, LLC

MONTH/YEAR OF REPORT: July 2005

REPORT PREPARED BY: Lynn DeWald

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fine and imprisonment.

APPROVED BY: Lynn DeWald for Entergy DATE 8/11/05  
Authorized Agent for the Permittee

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

Table 1. Volume of Water Discharged to River  
July, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	484.54
2	484.52
3	484.54
4	484.54
5	364.95
6	358.58
7	350.29
8	368.93
9	369.00
10	484.54
11	484.47
12	443.08
13	484.50
14	344.24
15	429.08
16	385.55
17	360.28
18	385.66
19	419.93
20	329.88
21	262.37
22	397.62
23	465.02
24	466.36
25	397.03
26	331.80
27	327.41
28	425.61
29	433.96
30	428.03
31	385.38

(a) Estimated value based on gate position

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water/Service Water

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
 July, 2005**

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1							
2							
3							
4							
5	100	0.05	0.23	8.1	0.05	0.16	8.1
6							
7	95	0.05	0.20	7.5	0.05	0.18	7.6
8							
9							
10							
11							
12	65	0.05	0.16	8.0	0.05	0.11	8.0
13							
14	66	0.05	0.11	8.2	0.05	0.11	8.2
15							
16							
17							
18	65	0.05	0.20	8.1	0.05	0.11	8.2
19							
20							
21	65	0.05	0.25	7.9	0.05	0.16	8.0
22							
23							
24							
25	65	0.05	0.29	7.6	0.05	0.16	7.8
26							
27							
28							
29							
30							
31							

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge

(b) Sample taken from discharge structure

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water

Table 3. Daily Condenser Water pH Measurement  
 July, 2005

Day	(a) pH	(b) pH	(c) pH
1	7.80		
2	7.90		
3	7.90		
4	7.90		
5		7.46	
6	8.00		
7	7.60		
8	8.10		
9	8.10		
10	8.00		
11	7.50		
12	8.00	7.40	
13	8.10		
14	8.20		
15	8.10		
16	8.10		
17	8.00		
18	8.10		
19	7.70	7.40	
20	7.90	7.37	
21	7.90		
22	7.90		
23	8.00		
24	7.90		
25	7.60		
26	7.00	7.20	7.20
27	7.40		
28	7.60		
29	8.00		
30	7.80		
31	7.80		

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
July, 2005**

There were no radioactive liquid discharges  
in July, 2005

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 003, Plant Heating Boiler Blowdown

Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
July, 2005

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1	boilers secured	NA
2	boilers secured	NA
3	boilers secured	NA
4	boilers secured	NA
5	boilers secured	NA
6	boilers secured	NA
7	boilers secured	NA
8	boilers secured	NA
9	boilers secured	NA
10	boilers secured	NA
11	boilers secured	NA
12	boilers secured	NA
13	boilers secured	NA
14	boilers secured	NA
15	boilers secured	NA
16	boilers secured	NA
17	boilers secured	NA
18	boilers secured	NA
19	boilers secured	NA
20	boilers secured	NA
21	boilers secured	NA
22	boilers secured	NA
23	boilers secured	NA
24	boilers secured	NA
25	boilers secured	NA
26	boilers secured	NA
27	boilers secured	NA
28	boilers secured	NA
29	boilers secured	NA
30	boilers secured	NA
31	boilers secured	NA

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 009, Strainer and Traveling Screen Backwash

Table 6. Strainer and Traveling Screen Backwash  
July, 2005

Day	Discharge Flow Rate (millions of gal/day) <sup>(a)</sup>
1	0.017
2	0.017
3	0.017
4	0.017
5	0.017
6	0.017
7	0.017
8	0.017
9	0.017
10	0.026
11	0.026
12	0.026
13	0.017
14	0.017
15	0.017
16	0.017
17	0.017
18	0.017
19	0.017
20	0.017
21	0.017
22	0.017
23	0.017
24	0.017
25	0.017
26	0.017
27	0.017
28	0.017
29	0.017
30	0.017
31	0.017

(a) Estimated value based on average river flow rate (cfs)

Entergy Nuclear Vermont Yankee. LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: July 2005

<b>Date</b>	<b>Backwash Pump Start Time</b>	<b>Backwash Pump Secured Time</b>	<b>Backwash flow rate (gpm)</b>	<b>Total gallons discharged (MGD)</b>
07/14/2005	2140	2150	140	0.001

Figure 1. River Water Temperature Change (Delta T) due to Plant Discharge for July 2005

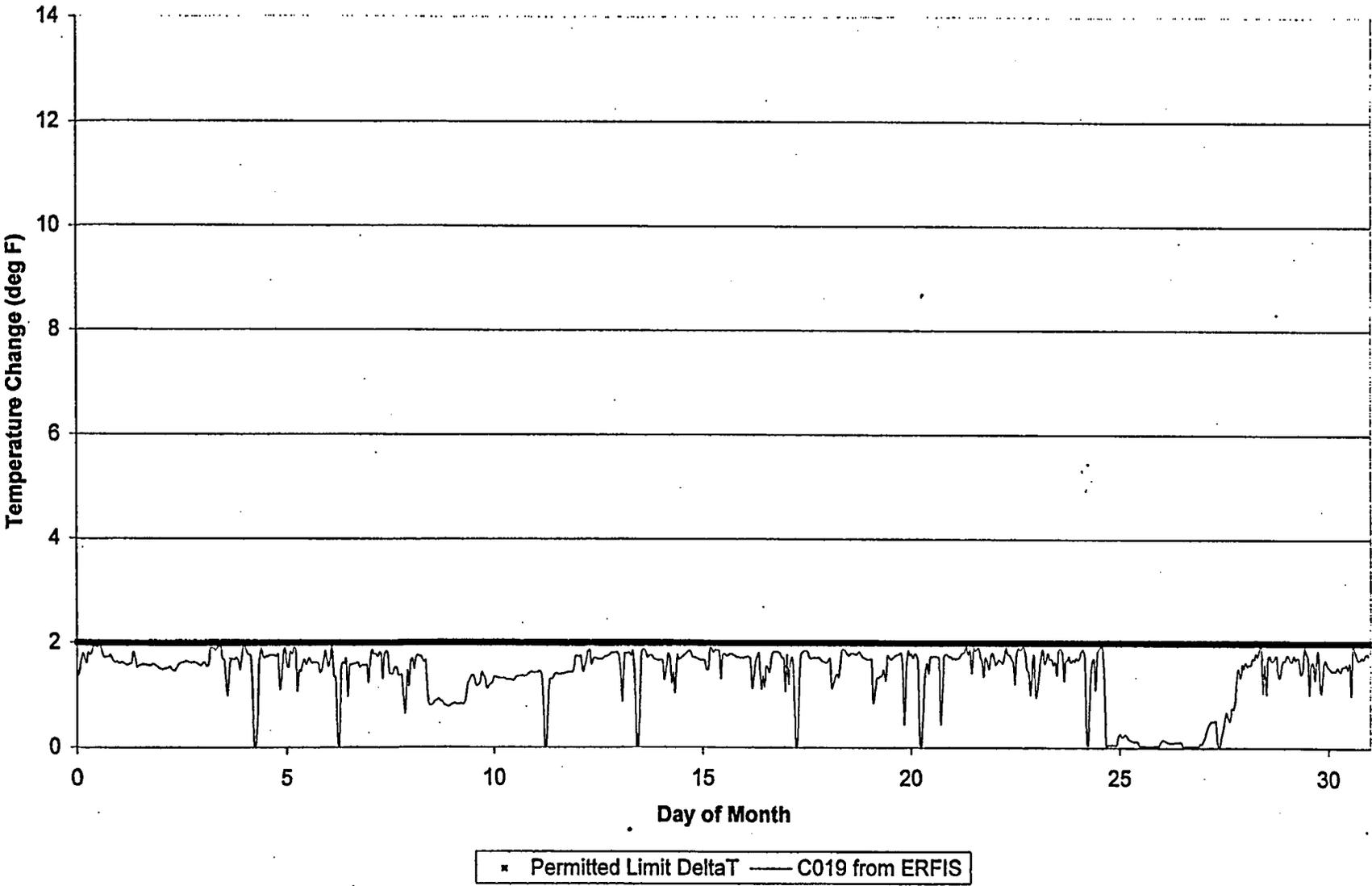
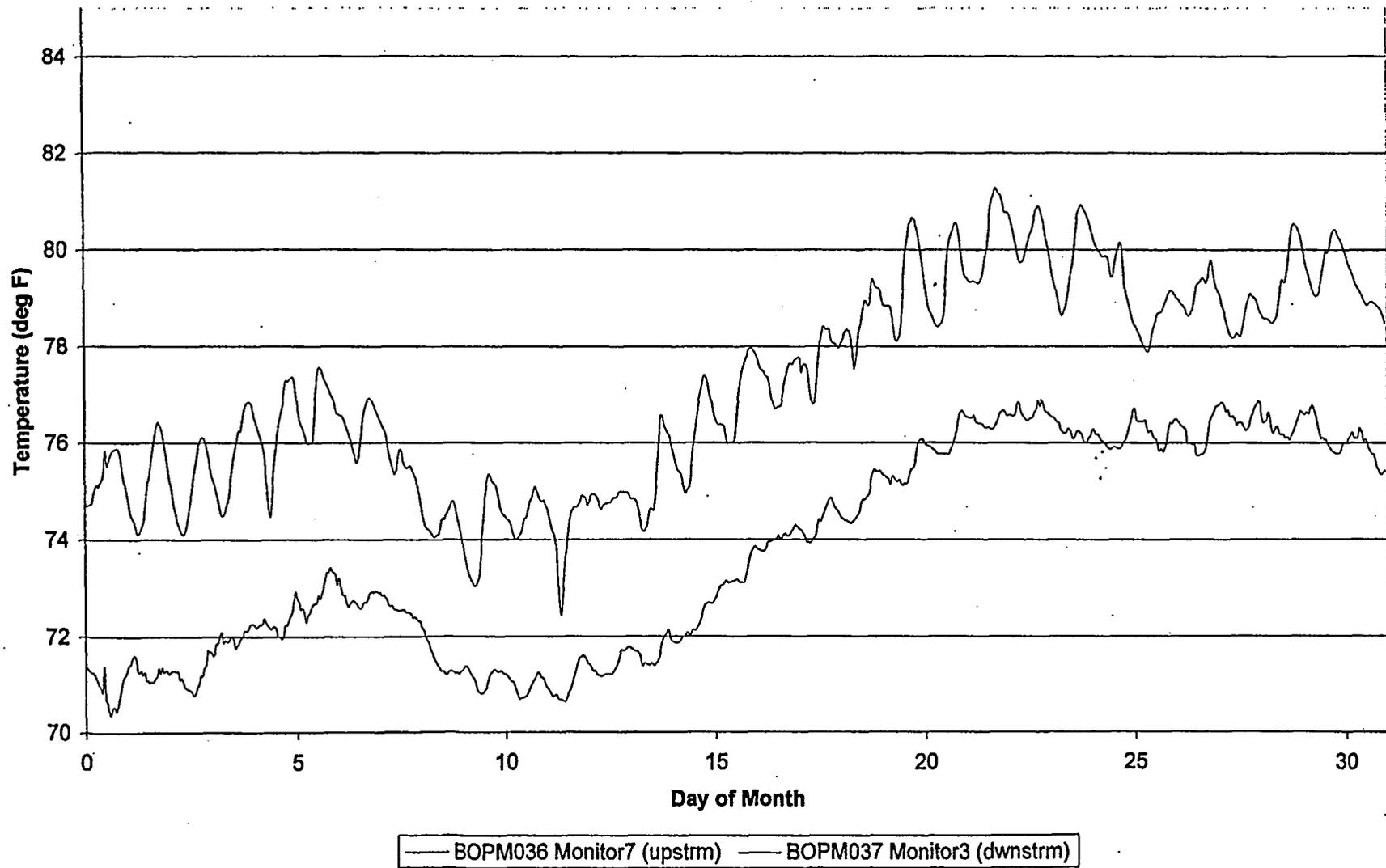


