

Assumptions Regarding Demand Resource Availability

For use in the 2016 ICR Calculations



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Objective of This Presentation

- Provide an historical record, all in one place, of Demand Resources (DR) performance values used to create a DR availability metric for the Installed Capacity Requirement (ICR) calculations
- Shows summer and winter performance for Active DR for 2011-2015 (past five years of the Forward Capacity Market (FCM)) for
 - Real-Time Demand Response (RTDR)
 - Real-Time Emergency Generators (RTEG)
- Show the 5-year average of DR availability proposed for use in the 2016 ICR calculations
- Passive Demand Resources are modeled as 100% available in ICR
 - On-Peak
 - Seasonal Peak



Review of How DR is Modeled in ICR

- A 5-year rolling average of DR performance in each Load Zone is used to calculate a forced outage rate ($1 - \text{performance}$) used for Active DR in the ICR model
- The 5-year average is the summer and winter performance of DR during the years 2011-2014, weighted by MW achieved
 - Larger amounts of Active DR in some years count more than years with lesser amounts
- Any over-performance (performance greater than 100%) of Active DR at the Load Zone level is not modeled in ICR
 - Over-performance of DR at the asset level is not restricted
 - DR are modeled in ICR in blocks by type of resource and Load Zone
 - Performance greater than 100% at the Load Zone level cannot be modeled, therefore the value for a Load Zone is simply reduced to 100%



SUMMER 2011 - 2015 DEMAND RESOURCE PERFORMANCE HIGHLIGHTS

Demand Resource Availability Recap – Summer 2015

- For Summer 2015 DR Performance details see May 26, 2016 PSPC discussion from Agenda Item 4.0
 - Based on audit data; No activations of RTDR or RTEG
 - RTDR performance = 103% (92% when capped at the Load Zone CSO value)
 - RTEG performance = 92% (88% when capped at the Load Zone CSO value)



Demand Resource Availability Recap – Summer 2014

- For Summer 2014 DR Performance details see Mar 26, 2015 PSPC discussion at:
 - [http://www.iso-ne.com/static-assets/documents/2015/03/Final Summer 2014 and initial winter 2014-15 DR audit results for 3-26-15 PSPC meeting.pdf](http://www.iso-ne.com/static-assets/documents/2015/03/Final_Summer_2014_and_initial_winter_2014-15_DR_audit_results_for_3-26-15_PSPC_meeting.pdf)
 - Based on audit data; No activations of RTDR or RTEG
 - RTDR performance = 104% (93% when capped at the Load Zone CSO value)
 - RTEG performance = 104% (96% when capped at the Load Zone CSO value)

Demand Resource Availability Recap – Summer 2013

- For Summer 2013 DR Performance details see May 22, 2014 PSPC discussion at:
 - http://www.iso-ne.com/committees/comm_wkgrps/reblty_comm/pwrsuppln_comm/mtrls/2014/may222014/pspc_52214_dr_performance_revised.pdf
 - RTDR performance = 124% (97% when capped at the Load Zone CSO value) based on audit results
 - July 19, 2013 OP4 event where all RTDR outside of Maine were called. Performance of 193 CSO MW = 95% (90% when capped at the Load Zone CSO)
 - Using OP4 event data for all zones outside of ME and audit data for ME = 94%
 - RTEG performance = 110% (100% when capped at the Load Zone CSO value) based on audit results

** Presentation does not show performance capped at Load Zone values. Those were determined by capping any Load Zone with performance > 100% at 100%*

Demand Resource Availability Recap – Summer 2012

- For Summer 2012 DR Performance details see March 14, 2013 PSPC discussion at:
 - http://www.iso-ne.com/committees/comm_wkgrps/reliabty_comm/pwrsuppln_comm/mtrls/2013/mar142013/pspc_march142013_dr_performance_summer_2012.pdf
 - RTDR performance = 93% (91% when capped at the Load Zone CSO value) based on audit results (no events in summer 2012)
 - RTEG performance = 99% (95% when capped at the Load Zone CSO value) based on audit results