Figure 2. River Water Temperature at Monitor Sites for July 2005





22 September 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for August 2005

Dear Ms. Tanner,

As required in Section D.2. in the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for August 2005

The simulated temperature increase to the Connecticut River for August 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 1.95° F on 3 August 2005 when the permitted limit was 2.0 °F. This occurred at a river flow of 4,908 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of August ranged from 1,279 cfs to 7,068 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for August 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 73.22 °F to 78.14 °F during August 2005. The downstream measured River Station 3 temperatures ranged from 75.10 °F to 82.53 °F during August 2005. The permitted daily discharge volume from the Station ranged from approximately 130 million gallons per day (MGD) on August 8 to 485 MGD on August 3 (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were nine circulating water and service water chlorination treatments during August 2005. Table 2 provides details on the treatment duration, amount of oxidant detected, and the pH measured during treatment. The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) and are reported in Table 3.

● Page 2

There were no discharges of radioactive liquids during August 2005 (Table 4).

The Station's heating boilers were secured throughout August 2005, therefore no discharges occurred (Table 5).

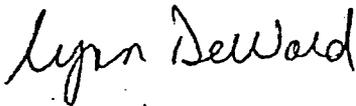
The traveling screens and strainers were backwashed daily during August 2005, the backwash volume was approximately 0.017 million gallons per day, the permitted limit of 0.050 million gallons per day was not exceeded (Table 6).

The water treatment carbon filters were backwashed once during August 2005 (Table 7). The discharge volume was approximately 0.001 million gallons, well below the permitted limit of 0.010 million gallons per day.

The monthly inspection of the chemical containment berm was conducted on August 29, 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,  
*Entergy Nuclear Vermont Yankee, LLC*



Lynn DeWald  
Environmental Specialist



Samuel A. Wender IV  
Chemistry Superintendent



Entergy Nuclear Northeast  
Entergy Nuclear Operations, Inc.  
Vermont Yankee  
322 Governor Hunt Rd.  
P.O. Box 157  
Vernon, VT 05354  
Tel 802-257-7711

Entergy Nuclear Vermont Yankee, LLC  
322 Governor Hunt Road, Vernon Vermont

**CERTIFICATION STATEMENT**

PERMIT NUMBER: 3-1199 / VT0000264

PERMITTEE: Entergy Nuclear Vermont Yankee, LLC

MONTH/YEAR OF REPORT: August 2005

REPORT PREPARED BY: Lynn DeWald

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fine and imprisonment.

APPROVED BY: Lynn DeWald DATE Sept. 22, 2005  
Authorized Agent for the Permittee

Table 1. Volume of Water Discharged to River  
August, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	266.27
2	331.67
3	484.53
4	404.05
5	376.00
6	322.78
7	320.65
8	129.56
9	305.37
10	199.51
11	173.04
12	154.53
13	146.59
14	187.28
15	213.75
16	303.26
17	306.62
18	392.53
19	379.73
20	177.91
21	147.15
22	322.07
23	405.15
24	312.33
25	204.06
26	232.59
27	152.17
28	154.94
29	272.79
30	372.73
31	363.19

(a) Estimated value based on gate position

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: August 2005

<b>Date</b>	<b>Backwash Pump Start Time</b>	<b>Backwash Pump Secured Time</b>	<b>Backwash flow rate (gpm)</b>	<b>Total gallons discharged (MGD)</b>
08/15/2005	1218	1228	130	0.001

Table 1. Volume of Water Discharged to River  
August, 2005

Day	Discharge Flow Rate (millions of gal/day) <sup>(a)</sup>
1	16.97
2	331.67
3	484.53
4	404.05
5	376.00
6	322.78
7	320.65
8	129.56
9	305.37
10	199.51
11	173.04
12	154.53
13	146.59
14	187.28
15	213.75
16	303.26
17	306.62
18	392.53
19	379.73
20	177.91
21	147.15
22	322.07
23	405.15
24	312.33
25	204.06
26	232.59
27	152.17
28	154.94
29	272.79
30	372.73
31	363.19

(a) Estimated value based on gate position

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
August, 2005**

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1	110	0.05	0.18	7.6	0.05	0.14	7.7
2							
3							
4	110	0.05	0.14	8.0	0.05	0.10	8.1
5							
6							
7							
8	95	0.05	0.23	8.0	0.05	0.25	8.0
9							
10							
11	90	0.05	0.20	8.3	0.05	0.16	8.3
12							
13							
14							
15	65	0.05	0.38	8.2	0.05	0.27	8.3
16							
17							
18	65	0.05	0.27	7.9	0.05	0.18	8.0
19							
20							
21							
22	90	0.05	0.11	8.2	0.05	0.11	8.2
23							
24							
25	85	0.05	0.18	7.8	0.05	0.11	8.0
26							
27							
28							
29	100	0.05	0.11	7.8	0.05	0.11	8.1
30							
31							

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge

(b) Sample taken from discharge structure

**Table 3. Daily Condenser Water pH Measurement  
August, 2005**

	(a)	(b)	(c)
Day	pH	pH	pH
1	7.60		
2	8.10	7.40	
3	8.10		
4	8.00		
5	8.00		
6	8.10		
7	8.00		
8	8.00		
9	8.10	7.65	7.60
10	8.20	7.70	7.60
11	8.30	8.30	8.30
12	8.10	8.10	8.10
13	8.00		
14	8.00		
15	8.20		8.30
16	8.00	7.44	7.60
17	7.80	7.60	
18	8.00		
19	7.90		
20	7.90		
21	8.20		
22	8.20		
23	8.20	7.40	
24	8.00		
25	7.80		
26	7.90		
27	8.00		
28	8.10		
29	7.80		8.10
30	8.00	7.30	
31	8.00		

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
August, 2005**

There were no radioactive liquid discharges  
in August, 2005

Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
August, 2005

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1	boiler secured	
2	boiler secured	
3	boiler secured	
4	boiler secured	
5	boiler secured	
6	boiler secured	
7	boiler secured	
8	boiler secured	
9	boiler secured	
10	boiler secured	
11	boiler secured	
12	boiler secured	
13	boiler secured	
14	boiler secured	
15	boiler secured	
16	boiler secured	
17	boiler secured	..
18	boiler secured	
19	boiler secured	
20	boiler secured	
21	boiler secured	
22	boiler secured	
23	boiler secured	
24	boiler secured	
25	boiler secured	
26	boiler secured	
27	boiler secured	
28	boiler secured	
29	boiler secured	
30	boiler secured	
31	boiler secured	

Table 6. Strainer and Traveling Screen Backwash  
August, 2005

Day	Discharge Flow Rate (millions of gal/day) <sup>(a)</sup>
1	0.017
2	0.017
3	0.017
4	0.017
5	0.017
6	0.017
7	0.017
8	0.017
9	0.017
10	0.017
11	0.017
12	0.017
13	0.017
14	0.017
15	0.017
16	0.017
17	0.017
18	0.017
19	0.017
20	0.017
21	0.017
22	0.017
23	0.017
24	0.017
25	0.017
26	0.017
27	0.017
28	0.017
29	0.017
30	0.017
31	0.017

(a) Estimated value based on average river flow rate (cfs)

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: August 2005

<b>Date</b>	<b>Backwash Pump Start Time</b>	<b>Backwash Pump Secured Time</b>	<b>Backwash flow rate (gpm)</b>	<b>Total gallons discharged (MGD)</b>
08/15/2005	1218	1228	130	0.001

Figure 1. River Water Temperature Change (Delta T) due to Plant Discharge for August 2005

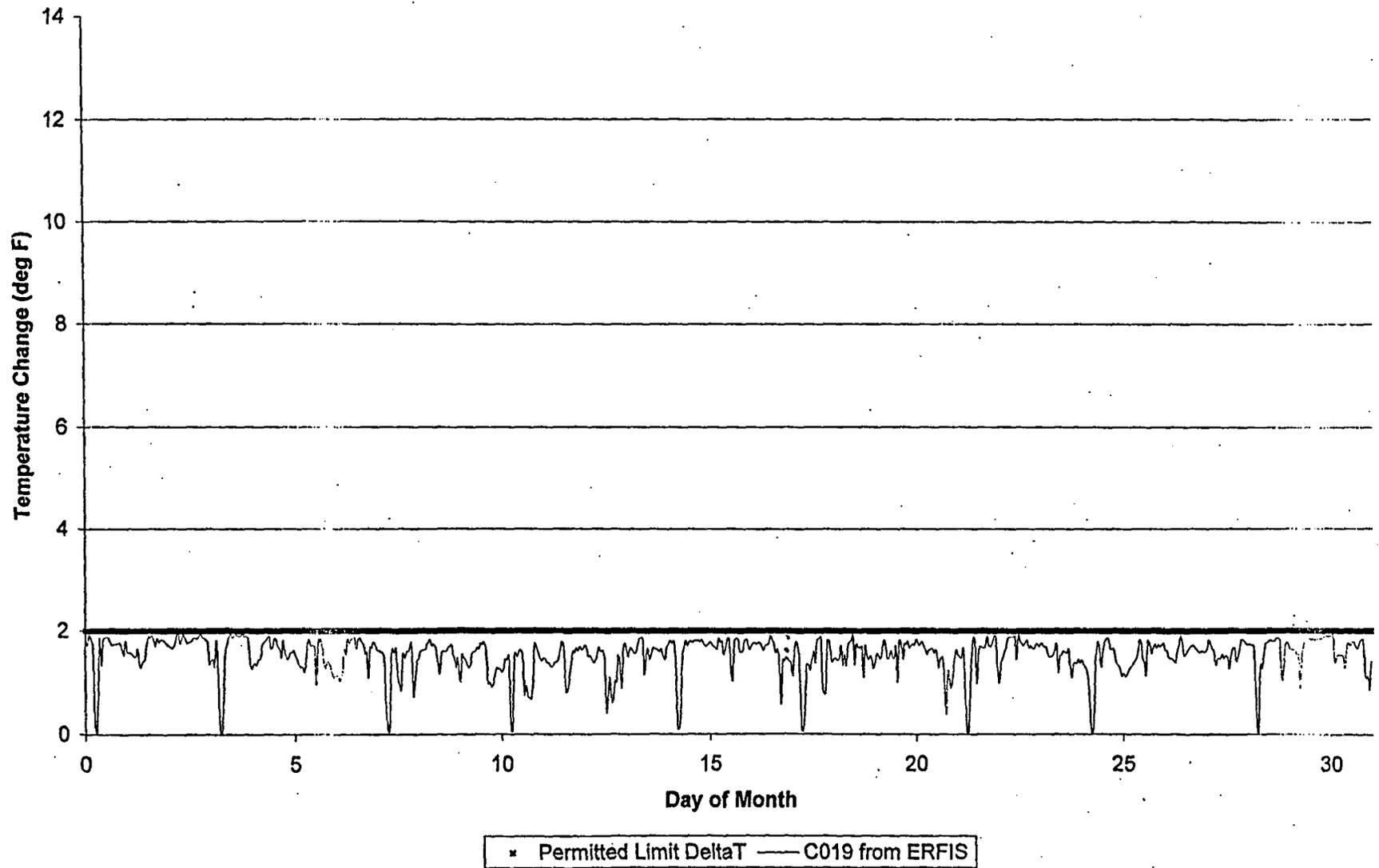
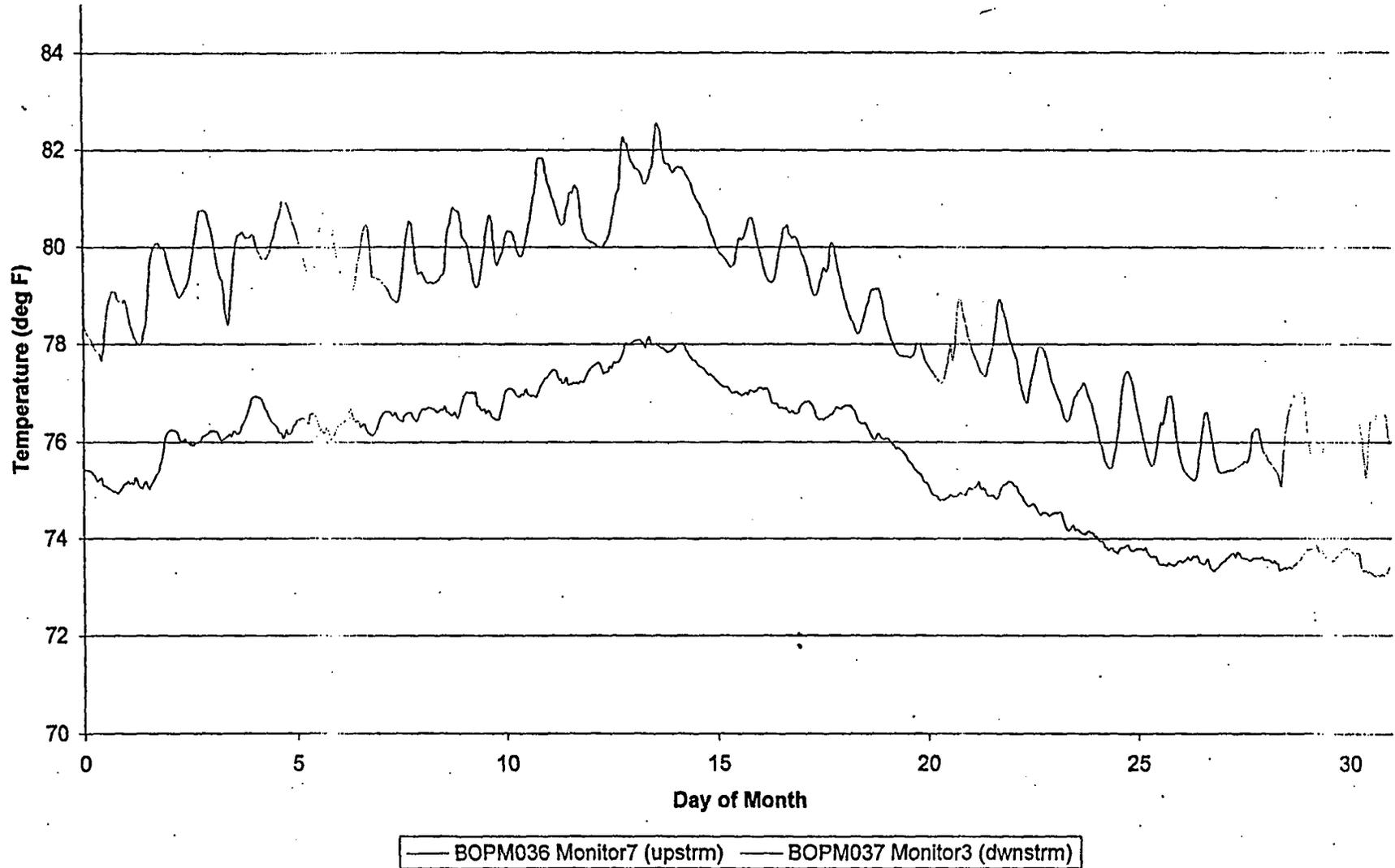


Figure 2. River Water Temperature at Monitor Sites for August 2005





**Entergy Nuclear Northeast**  
Entergy Nuclear Operations, Inc.  
Vermont Yankee  
322 Governor Hunt Rd.  
P.O. Box 157  
Vernon, VT 05354  
Tel 802-257-7711

5 October 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for September 2005

Dear Ms. Tanner,

As required in Section D.2. in the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for September 2005

The simulated temperature increase to the Connecticut River for September 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 1.95° F on 5 September 2005 when the permitted limit was 2.0 °F. This occurred at a river flow of 5,648 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of September ranged from 1,509 cfs to 19,827 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for September 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 65.56 °F to 73.50 °F during September 2005. The downstream measured River Station 3 temperatures ranged from 65.69 °F to 76.26 °F during September 2005. The permitted daily discharge volume from the Station ranged from approximately 129 million gallons per day (MGD) on September 26 to 485 MGD on September 2-4 (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were nine circulating water and service water chlorination treatments during September 2005. Table 2 provides details on the treatment duration, amount of oxidant detected, and the pH measured during treatment. The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) and are reported in Table 3.

● Page 2

There were no discharges of radioactive liquids during September 2005 (Table 4).

The Station's heating boilers were blown down twice in September 2005. In both instances the discharge flow was 18.0 gallons and the hydroquinone concentration was well below the permitted limit 15.0 ppm (Table 5).

The traveling screens and strainers were backwashed daily during September 2005, the backwash volume ranged from approximately 0.017 to 0.026 million gallons per day, the permitted limit of 0.050 million gallons per day was not exceeded (Table 6).

The water treatment carbon filters were backwashed once during September 2005 (Table 7). The discharge volume was approximately 0.001 million gallons, well below the permitted limit of 0.010 million gallons per day.

The monthly inspection of the chemical containment berm was conducted on September 27, 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,

*Entergy Nuclear Vermont Yankee, LLC*



Lynn DeWald  
Environmental Specialist



Samuel A. Wender IV  
Chemistry Superintendent



Entergy Nuclear Vermont Yankee, LLC  
322 Governor Hunt Road, Vernon Vermont

**CERTIFICATION STATEMENT**

PERMIT NUMBER: 3-1199 / VT0000264

PERMITTEE: Entergy Nuclear Vermont Yankee, LLC

MONTH/YEAR OF REPORT: September 2005

REPORT PREPARED BY: Lynn DeWald

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fine and imprisonment.

APPROVED BY: Lynn DeWald DATE October 5, 2005  
Authorized Agent for the Permittee

Table 1. Volume of Water Discharged to River  
September, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	418.04
2	484.52
3	484.50
4	484.50
5	389.65
6	362.61
7	303.00
8	170.65
9	286.92
10	404.58
11	345.37
12	214.78
13	270.05
14	147.74
15	132.19
16	120.31
17	213.92
18	277.97
19	297.24
20	335.04
21	282.83
22	232.88
23	261.25
24	458.84
25	306.22
26	129.22
27	219.54
28	338.41
29	231.63
30	236.08

(a) Estimated value based on gate position

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
September, 2005**

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1	95	0.05	0.11	8.0	0.05	0.11	8.0
2							
3							
4							
5							
6	95	0.05	0.14	7.8	0.05	0.16	7.8
7							
8							
9	85	0.05	0.11	7.9	0.05	0.11	7.9
10							
11							
12	80	0.05	0.11	8.1	0.05	0.11	8.2
13							
14							
15	65	0.05	0.23	8.1	0.05	0.16	8.2
16							
17							
18							
19	65	0.05	0.16	7.7	0.05	0.16	8.0
20							
21							
22	65	0.05	0.11	7.8	0.05	0.11	8.0
23							
24							
25							
26	65	0.05	0.11	8.2	0.05	0.11	8.2
27							
28							
29	65	0.05	0.11	7.8	0.05	0.11	8.2
30							

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge

(b) Sample taken from discharge structure

**Table 3. Daily Condenser Water pH Measurement  
September, 2005**

Day	(a) pH	(b) pH	(c) pH
1			
2	7.80		
3	7.50	7.40	7.40
4	8.00		8.00
5	7.90	7.90	7.90
6	7.80	7.80	7.80
7	8.00		
8	8.00		
9		7.90	
10	7.70		
11	7.90		
12	8.20		
13		7.40	7.40
14	8.20		
15	8.10		
16	8.10		
17	8.00		
18		8.00	
19	8.00		
20	8.00		
21	8.00	8.00	8.00
22	8.00	7.80	8.00
23	8.00	8.00	8.00
24	8.00		
25	7.90		
26	8.10		
27	8.00		
28	8.10		
29	7.80		
30	8.10		

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
September, 2005**

There were no radioactive liquid discharges  
in September, 2005

**Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
September, 2005**

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29	18.0	0.450
30	18.0	1.020

**Table 6. Strainer and Traveling Screen Backwash  
September, 2005**

Day	(a) Discharge Flow Rate (millions of gal/day)
1	0.017
2	0.026
3	0.026
4	0.017
5	0.017
6	0.017
7	0.017
8	0.017
9	0.017
10	0.017
11	0.017
12	0.017
13	0.017
14	0.017
15	0.017
16	0.017
17	0.017
18	0.017
19	0.017
20	0.017
21	0.017
22	0.017
23	0.017
24	0.017
25	0.017
26	0.017
27	0.017
28	0.017
29	0.017
30	0.017

(a) Estimated value based on average river flow rate (cfs)

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: September 2005

<b>Date</b>	<b>Backwash Pump Start Time</b>	<b>Backwash Pump Secured Time</b>	<b>Backwash flow rate (gpm)</b>	<b>Total gallons discharged (MGD)</b>
09/10/2005	2012	2017	125	0.001

Figure1. River Water Temperature Change (Delta T) due to Plant Discharge for September 2005