Demand Resource Availability Recap – Summer 2011

- For Summer 2011 DR Performance details see April 26, 2012 PSPC discussion at:
- http://www.iso-ne.com/committees/comm_wkgrps/relblty_comm/pwrsuppln_comm/mtrls/2012/apr262012/pspc_4_26_2012_dr_performance.pdf
 - RTDR performance = 96% (89% when capped at the Load Zone CSO value) from audit values. July 22, 2011 dispatch event performance = 100%
 - RTEG performance = 97% (95% when capped at the Load Zone CSO value) based on audit results

WINTER 2011/12 - 2015/16 DEMAND RESOURCE PERFORMANCE HIGHLIGHTS

Demand Resource Availability Recap – Winter 2015/16

- For Winter 2015/16 DR Performance details see May 26, 2016 PSPC discussion of Agenda Item 4.0
 - Based on audit data; No activations of RTDR or RTEG
 - RTDR performance = 106% (94% when capped at the Load Zone CSO value)
 - RTEG performance = 119% (98% when capped at the Load Zone CSO value)



Demand Resource Availability Recap – Winter 2014/15

- For Winter 2014/15 DR Performance details see May 28, 2015 PSPC discussion at:
 - http://www.iso-ne.com/static-assets/documents/2015/05/winter_2014-2015_dr_final_performance.pdf
 - Based on audit data; No activations of RTDR or RTEG
 - RTDR performance = 112% (94% when capped at the Load Zone CSO value)
 - RTEG performance = 93% (88% when capped at the Load Zone CSO value)

Demand Resource Availability Recap – Winter 2013/14

- For Winter 2013/14 DR Performance details see May 22, 2014 PSPC discussion at:
 - http://www.iso-ne.com/committees/comm_wkgrps/relbly_comm/pwrsuppln_comm/mtrls/2014/may222014/pspc_52214_dr_performance_revised.pdf
 - RTDR performance = 89% (89% when capped at the Load Zone CSO value) based on Audits
 - RTDR event on Dec 14, 2013 = 80% (76% when capped at Load Zone CSO Values) – Saturday evening, results may not be indicative of actual asset performance during weekday peak conditions
 - RTEG performance = 122% (95% when capped at the Load Zone CSO value) based on audits

** Presentation does not show performance capped at Load Zone values. Those were determined by capping any Load Zone with performance > 100% at 100%*

Demand Resource Availability Recap – Winter 2012/13

- For Winter 2012/13 DR Performance details see June 3, 2013 PSPC discussion at:
- http://www.iso-ne.com/committees/comm_wkgrps/relblty_comm/pwrsuppln_comm/mtrls/2013/jun32013/dr_winter_performance_update.pdf
 - RTDR performance = 100% (84% when capped at the Load Zone CSO value) based on January 28, 2013 event
 - RTEG performance = 99% (97% when capped at the Load Zone CSO value) based on audits

Demand Resource Availability Recap – Winter 2011/12

- For Winter 2011/12 DR Performance details see April 26, 2012 PSPC discussion at:
- http://www.iso-ne.com/committees/comm_wkgrps/relblty_comm/pwrsuppln_comm/mtrls/2012/apr262012/pspc_4_26_2012_dr_performance.pdf
 - RTDR performance from audits = 92% (90% when capped at the Load Zone CSO value)
 - RTEG performance from audits = 76% (75% when capped at the Load Zone CSO value)

Demand Resource Availability Recap – Winter 2010/11

- For Winter 2010/11 DR Performance details see May 19, 2011 PSPC discussion at:
- http://www.iso-ne.com/committees/comm_wkgrps/relblty_comm/pwrsuppln_comm/mtrls/2011/may192011/pspc_dr_performance_update.pdf
 - RTDR performance from audits = 97% (85% when capped at the Load Zone CSO value)
 - RTEG performance from audits = 84% (82% when capped at the Load Zone CSO value)

DEMAND RESOURCE AVAILABILITY ASSUMPTION FOR ICR CALCULATIONS

Passive Demand Resource (DR) Availability

- We will continue to model On-Peak and Seasonal Peak DR, which are the passive resources, as 100% available in the ICR calculations



Proposed Active DR Availability Metrics

- Last year's ICR calculations used a DR availability metric based on summer & winter 2010 - 2014 DR performance
 - Weighted by the value of the MW achieved (capped at the Net CSO) if performance over 100% occurred
- ISO-NE proposes to calculate a DR availability metric for use in this year's ICR calculations based on summer & winter 2011 - 2015 DR performance
 - Same methodology as used for last year's ICR calculations
 - Drops the first year of the FCM, Capacity Commitment Period (CCP) 2010

RTDR Summer Historical Performance (MW and %)

Load Zone	Real-Time Demand Response											
	Summer 2011		Summer 2012		Summer 2013		Summer 2014		Summer 2015		Average Summer (Weighted by MW Achieved)	
	MW	%	MW	%	MW	%	MW	%	MW	%	MW	%
Connecticut	99	79	115	100	86	99	80	87	75	100	455	93
Maine	182	100	206	100	124	100	130	100	110	100	751	100
Northeast Massachusetts	41	90	39	76	21	84	17	81	28	71	144	81
New Hampshire	29	86	22	100	4	100	7	100	7	90	70	93
Rhode Island	35	82	30	77	9	47	13	80	9	89	96	77
Southeast Massachusetts	28	68	21	64	9	90	9	100	10	94	77	77
Vermont	31	100	37	100	23	100	27	100	26	93	143	99
West Central Massachusetts	77	93	66	76	21	84	24	86	27	71	214	83
New England	522	89	536	91	297	94	307	93	291	92	1,952	91

Average summer performance is determined by weighting performance for each year by the MW of CSO achieved in each Load Zone. Performance in a zone limited to 100% if over-performance occurred.

RTDR Winter Historical Performance (MW and %)

Load Zone	Real-Time Demand Response										Average Winter (Weighted by MW Achieved)	
	Winter 2011 MW	2011 %	Winter 2012 MW	2012 %	Winter 2013 MW	2013 %	Winter 2014 MW	2014 %	Winter 2015 MW	2015 %	MW	%
Connecticut	53	100	52	69	40	79	66	91	62	100	273	89
Maine	161	93	142	100	124	98	96	100	106	100	628	98
Northeast Massachusetts	19	80	18	100	4	100	25	100	23	89	89	93
New Hampshire	26	62	14	65	3	91	4	64	5	100	51	68
Rhode Island	28	100	14	76	5	49	10	65	6	59	63	82
Southeast Massachusetts	15	81	10	74	23	88	6	82	5	100	59	84
Vermont	34	94	33	92	5	65	25	100	27	96	124	94
West Central Massachusetts	27	100	32	65	16	83	25	97	17	66	117	83
New England	363	90	314	84	219	89	257	94	251	94	1,404	90

Average winter performance is determined by weighting the performance for each year by the MW value of the CSO achieved in each Load Zone. Performance in a zone limited to 100% if over-performance occurred.

RTEG Summer Historical Performance (MW and %)

Real-Time Emergency Generation												
Load Zone	Summer 2011		Summer 2012		Summer 2013		Summer 2014		Summer 2015		Average Summer (Weighted by MW Achieved)	
	MW	%	MW	%	MW	%	MW	%	MW	%	MW	%
Connecticut	175	92	166	100	74	100	74	100	90	89	579	96
Maine	14	100	16	92	7	100	3	100	4	75	44	95
Northeast Massachusetts	53	100	43	84	20	100	19	100	2	30	137	94
New Hampshire	26	100	27	100	11	100	13	96	11	78	87	97
Rhode Island	22	95	25	100	9	100	12	87	13	100	81	97
Southeast Massachusetts	24	100	20	75	10	100	8	100	9	88	71	91
Vermont	8	83	7	72	2	100	3	75	3	100	23	82
West Central Massachusetts	44	95	42	100	20	100	18	88	19	100	143	97
New England	366	95	346	95	153	100	150	96	150	88	1,165	95

Average summer performance is determined by weighting performance for each year by the MW of CSO achieved in each Load Zone. Performance in a zone limited to 100% if over-performance occurred.