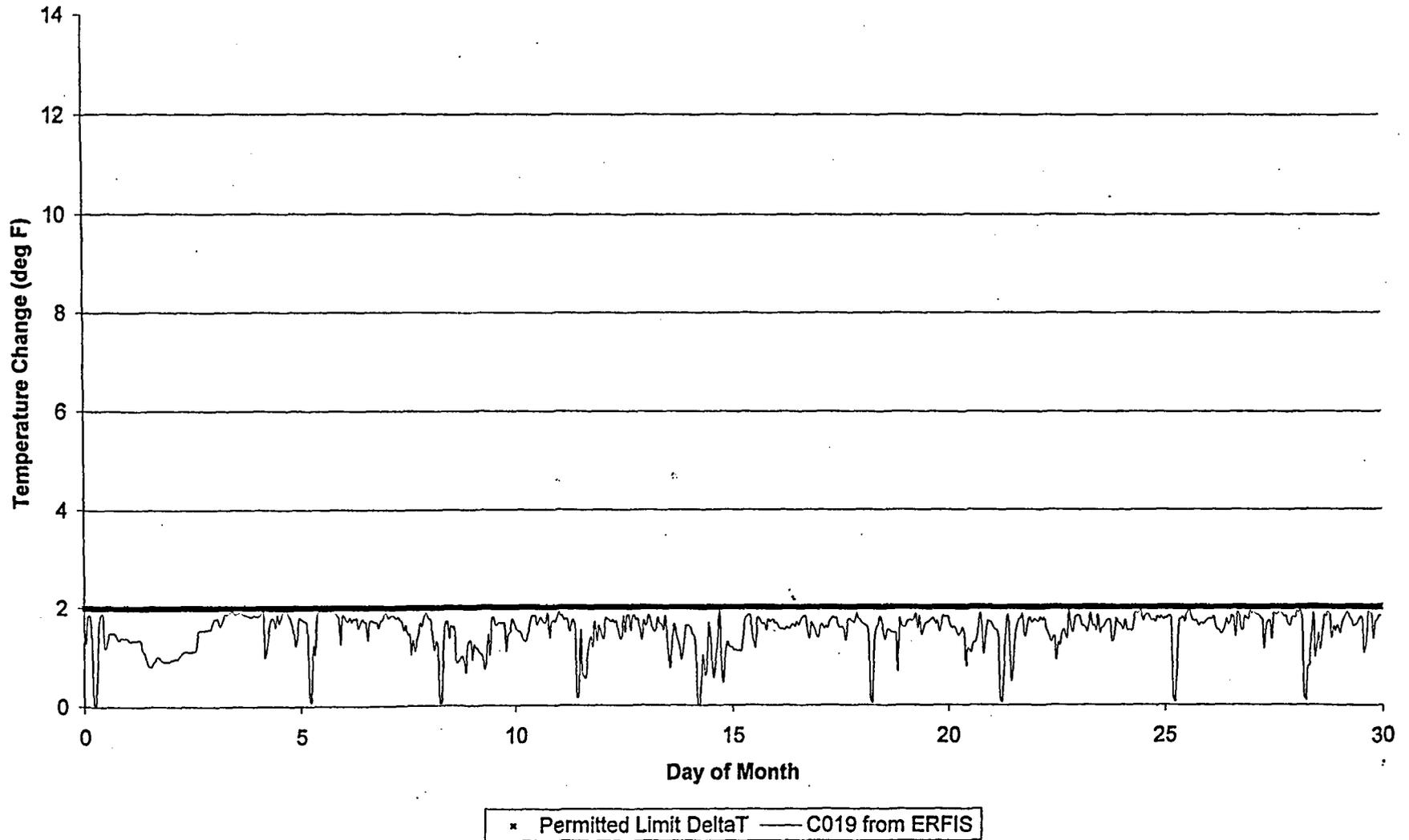
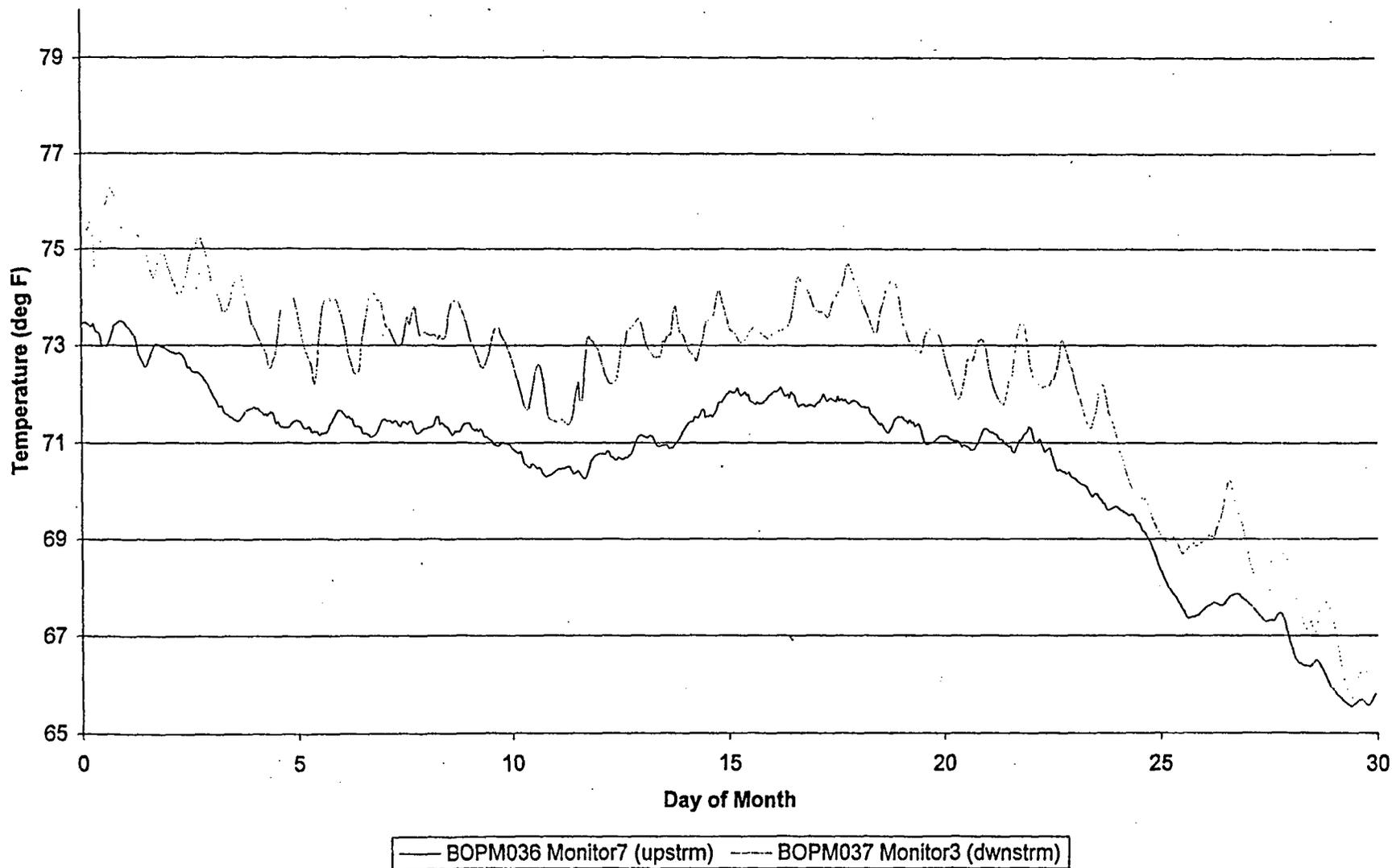


Figure 2. River Water Temperature at Monitor Sites for September 2005





**Entergy Nuclear Northeast**  
Entergy Nuclear Operations, Inc.  
Vermont Yankee  
322 Governor Hunt Rd.  
P.O. Box 157  
Vernon, VT 05354  
Tel 802-257-7711

14 November 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for October 2005

Dear Ms. Tanner,

As required in Section D.2. in the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for October 2005. Vermont Yankee was in a refueling and maintenance outage from October 22, 2005 and the Plant remained shut down for the remainder of October.

The simulated temperature increase to the Connecticut River for October 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 2.36° F on 12 October 2005 when the permitted limit was 4.0 °F. This occurred at a river flow of 7,239 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of October ranged from 1,617 cfs to 42,424 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for October 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 45.24 °F to 65.81 °F during October 2005. The downstream measured River Station 3 temperatures ranged from 44.12 °F to 65.12 °F during October 2005. The permitted daily discharge volume from the Station ranged from 0.00 million gallons per day (MGD) beginning on October 25 and lasting through the end of October, to 484 MGD on several days in mid-October (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were two circulating water and three service water chlorination treatments during October 2005. Table 2 provides details on the treatment duration, amount of oxidant detected, and the pH measured during treatment. The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) and are reported in Table 3.

● Page 2

There were no discharges of radioactive liquids during October 2005 (Table 4).

The Station's heating boilers were blown down a dozen times October 2005. In all instances the discharge flow was 18.0 gallons and the hydroquinone concentration was well below the permitted limit 15.0 ppm (Table 5).

The traveling screens and strainers were backwashed daily during October 2005, the backwash volume ranged from approximately 0.017 to 0.044 million gallons per day, the permitted limit of 0.050 million gallons per day was not exceeded (Table 6).

The water treatment carbon filters were backwashed once during October 2005 (Table 7). The discharge volume was approximately 0.001 million gallons, well below the permitted limit of 0.010 million gallons per day.

The monthly inspection of the chemical containment berm was conducted on October 27, 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,  
*Entergy Nuclear Vermont Yankee, LLC*



Lynn DeWald  
Environmental Specialist



Samuel A. Wender IV  
Chemistry Superintendent



Entergy Nuclear Vermont Yankee, LLC  
322 Governor Hunt Road, Vernon Vermont

### CERTIFICATION STATEMENT

PERMIT NUMBER: 3-1199 / VT0000264

PERMITTEE: Entergy Nuclear Vermont Yankee, LLC

MONTH/YEAR OF REPORT: October 2005

REPORT PREPARED BY: Lynn DeWald

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fine and imprisonment.