RTEG Winter Historical Performance (MW and %)

Real-Time Emergency Generation												
Load Zone	Winter 2011		Winter 2012		Winter 2013		Winter 2014		Winter 2015		Average Winter (Weighted by MW Achieved)	
	MW	%	MW	%	MW	%	MW	%	MW	%	MW	%
Connecticut	112	63	115	100	56	100	74	100	72	100	430	90
Maine	10	82	11	100	3	50	4	64	3	100	31	85
Northeast Massachusetts	39	100	33	96	19	100	2	52	3	67	96	96
New Hampshire	22	92	22	98	11	100	9	67	9	100	72	93
Rhode Island	15	100	18	90	6	100	11	100	11	100	60	97
Southeast Massachusetts	4	37	18	93	2	100	8	55	7	89	39	80
Vermont	9	95	6	100	6	61	3	91	3	100	28	89
West Central Massachusetts	21	96	30	88	18	100	18	91	18	100	105	94
New England	232	75	252	97	120	95	129	88	127	98	860	90

Average winter performance is determined by weighting the performance for each year by the MW value of the CSO achieved in each Load Zone. Performance in a zone limited to 100% if over-performance occurred.

RTDR Historical Performance (%)

Real-Time Demand Response													
Load Zone	Summer 2011	Summer 2012	Summer 2013	Summer 2014	Summer 2015	Average Summer (Weighted by MW Achieved)	Winter 2011	Winter 2012	Winter 2013	Winter 2014	Winter 2015	Average Winter (Weighted by MW Achieved)	Total Average Performance (Weighted by MW Achieved)
Connecticut	79	100	99	87	100	93	100	69	79	91	100	89	91
Maine	100	100	100	100	100	100	93	100	98	100	100	98	99
Northeast Massachusetts	90	76	84	81	71	81	80	100	100	100	89	93	85
New Hampshire	86	100	100	100	90	93	62	65	91	64	100	68	83
Rhode Island	82	77	47	80	89	77	100	76	49	65	59	82	79
Southeast Massachusetts	68	64	90	100	94	77	81	74	88	82	100	84	80
Vermont	100	100	100	100	93	99	94	92	65	100	96	94	97
West Central Massachusetts	93	76	84	86	71	83	100	65	83	97	66	83	83
New England	89	91	94	93	92	91	90	84	89	94	94	90	91

The final column is the 5-year average summer and winter RTDR performance

RTEG Historical Performance (%)

Real-Time Emergency Generation													
Load Zone	Summer 2011	Summer 2012	Summer 2013	Summer 2014	Summer 2015	Average Summer (Weighted by MW Achieved)	Winter 2011	Winter 2012	Winter 2013	Winter 2014	Winter 2015	Average Winter (Weighted by MW Achieved)	Total Average Performance (Weighted by MW Achieved)
Connecticut	92	100	100	100	89	96	63	100	100	100	100	90	94
Maine	100	92	100	100	75	95	82	100	50	64	100	85	91
Northeast Massachusetts	100	84	100	100	31	94	100	96	100	52	67	96	95
New Hampshire	100	100	100	96	78	97	92	98	100	67	100	93	95
Rhode Island	95	100	100	87	100	97	100	90	100	100	100	97	97
Southeast Massachusetts	100	75	100	100	88	91	37	93	100	55	89	80	87
Vermont	83	72	100	75	100	82	95	100	61	91	100	89	86
West Central Massachusetts	95	100	100	88	100	97	96	88	100	91	100	94	96
New England	95	95	100	96	88	95	75	97	95	88	98	90	93

The final column is the 5-year average summer and winter RTEG performance



Proposed DR Availability Assumption for use in the FCA11 ICR Calculation

Load Zone	On-Peak		Seasonal Peak		RT Demand Response		RT Emergency Gen		Total	
	Summer (MW)	Performance (%)	Summer (MW)	Performance (%)	Summer (MW)	Performance (%)	Summer (MW)	Performance (%)	Summer	Performance (%)
MAINE	148.224	100	-	-	136.536	99	6.402	91	291.162	99
NEW HAMPSHIRE	106.299	100	-	-	10.067	83	13.914	95	130.280	98
VERMONT	93.335	100	-	-	31.900	97	5.458	86	130.693	99
CONNECTICUT	75.583	100	440.158	100	59.951	91	59.097	94	634.789	99
RHODE ISLAND	207.499	100	-	-	42.213	79	15.720	97	265.432	96
SOUTH EAST MASSACHUSETTS	311.925	100	-	-	46.340	80	12.722	87	370.987	97
WEST CENTRAL MASSACHUSETTS	343.751	100	45.251	100	49.596	83	25.530	96	464.128	98
NORTH EAST MASSACHUSETTS & BOSTON	590.347	100	-	-	62.097	85	9.430	95	661.874	99
Total New England	1,876.963	100	485.409	100	438.700	90	148.273	94	2,949.345	98

- DR average performance percentages are applied to FCA11 Existing Qualified DR
- Average of 2011 – 2015 historical summer & winter DR performance
- Modeled as a forced outage rate of 1-Performance in blocks by DR type and Load Zone
- Historical DR performance in ICR
 - FCA10 total New England DR modeled was 2,871 MW at 97%
 - FCA9 was 3,054 MW at 97%

Questions



APPENDIX

Demand Resource Performance - Historical Tables

Summer 2010 RTDR Capacity by Load Zone

Load Zone	Total Net CSO	June Verified Capacity	Percent Net CSO
Connecticut	226.825	152.509	67%
West Central Massachusetts	79.821	84.526	106%
Northeast Massachusetts	70.738	50.895	72%
Southeast Massachusetts	45.233	38.558	85%
Rhode Island	27.761	28.078	101%
Vermont	23.713	31.594	133%
New Hampshire	29.106	34.39	118%
Maine	166.217	251.877	152%
New England	669.414	672.427	100%

Summer 2010 RTDR Performance Capped at Load Zone Net CSO

Load Zone	Total Net CSO	June Capacity Capped at CSO	Percent Net CSO
Connecticut	226.825	152.509	67%
West Central Massachusetts	79.821	79.821	100%
Northeast Massachusetts	70.738	50.895	72%
Southeast Massachusetts	45.233	38.558	85%
Rhode Island	27.761	27.761	100%
Vermont	23.713	23.713	100%
New Hampshire	29.106	29.106	100%
Maine	166.217	166.217	100%
New England	669.414	568.58	85%



Summer 2010 Real-Time Emergency Generation Capacity by Load Zone

Load Zone	Total Net CSO	June Verified Capacity	Percent Net CSO
Connecticut	255.282	171.703	67%
West Central Massachusetts	58.335	28.575	49%
Northeast Massachusetts	77.773	46.843	60%
Southeast Massachusetts	39.005	22.924	59%
Rhode Island	41.836	23.423	56%
Vermont	11.269	8.621	77%
New Hampshire	21.57	22.423	104%
Maine	17.315	15.3	88%
New England	522.385	339.812	65%