APPROVED BY: Lynn DeWald DATE November 14, 2005  
Authorized Agent for the Permittee

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

Table 1. Volume of Water Discharged to River  
October, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	365.55
2	372.81
3	220.96
4	106.01
5	165.53
6	240.51
7	225.28
8	345.06
9	479.08
10	480.62
11	484.34
12	479.77
13	484.30
14	484.31
15	463.92
16	484.30
17	479.93
18	426.96
19	479.93
20	479.89
21	479.91
22	442.73
23	262.06
24	14.62
25	01.93
26	01.93
27	01.93
28	01.93
29	01.93
30	01.93
31	01.93

(a) Estimated value based on gate position

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water/Service Water

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
 October, 2005**

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1							
2							
3	65	0.05	0.25	8.0	0.05	0.16	8.2
4							
5							
6	100	0.05	0.34	8.1	0.05	0.25	8.2
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18	45				0.05	0.11	7.4
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge  
 (b) Sample taken from discharge structure

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water

Table 3. Daily Condenser Water pH Measurement  
 October, 2005

Day	(a) pH	(b) pH	(c) pH
1	8.10		
2	8.10		
3	8.20		
4	8.10	7.50	
5	8.10		
6	8.10		
7	8.00		
8	8.00		
9	7.30	7.40	
10	7.40		
11	7.40	7.30	
12	7.50		
13	7.30		
14	7.30		
15	7.70		
16	7.30		
17	7.20		
18	7.40	7.20	
19	7.20		
20	7.20		
21	7.30		
22	7.30		
23	7.20		
24	7.40		
25			7.30
26			7.20
27			7.20
28			7.20
29			7.20
30			7.10
31	7.40		7.20

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
October, 2005**

There were no radioactive liquid discharges  
in October, 2005

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 003, Plant Heating Boiler Blowdown

Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
October, 2005

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18	18.0	1.000
19		
20		
21	18.0	0.625
22	18.0	1.025
23	18.0	1.500
24	18.0	1.525
25	18.0	1.050
26	18.0	1.000
27	18.0	1.200
28	18.0	1.325
29	18.0	1.200
30	18.0	1.500
31	18.0	1.800

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 009, Strainer and Traveling Screen Backwash

Table 6. Strainer and Traveling Screen Backwash  
October, 2005

Day	Discharge Flow Rate (millions of gal/day) <sup>(a)</sup>
1	0.017
2	0.017
3	0.017
4	0.017
5	0.017
6	0.017
7	0.017
8	0.026
9	0.044
10	0.044
11	0.044
12	0.035
13	0.026
14	0.026
15	0.044
16	0.044
17	0.044
18	0.044
19	0.044
20	0.044
21	0.044
22	0.035
23	0.035
24	0.035
25	0.044
26	0.044
27	0.044
28	0.044
29	0.035
30	0.035
31	0.035

(a) Estimated value based on average river flow rate (cfs)

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: October 2005

Date	Backwash Pump Start Time	Backwash Pump Secured Time	Backwash flow rate (gpm)	Total gallons discharged (MGD)
10/05/2005	1500	1508	125	0.001

Figure1. River Water Temperature Change (Delta T) due to Plant Discharge for October 2005

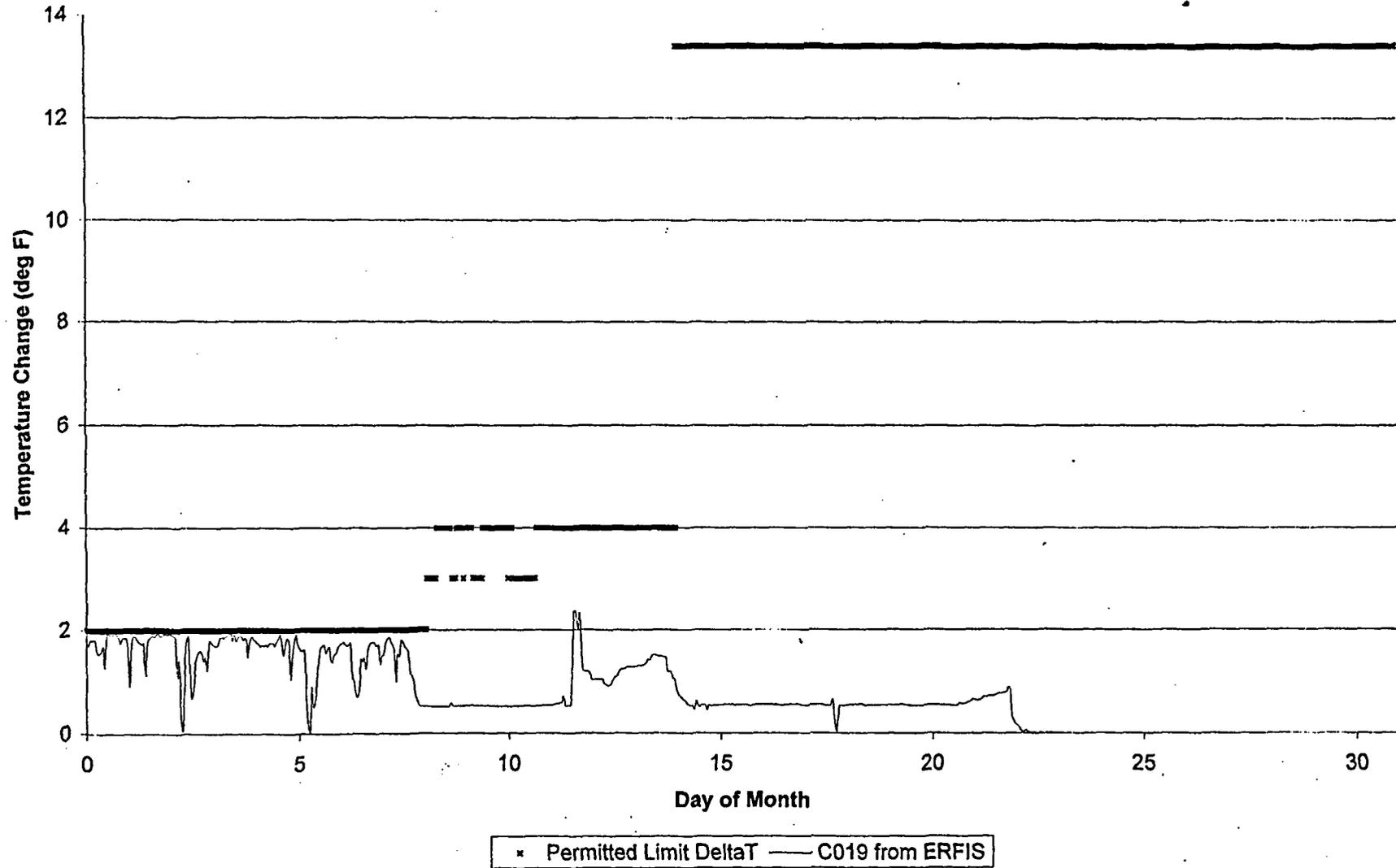
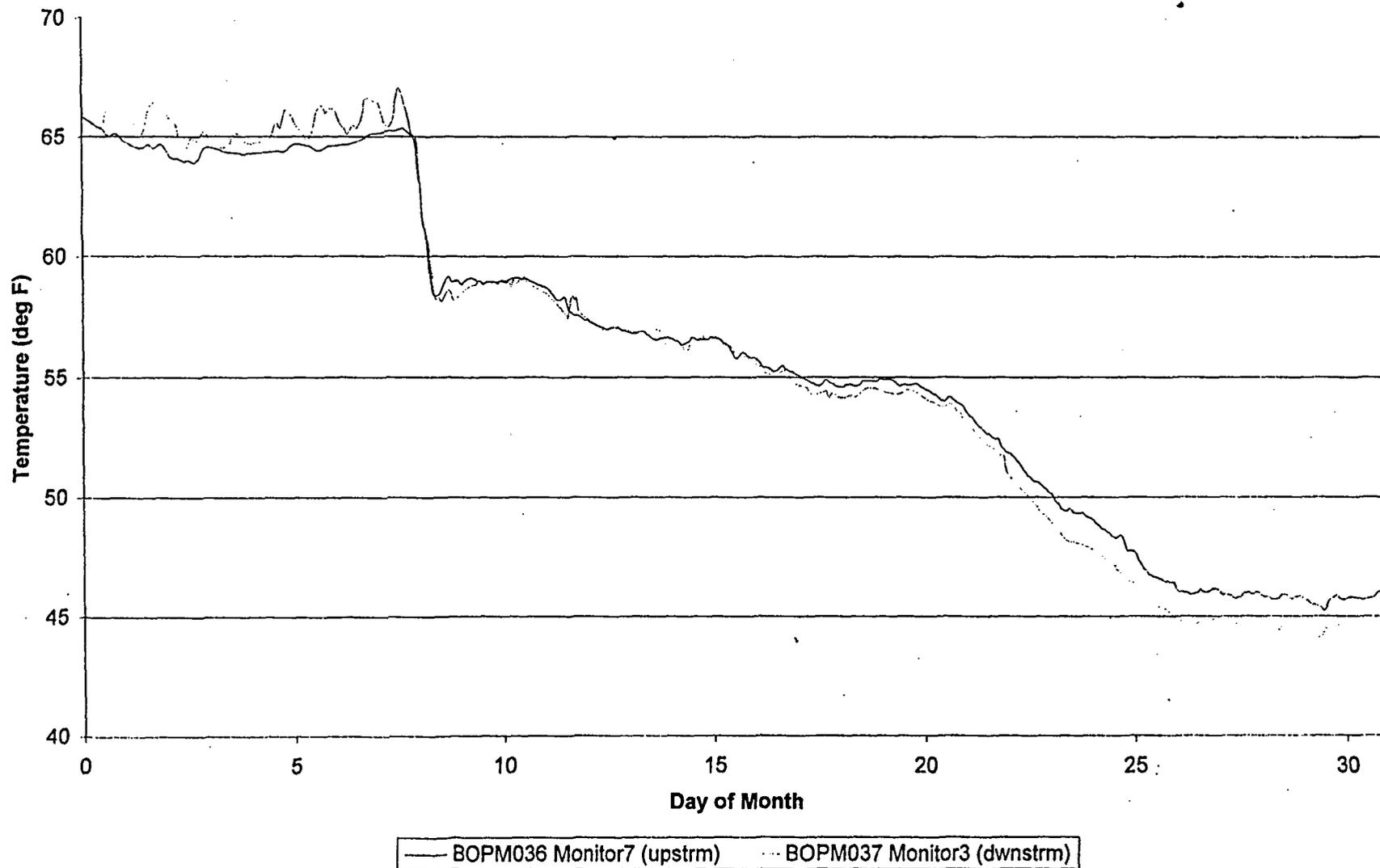


Figure 2. River Water Temperature at Monitor Sites for October 2005





Entergy Nuclear Northeast  
Entergy Nuclear Operations, Inc.  
Vermont Yankee  
322 Governor Hunt Rd.  
P.O. Box 157  
Vernon, VT 05354  
Tel 802-257-7711

6 December 2005

Ms. Theresa Tanner  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for November 2005

Dear Ms. Tanner,

As required in Section D.2. in the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for November 2005. Vermont Yankee was in a refueling and maintenance outage from October 22, 2005 through November 10, 2005.

The simulated temperature increase to the Connecticut River for November 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 2.33° F on 29 November 2005 when the permitted limit was 13.4 °F. This occurred at a river flow of 8,229 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of November ranged from 8,228 cfs to 53,010 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for November 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 37.42°F to 48.44°F during November 2005. The downstream measured River Station 3 temperatures ranged from 34.89 °F to 47.53 °F during November 2005. The permitted daily discharge volume from the Station ranged from 0.00 million gallons per day (MGD) during the refueling outage and through November 10, 2005, to 323 MGD on November 30, 2005 (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were two service water and no circulating water chlorination treatments during November 2005. Table 2 provides details on the treatment duration, amount of oxidant detected, and the pH measured during treatment. The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) and are reported in Table 3.

● Page 2

There were no discharges of radioactive liquids during November 2005 (Table 4).

The Station's heating boilers were blown daily during November 2005. In all instances the discharge flow was 18.0 gallons and the hydroquinone concentration was well below the permitted limit 15.0 ppm (Table 5).

The traveling screens and strainers were backwashed daily during November 2005, the backwash volume ranged from approximately 0.026 to 0.044 million gallons per day, the permitted limit of 0.050 million gallons per day was not exceeded (Table 6).