Summer 2010 RTEG Performance Capped at Load Zone Net CSO

Load Zone	Total Net CSO	June Capacity Capped at CSO	Percent Net CSO
Connecticut	255.282	171.703	67%
West Central Massachusetts	58.335	28.575	49%
Northeast Massachusetts	77.773	46.843	60%
Southeast Massachusetts	39.005	22.924	59%
Rhode Island	41.836	23.423	56%
Vermont	11.269	8.621	77%
New Hampshire	21.57	21.57	100%
Maine	17.315	15.3	88%
New England	522.385	338.959	65%

December 2010 RTDR Capacity by Load Zone

Load Zone	Net CSO	December Verified Capacity	Percent Net CSO
Connecticut	125.528	82.830	66%
Maine	143.789	158.253	110%
Northeast Massachusetts	34.141	25.619	75%
New Hampshire	25.568	42.057	164%
Rhode Island	26.516	25.546	96%
Vermont	22.003	42.856	195%
Southeast Massachusetts	28.372	14.631	52%
West Central Massachusetts	62.272	60.228	97%
New England	468.189	452.020	97%

December 2010 RTDR Performance Capped at Load Zone Net CSO

Load Zone	Net CSO	December Verified Capacity	Percent Net CSO
Connecticut	125.528	82.83	66%
Maine	143.789	143.789	100%
Northeast Massachusetts	34.141	25.619	75%
New Hampshire	25.568	25.568	100%
Rhode Island	26.516	25.546	96%
Vermont	22.003	22.003	100%
Southeast Massachusetts	28.372	14.631	52%
West Central Massachusetts	62.272	60.228	97%
New England	468.189	400.214	85%

December 2010 RTEG Capacity by Load Zone

Load Zone	Net CSO	December Verified Capacity	Percent Net CSO
Connecticut	202.817	151.587	75%
Maine	12.607	13.715	109%
Northeast Massachusetts	45.223	39.919	88%
New Hampshire	19.581	25.292	129%
Rhode Island	23.235	23.015	99%
Vermont	8.795	9.602	109%
Southeast Massachusetts	18.631	15.038	81%
West Central Massachusetts	35.081	30.810	88%
New England	365.97	308.978	84%

December 2010 RTEG Performance Capped at Load Zone Net CSO

Load Zone	Net CSO	December Verified Capacity	Percent Net CSO
Connecticut	202.817	151.587	75%
Maine	12.607	12.607	100%
Northeast Massachusetts	45.223	39.919	88%
New Hampshire	19.581	19.581	100%
Rhode Island	23.235	23.015	99%
Vermont	8.795	8.795	100%
Southeast Massachusetts	18.631	15.038	81%
West Central Massachusetts	35.081	30.81	88%
New England	365.97	301.352	82%

June 2011 RTDR Audit Results

Load Zone	Dispatched MW	Performance (MW)	Percentage
ME	182.355	218.83	120%
NH	33.928	29.242	86%
VT	30.581	31.345	103%
CT	124.827	99.086	79%
RI	42.651	34.781	82%
SEMA	41.557	28.256	68%
WCMA	82.255	76.8	93%
NEMA	45.304	40.864	90%
TOTAL	583.458	559.204	96%

June 2011 RTDR Performance Capped at Load Zone Net CSO

Load Zone	Dispatched MW	Performance (MW)	Percentage
ME	182.355	182.355	100%
NH	33.928	29.242	86%
VT	30.581	30.581	100%
CT	124.827	99.086	79%
RI	42.651	34.781	82%
SEMA	41.557	28.256	68%
WCMA	82.255	76.8	93%
NEMA	45.304	40.864	90%
TOTAL	583.458	521.965	89%

June 2011 RTEG Audit Results

Load Zone	Dispatched MW	Performance (MW)	Percentage
ME	14.016	16.183	116%
NH	25.872	28.066	109%
VT	9.606	7.993	83%
CT	190.796	175.431	92%
RI	23.631	22.383	95%
SEMA	23.854	25.252	106%
WCMA	46.123	44.016	95%
NEMA	52.827	53.946	102%
TOTAL	386.725	373.27	97%

June 2011 RTEG Performance Capped at Load Zone Net CSO

Load Zone	Dispatched MW	Performance (MW)	Percentage
ME	14.016	14.016	100%
NH	25.872	25.872	100%
VT	9.606	7.993	83%
CT	190.796	175.431	92%
RI	23.631	22.383	95%
SEMA	23.854	23.854	100%
WCMA	46.123	44.016	95%
NEMA	52.827	52.827	100%
TOTAL	386.725	366.392	95%

December 2011 RTDR Audit Results

Load Zone	Dispatched MW	Performance (MW)	Percentage
ME	173.4	161.1	92.9%
NH	42.0	26.0	62.0%
VT	35.8	33.8	94.2%
CT	52.9	57.3	108.2%
RI	28.2	28.9	102.8%
SEMA	18.3	14.8	80.6%
WCMA	27.5	27.4	99.8%
NEMA	23.5	18.7	79.5%
TOTAL	401.7	368.0	91.6%

December 2011 RTDR Audit Results Capped at Load Zone Net CSO

Load Zone	Dispatched MW	Performance (MW)	Percentage
ME	173.4	161.1	92.9%
NH	42.0	26.0	62.0%
VT	35.8	33.8	94.2%
CT	52.9	52.9	100.0%
RI	28.2	28.2	100.0%
SEMA	18.3	14.8	80.6%
WCMA	27.5	27.4	99.8%
NEMA	23.5	18.7	79.5%
TOTAL	401.7	362.9	90.3%

December 2011 RTEG Audit Results

Load Zone	Dispatched MW	Performance (MW)	Percentage
ME	12.5	10.2	81.6%
NH	24.0	22.0	91.5%
VT	9.4	3.5	37.4%
CT	176.8	112.0	63.4%
RI	14.6	16.6	113.5%
SEMA	9.8	9.3	94.8%
WCMA	22.3	21.3	95.7%
NEMA	38.7	39.4	101.8%
TOTAL	308.1	234.4	76.1%

December 2011 RTEG Audit Results Capped at Load Zone Net CSO

Load Zone	Dispatched MW	Performance (MW)	Percentage
ME	12.5	10.2	81.6%
NH	24.0	22.0	91.5%
VT	9.4	3.5	37.4%
CT	176.8	112.0	63.4%
RI	14.6	14.6	100.0%
SEMA	9.8	9.3	94.8%
WCMA	22.3	21.3	95.7%
NEMA	38.7	38.7	100.0%
TOTAL	308.1	231.7	75.2%

RTDR Audit Results

Summer 2012

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent Net CSO
CT	115.3	117.6	102.0%
ME	205.7	214.7	104.4%
NEMA	50.6	38.5	76.2%
NH	22.3	23.2	104.2%
RI	39.4	30.2	76.8%
SEMA	32.5	20.9	64.4%
VT	36.7	37.8	102.9%
WCMA	87.1	66.0	75.7%
TOTAL	589.5	548.9	93.1%

Summer 2012 RTDR Audit Results Capped at Load Zone Net CSO

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent Net CSO
CT	115	115.3	100.0%
ME	206	205.7	100.0%
NEMA	50.6	38.5	76.2%
NH	22.3	22.28	100.0%
RI	39.4	30.23	76.8%
SEMA	32.5	20.93	64.4%
VT	36.7	36.72	100.0%
WCMA	87.1	65.95	75.7%
TOTAL	589.5	535.6	90.9%

RTEG Audit Results

Summer 2012

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent Net CSO
CT	165.6	171.5	103.5%
ME	17.0	15.7	92.4%
NEMA	50.7	42.6	84.1%
NH	26.9	33.8	125.7%
RI	25.1	27.2	108.3%
SEMA	26.8	20.1	74.9%
VT	10.2	7.3	71.5%
WCMA	42.3	42.5	100.6%
TOTAL	364.5	360.7	98.9%