The water treatment carbon filters were backwashed once during November 2005 (Table 7). The discharge volume was approximately 0.001 million gallons, well below the permitted limit of 0.010 million gallons per day.

The monthly inspection of the chemical containment berm was conducted on November 10, 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,  
*Entergy Nuclear Vermont Yankee, LLC*



Lynn DeWald  
Environmental Specialist



Samuel A. Wender IV  
Chemistry Superintendent

ntergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

Table 1. Volume of Water Discharged to River  
November, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	01.93
2	01.93
3	01.93
4	06.25
5	01.93
6	01.93
7	07.24
8	69.89
9	174.60
10	174.61
11	301.83
12	264.69
13	322.93
14	319.09
15	322.91
16	322.94
17	322.91
18	322.89
19	322.88
20	322.90
21	321.72
22	331.69
23	322.87
24	322.87
25	322.87
26	322.86
27	322.90
28	321.88
29	317.82
30	322.97

(a) Estimated value based on gate position

Energy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water/Service Water

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
 November, 2005**

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16	55				0.05	0.11	7.4
17							
18							
19							
20							
21							
22	65				0.05	0.11	7.3
23							
24							
25							
26							
27							
28							
29							
30							

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge

(b) Sample taken from discharge structure

ntergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water/ Service Water

**Table 3. Daily Condenser Water pH Measurement  
 November, 2005**

Day	(a) pH	(b) pH	(c) pH
1			7.20
2			7.10
3			7.10
4			7.20
5			7.30
6			7.20
7			7.20
8			7.20
9		7.10	7.30
10		7.30	7.40
11		7.20	7.30
12		7.30	7.40
13		7.30	7.50
14		7.30	7.20
15		7.30	7.40
16		7.30	7.40
17		7.50	7.50
18		7.40	7.50
19		7.30	7.40
20		7.30	7.40
21		7.40	7.40
22		7.20	7.30
23		7.34	7.46
24		7.30	7.40
25		7.30	7.30
26		7.40	7.30
27		7.30	7.50
28		7.30	7.40
29		7.30	7.30
30		7.30	7.40

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
November, 2005**

There were no radioactive liquid discharges  
in November, 2005

Energy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 003, Plant Heating Boiler Blowdown

Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
 November, 2005

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1	18.0	1.550
2	18.0	1.250
3	18.0	1.150
4	0.0	1.250
5	18.0	1.100
6	18.0	1.300
7	18.0	1.100
8	18.0	1.125
9	18.0	1.600
10	18.0	1.875
11	18.0	1.625
12	18.0	1.575
13	18.0	1.650
14	No boiler blowdown	
15	18.0	1.125
16	18.0	1.000
17	18.0	1.000
18	18.0	0.825
19	18.0	1.300
20	18.0	1.200
21	18.0	1.075
22	18.0	1.975
23	18.0	2.000
24	18.0	1.225
25	18.0	1.125
26	18.0	0.975
27	18.0	1.375
28	18.0	1.525
29	18.0	1.400
30	18.0	1.325

Energy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 009, Strainer and Traveling Screen Backwash

Table 6. Strainer and Traveling Screen Backwash  
November, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	0.035
2	0.035
3	0.035
4	0.035
5	0.026
6	0.026
7	0.026
8	0.026
9	0.026
10	0.035
11	0.035
12	0.035
13	0.035
14	0.026
15	0.026
16	0.035
17	0.044
18	0.044
19	0.044
20	0.035
21	0.035
22	0.035
23	0.035
24	0.035
25	0.035
26	0.026
27	0.026
28	0.026
29	0.026
30	0.044

(a) Estimated value based on average river flow rate (cfs)

Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: November 2005

<b>Date</b>	<b>Backwash Pump Start Time</b>	<b>Backwash Pump Secured Time</b>	<b>Backwash flow rate (gpm)</b>	<b>Total gallons discharged (MGD)</b>
11/08/2005	739	745	135	0.001

Figure1. River Water Temperature Change (Delta T) due to Plant Discharge for November 2005

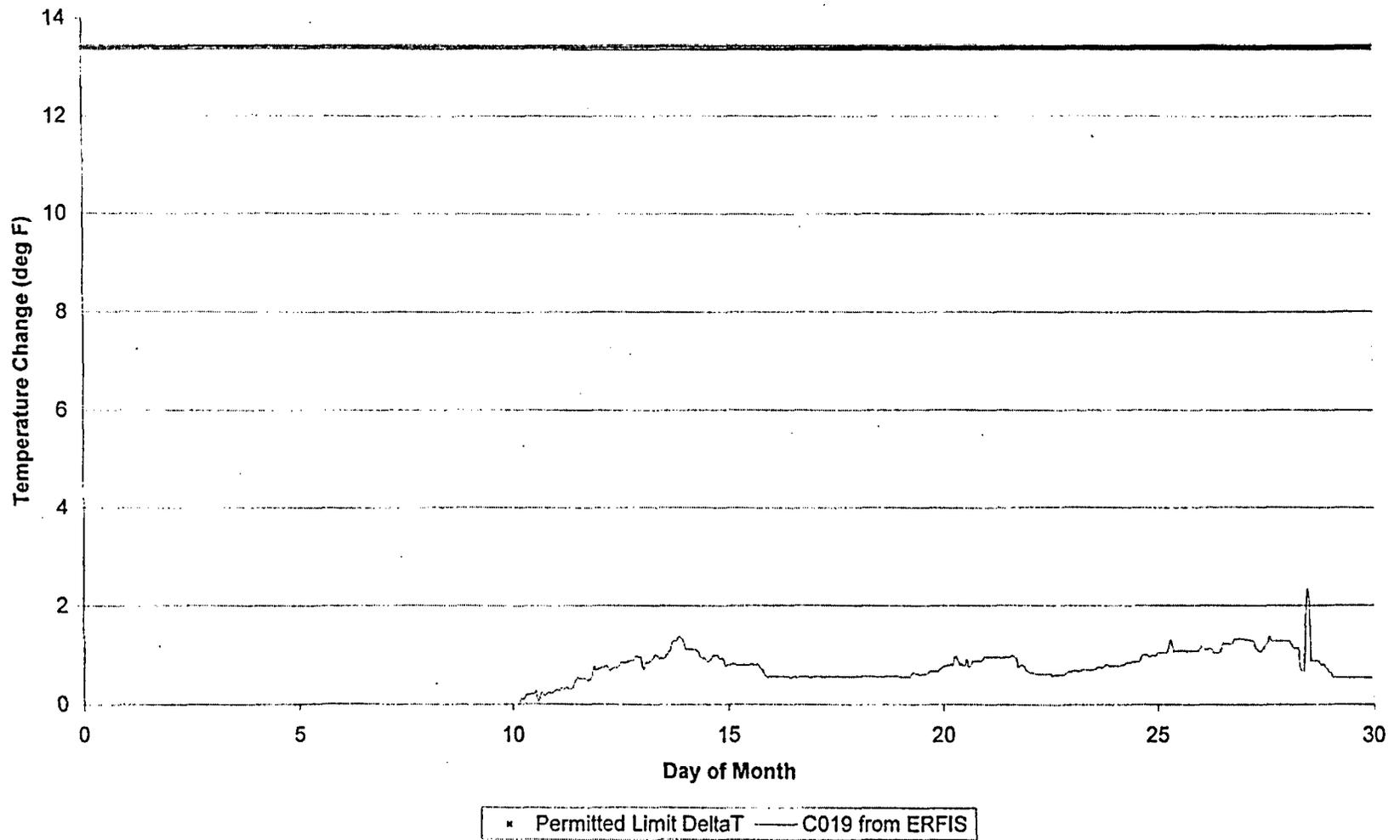
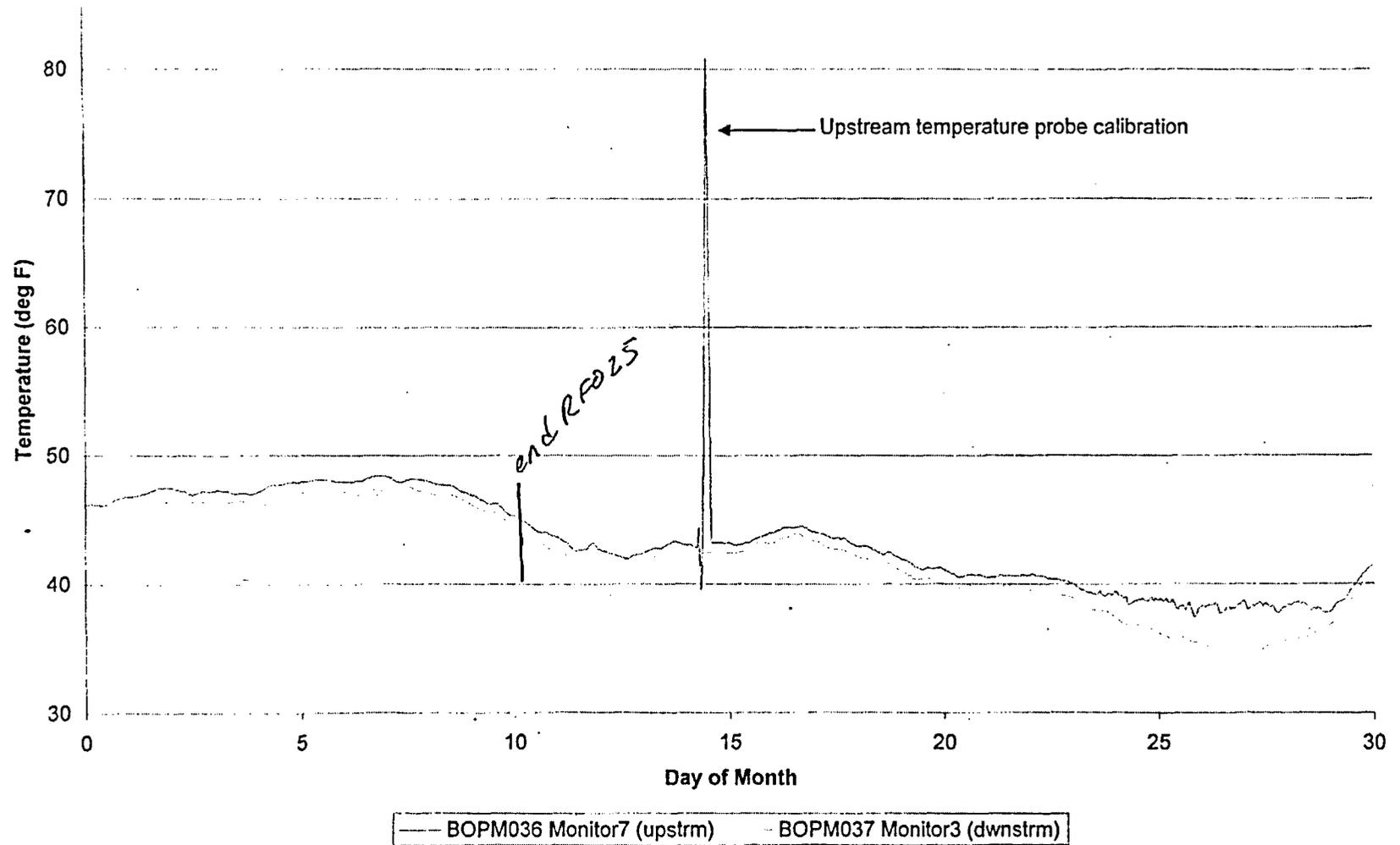


Figure 2. River Water Temperature at Monitor Sites for November 2005





Entergy Nuclear Northeast  
Entergy Nuclear Operations, Inc.  
Vermont Yankee  
322 Governor Hunt Rd.  
P.O. Box 157  
Vernon, VT 05354  
Tel 802-257-7711

12 January 2006

Carol Carpenter  
Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Wastewater Management Division, Permits and Compliance Section  
103 South Main Street – Sewing Building  
Waterbury, VT 05671-0405

**Reference:** NPDES Permit No. VT 0000264, VT DEC Permit No. 3-1199

**Subject:** Monthly NPDES Discharge Monitoring Report for December 2005

Dear Carol,

As required in Section D.2. in the National Pollutant Discharge Elimination System (NPDES) Permit issued to Entergy Nuclear Vermont Yankee, LLC (VY), enclosed is the discharge and thermal compliance monitoring report for December 2005.

The simulated temperature increase to the Connecticut River for December 2005 is shown in Figure 1. The simulation is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. The NPDES permit limits are based on the ambient five-minute temperature observed from the upstream river monitoring Station 7 and Vermont Yankee's operations temperature limits per the NPDES Permit. These are shown on the attached Figure 1 as the red line. The plant thermal discharge remained below the NPDES permit limits throughout the month.

The highest simulated (calculated) hourly average temperature increase for the month was 4.46° F on 16 December 2005 when the permitted limit was 13.4 °F. This occurred at a river flow of 3,984 cubic feet per second (cfs). The hourly average Connecticut River flows as recorded at Vernon Dam for the month of December ranged from 3,984 cfs to 31,972 cfs.

The hourly average temperature observed in the Connecticut River at the downstream monitoring Station 3 (red line) and the upstream monitoring Station 7 (black line) for November 2005 is shown in Figure 2.

The upstream measured River Station 7 temperatures ranged from 34.75 °F to 42.34 °F during December 2005. The downstream measured River Station 3 temperatures ranged from 32.52 °F to 42.39 °F during December 2005.

As you know, beginning on December 19<sup>th</sup>, with assistance from Normandeau Associates, we attempted to retrieve the downstream temperature probe for calibration based on an observation by our control room personnel that the downstream temperature probe was reading cooler than the upstream temperature probe. Normandeau personnel experienced difficulty in extracting the probe due to significant ice and frozen silt accumulation above the water line within the 8 inch pipe that protrudes out into the river at Station 3, and into which the temperature probe is pushed approximately 25-30 ft out into the river. Our experience has repeatedly demonstrated that when high river flows over run the access point to the pipe into which the probe is fed into the river, that once flows subside, silt accumulates within the pipe above the water line. During warmer months, water can be pumped into the pipe to flush the silt out into the river thus allowing

the sled upon which the probe is secured to be retrieved. However, because the high river flows continued into mid-December, the silt became frozen within the pipe after the water receded. Efforts to remove the probe continued from December 19<sup>th</sup> through the 22<sup>nd</sup>, and included nearly 36 hours of pumping water down the pipe before the frozen silt finally loosened enough that Normandeau could pull the sled and probe out. Also on the 19<sup>th</sup>, given the difficulties we were experiencing in retrieving the probe, an Onset™ StowAway Tidbit temperature logger was thrown out into the river from shore. The StowAway logger is capable of measuring temperatures between 24 and 99 degrees F and with an accuracy of 0.4 degrees F. The logger was set up to record water temperature at 15 minute intervals and was placed in the river simply in the event that the primary probe and back up WaDaR™ temperature logger could not be retrieved because of the ice.

The primary probe was finally retrieved during late afternoon on the 22<sup>nd</sup> and was calibrated after the Christmas holiday on December 27<sup>th</sup>; however upon returning this probe to service, temperature readings transmitted to the VY control room were occasionally erratic. A new probe and cable were calibrated on January 5<sup>th</sup> and installed on January 6<sup>th</sup>. No further problems have been encountered with the new probe. Upon inspection of the old probe and cable, it appears that we inflicted damage to it during the process of reinstalling the equipment back into the river, after the calibration on the 27<sup>th</sup>, as the cable shielding was clearly damaged.

Upon downloading the primary backup WaDaR temperature logger on January 3, 2006, the data was found to be corrupt and unusable. Therefore, the data from the Onset temperature logger is being reported for the downstream Station 3 for the period December 19, through December 31, 2005. A new backup WaDaR logger was installed at the time of the new probe installation at Station 3 on January 6<sup>th</sup>.

Vermont Yankee's Instrumentation personnel have been able to demonstrate that the original downstream probe performance prior to December 19<sup>th</sup> was within calibration and was measuring water temperature accurately. That demonstration was in the form of calibration records for the downstream probe from the spring of 2005 and the subsequent December 27, 2005 calibration of the same thermistor probe. Inquiries from VY's control room staff regarding temperature readings that were cooler downstream than upstream show a great questioning attitude and warranted a check by our instrumentation specialists. That check has been completed and while the results clearly show the probe has remained within calibration, we unfortunately caused significant damage to the original probe during the process of reinstalling it on December 28<sup>th</sup>. As such, a new probe and cable were subsequently calibrated and installed. With the Station 3 probe operable again, we continued to observe that Station 7 temperatures are warmer than Station 3. Since this trend was still being observed, our instrumentation specialists then recalibrated the upstream Station 7 temperature probe on January 10<sup>th</sup>. This probe was also found to be measuring accurately based on the calibration results. Therefore, based on VY's calibrated primary temperature probes at Stations 3 and 7 and confirmed by the backup loggers at both Stations, we know with certainty that we are accurately measuring temperatures that are warmer upstream than downstream.

This temperature trend has been occurring since shortly after the very high river flow event associated with the flooding rains the area received beginning on October 8, 2005. My thought between October and mid-December was that the extremely high river flows throughout this time and the constant spilling over Vernon Dam affected the results we were observing. It was not until river discharge began to subside to more seasonally normal flows that I questioned the temperature data. As of today, this trend is still occurring. We are exploring all possibilities that could help explain this trend and will keep you apprised of our findings. It is important to note, in conclusion, that while Entergy believed (because of unusual

readings) that the downstream monitor was not delivering accurate data, that the unusual readings were correct, the monitor was operating properly, and the station's monitoring process was in compliance with its NPDES permit. The urgency that both the State and Entergy felt in replacing the probe, as demonstrated in the January 4, 2006 letter from the agency, was understandable but, in the final analysis, unwarranted.

It is important to note that simulated temperature increase to the Connecticut River is based on electronically acquired five-minute river discharge data from the Vernon Dam, VY's five-minute observations of river temperatures at river monitoring Station 7 and thermal heat discharged to the Connecticut River. Compliance with this permit limit can and has been double-checked for the month of December by a calculation that VY's control room operators would use if they lost either upstream or downstream temperature indication in the control room. The formula is:

$$\frac{MWT - MWE (\text{gross}) * 15.193}{\text{River Flow (CFS)}}$$

Where,

MWT = Megawatts Thermal

MWE = Megawatts Electric

15.193 = Constant that takes into account the specific heat and density of water and permits a conversion from Megawatts to heat load to the river in CFS°F

River Flow = River flow in cubic feet per second as measured at Vernon Dam.

Plots for both methods of demonstrating compliance with the NPDES Permitted limit for the rise in river water temperature are included within this report.

The permitted daily discharge volume from the Station ranged from 316 million gallons per day (MGD) on December 31<sup>st</sup>, to 324 MGD on December 21, 2005 (Table 1). The permitted daily discharge of 543 MGD was never exceeded.

There were no service water or circulating water chlorination treatments during December 2005 (Table 2). The required daily circulating water and service water pH values were obtained from water taken as grab samples from a tap off of each system. (Permit requirement Part I, A. 1) and are reported in Table 3.

There were no discharges of radioactive liquids during December 2005 (Table 4).

The Station's heating boilers were blown daily during December 2005. In all instances the discharge flow was 18.0 gallons and the hydroquinone concentration was well below the permitted limit 15.0 ppm (Table 5).

The traveling screens and strainers were backwashed daily during December 2005, the backwash volume ranged from approximately 0.017 to 0.044 million gallons per day, the permitted limit of 0.050 million gallons per day was not exceeded (Table 6).

● Page 4

The water treatment carbon filters were backwashed twice during December 2005 (Table 7). Each discharge volume was approximately 0.001 million gallons, well below the permitted limit of 0.010 million gallons per day.

The monthly inspection of the chemical containment berm was conducted on December, 2005, there were no deficiencies identified.

Please do not hesitate to call if you have any questions or concerns with this information (802-258-5526).

Sincerely,  
*Entergy Nuclear Vermont Yankee, LLC*



Lynn DeWald  
Environmental Specialist



Samuel A. Wender IV  
Chemistry Superintendent

cc: Jay Thayer – Entergy Vermont Yankee Site VP  
William Maguire – Entergy Vermont Yankee General Manager of Plant Operations

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water/Service Water

Table 1. Volume of Water Discharged to River  
December, 2005

Day	Discharge Flow Rate (a) (millions of gal/day)
1	321.08
2	322.91
3	322.90
4	322.90
5	322.91
6	322.91
7	322.88
8	322.87
9	322.88
10	322.91
11	319.23
12	317.68
13	317.04
14	316.65
15	316.69
16	316.71
17	316.69
18	316.41
19	316.34
20	316.31
21	324.88
22	316.30
23	316.32
24	316.31
25	315.84
26	315.84
27	315.82
28	315.82
29	315.84
30	315.81
31	315.53

(a) Estimated value based on gate position

Entergy Nuclear Northeast, Vermont Yankee  
 Permit 3-1199, NPDES No. VT0000264  
 Discharge No. 001, Condenser Cooling Water/Service Water

**Table 2. pH and Oxidant Levels During Treatment of Circulating and Service Water Systems  
 December, 2005**

Day	(a) Treatment Duration (min)	(b) Circulating Water			(b) Service Water		
		Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment	Free Oxidant (mg/l)	Total Oxidant (mg/l)	pH Measured During Treatment
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

(a) Time from the introduction of oxidant into circulating or service water system until oxidant is no longer detected in the discharge

(b) Sample taken from discharge structure

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 001, Condenser Cooling Water

Table 3. Daily Condenser Water pH Measurement  
December, 2005

Day	(a) pH	(b) pH	(c) pH
1		7.30	7.40
2		7.30	7.40
3		7.20	7.30
4		7.30	7.30
5		7.30	7.30
6		7.30	7.00
7		7.20	7.40
8		7.30	7.30
9		7.30	7.40
10		7.34	7.39
11		7.29	7.33
12		7.40	7.30
13		7.35	7.36
14		7.50	7.40
15		7.40	7.30
16		7.40	7.40
17		7.30	7.40
18		7.40	7.40
19		7.30	7.30
20		7.20	7.30
21		7.30	7.30
22		7.40	7.40
23		7.30	
24		7.30	7.30
25		7.30	7.30
26		7.30	7.30
27		7.30	7.40
28		7.30	7.30
29		7.30	7.30
30		7.31	7.31
31		7.30	7.30

(a) Sample taken from discharge structure after bay

(b) Sample taken from TBCCW sample sink - circ water stream

(c) Sample taken from TBCCW sample sink - service water stream

**Table 4. Volume of Radioactive Liquid Discharged  
December, 2005**

There were no radioactive liquid discharges  
in December, 2005

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 003, Plant Heating Boiler Blowdown

Table 5. Boiler Blowdown Discharge Flow Rate and Hydroquinone Concentration  
December, 2005

Day	Discharge Flow Rate (gal/day)	Hydroquinone (ppm)
1	18.0	1.500
2	18.0	1.500
3	18.0	1.500
4	18.0	1.100
5	18.0	1.000
6	18.0	1.100
7	18.0	1.525
8	18.0	1.825
9	18.0	1.375
10	18.0	1.650
11	18.0	1.000
12	18.0	1.325
13	18.0	1.650
14	18.0	1.500
15	18.0	1.430
16	18.0	1.475
17	18.0	1.475
18	18.0	1.450
19	18.0	1.650
20	18.0	1.625
21	18.0	1.300
22	18.0	1.500
23	18.0	1.225
24	18.0	1.100
25	18.0	1.525
26	18.0	1.025
27	18.0	1.775
28	18.0	1.225
29	18.0	1.475
30	18.0	1.175
31	18.0	1.200

Entergy Nuclear Northeast, Vermont Yankee  
Permit 3-1199, NPDES No. VT0000264  
Discharge No. 009, Strainer and Traveling Screen Backwash

Table 6. Strainer and Traveling Screen Backwash  
December, 2005

Day	Discharge Flow Rate <sup>(a)</sup> (millions of gal/day)
1	0.044
2	0.044
3	0.044
4	0.035
5	0.026
6	0.026
7	0.026
8	0.026
9	0.026
10	0.026
11	0.026
12	0.026
13	0.026
14	0.017
15	0.017
16	0.017
17	0.017
18	0.017
19	0.017
20	0.017
21	0.017
22	0.017
23	0.017
24	0.017
25	0.017
26	0.026
27	0.035
28	0.035
29	0.035
30	0.035
31	0.035

(a) Estimated value based on average river flow rate (cfs)

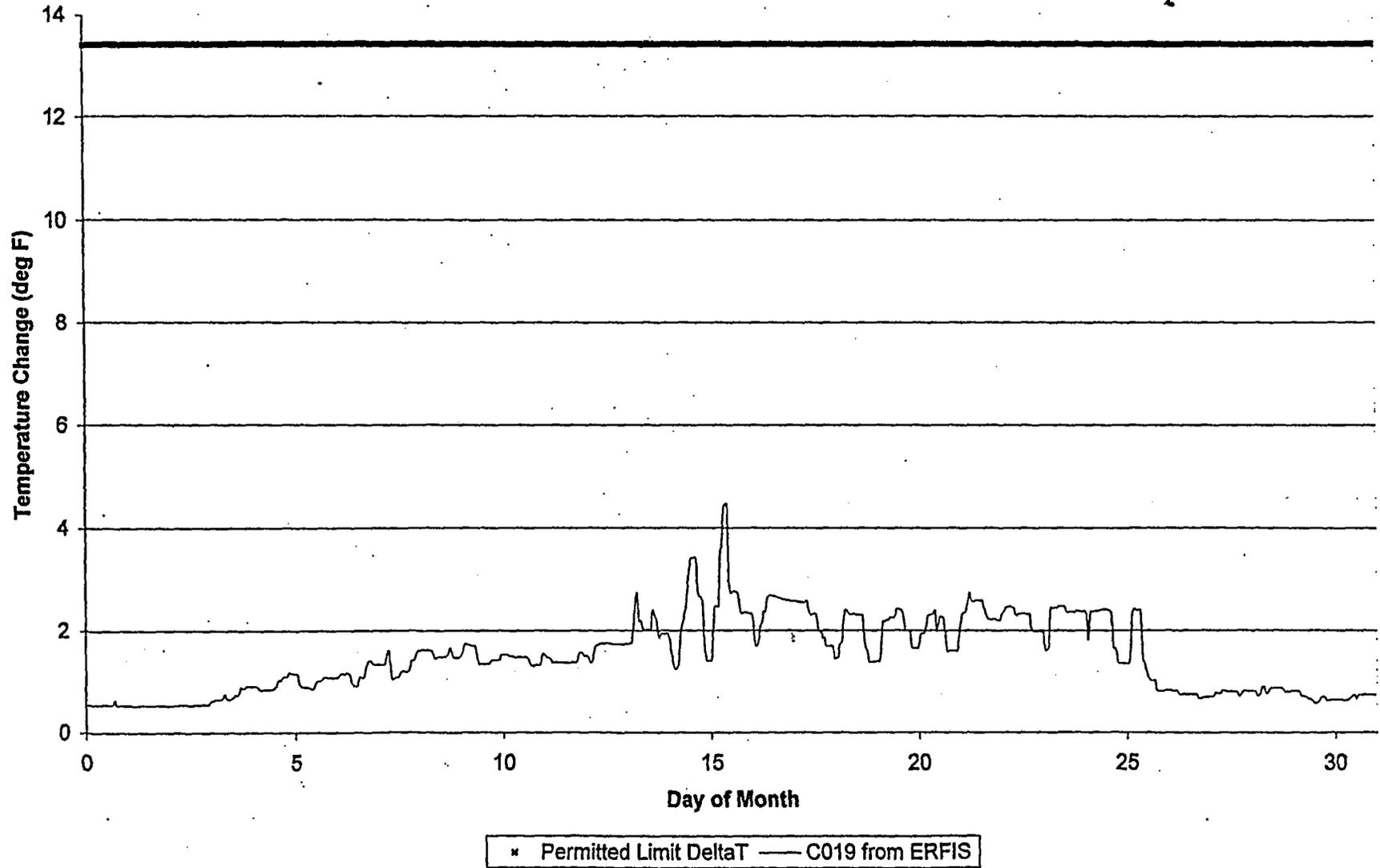
Entergy Nuclear Vermont Yankee, LLC  
Permit No. 3-1199, NPDES No. VT0000264

**Table 7. Discharge No. 004, Water Treatment Carbon Filter Backwash.**

Reporting Period: December 2005

<b>Date</b>	<b>Backwash Pump Start Time</b>	<b>Backwash Pump Secured Time</b>	<b>Backwash flow rate (gpm)</b>	<b>Total gallons discharged (MGD)</b>
12/07/2005	2015	2025	110	0.001
12/23/2005	1112	1120	130	0.001

Figure 1. River Water Temperature Change (Delta T) due to Plant Discharge for Dec 2005



**Figure 2. Plot of River Water Temperature at Monitor Sites for Dec 2005, beginning on  
12/19/05  
at 1600 the plot uses backup temperature logger data for downstream Station 3.**

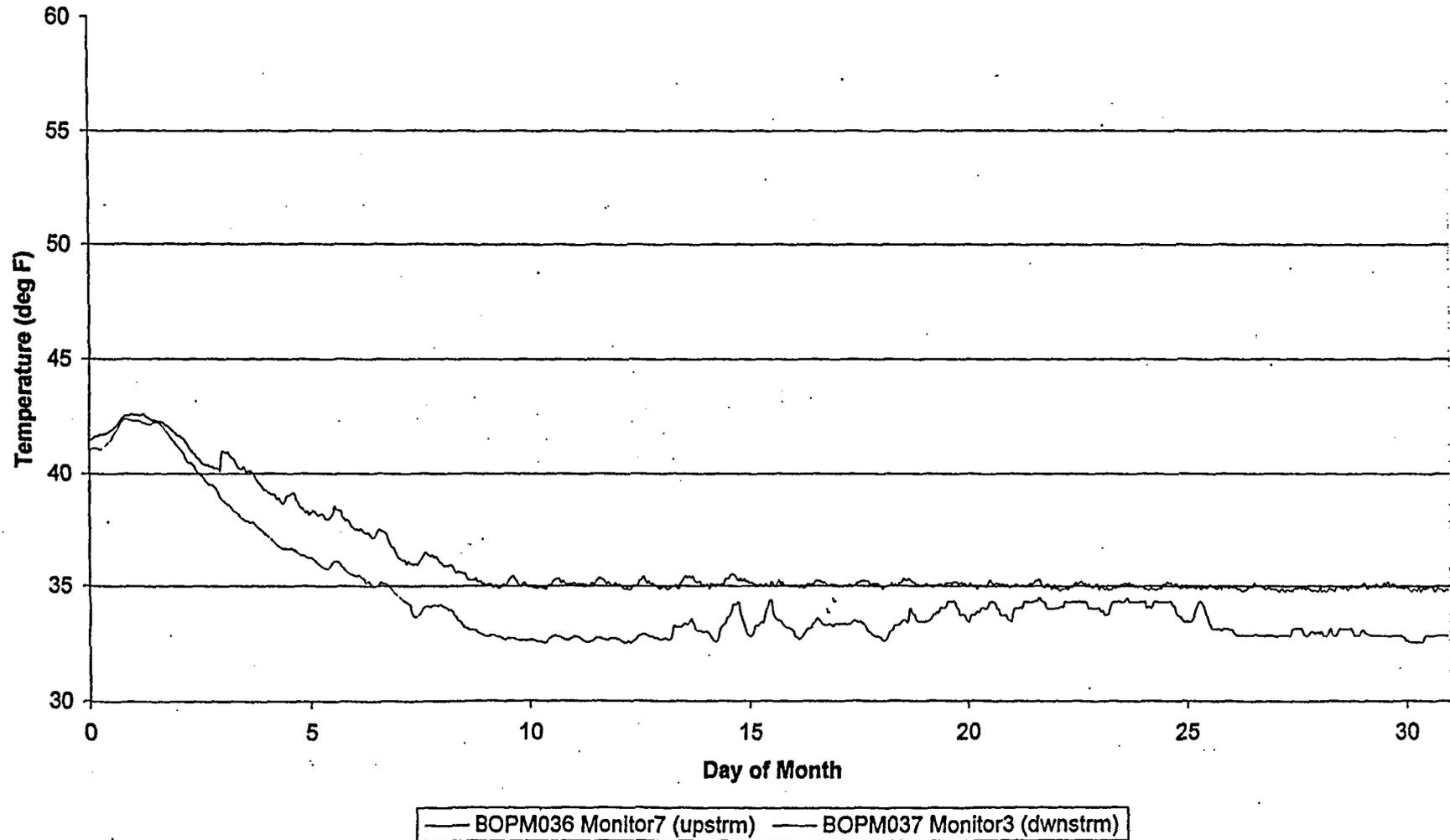


Figure 3. Confirmatory River Water Temperature Change (Delta T) due to Station Discharge for December 2005, based on  $(MWT-MWE(\text{gross}) \cdot 15.193) / \text{CT River Flow}$ .