Summer 2012 RTEG Audit Results Capped at Load Zone Net CSO

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent Net CSO
CT	165.6	165.6	100.0%
ME	17.0	15.7	92.4%
NEMA	50.7	42.6	84.1%
NH	26.9	26.9	100.0%
RI	25.1	25.1	100.0%
SEMA	26.8	20.1	74.9%
VT	10.2	7.3	71.5%
WCMA	42.3	42.3	100.0%
TOTAL	364.5	345.6	94.8%

2012 RTDR Performance during 1/28/13 dispatch

		Performance	
Load Zone	Net CSO (MW)	MW	%
CT	75	52	69%
ME	142	198	140%
NEMA	18	19	109%
NH	21	14	65%
RI	18	14	76%
SEMA	13	10	74%
VT	36	33	92%
WCMA	50	32	65%
Total	373	372	100%

2012 RTDR Performance during 1/28/13 dispatch capped at Load Zone net CSO

		Performance	
Load Zone	Net CSO (MW)	MW	%
CT	75	52	69%
ME	142	142	100%
NEMA	18	18	100%
NH	21	14	65%
RI	18	14	76%
SEMA	13	10	74%
VT	36	33	92%
WCMA	50	32	65%
Total	373	314	84%

RTDR Audit Results

Winter 2012 - 2013

Load Zone	Dispatched MW (net CSO)	Performance (MW)	Percentage
CT	75	86	116%
ME	141	207	146%
NEMA	19	28	146%
NH	22	17	75%
RI	18	22	122%
SEMA	13	15	112%
VT	36	36	99%
WCMA	51	35	68%
Total	377	446	118%

Winter 2012 - 2013 RTDR Audit Results Capped at Load Zone Net CSO

Load Zone	Dispatched MW (net CSO)	Performance Capped at Load Zone Net CSO (MW)	Percentage
CT	75	75	100%
ME	141	141	100%
NEMA	19	19	100%
NH	22	17	75%
RI	18	18	100%
SEMA	13	13	100%
VT	36	36	99%
WCMA	51	35	68%
Total	377	354	94%

RTEG Audit Results

Winter 2012 - 2013

Load Zone	Dispatched MW (net CSO)	Performance (MW)	Percentage
CT	115	116	101%
ME	11	14	126%
NEMA	34	33	96%
NH	22	22	98%
RI	20	18	90%
SEMA	19	18	93%
VT	6	7	120%
WCMA	34	30	88%
Total	261	258	99%

RTEG Audit Results Capped at Load Zone NET CSO – Winter 2012 - 2013

Load Zone	Dispatched MW	Performance (MW)	Percentage
CT	115	115	100%
ME	11	11	100%
NEMA	34	33	96%
NH	22	22	98%
RI	20	18	90%
SEMA	19	18	93%
VT	6	6	100%
WCMA	34	30	88%
Total	261	252	97%

RTDR Performance - Summer 2013 Audits

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	87	113	130%
ME	124	165	133%
NEMA	25	27	107%
NH	4	7	203%
RI	19	10	52%
SEMA	10	14	142%
VT	23	30	131%
WCMA	25	27	108%
Total	318	394	124%

RTDR Performance - Summer 2013 Audit Performance Capped at Load Zone Net CSO

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	87	87	100%
ME	124	124	100%
NEMA	25	25	100%
NH	4	4	100%
RI	19	10	52%
SEMA	10	10	100%
VT	23	23	100%
WCMA	25	25	100%
Total	318	308	97%

RTEG Performance - Summer 2013 Audits

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	74	74	100%
ME	7	8	114%
NEMA	20	25	125%
NH	11	12	109%
RI	9	14	156%
SEMA	10	11	110%
VT	2	4	200%
WCMA	20	21	105%
Total	153	169	110%

RTEG Performance - Summer 2013 Audits Capped at Load Zone CSOs

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	74	74	100%
ME	7	7	100%
NEMA	20	20	100%
NH	11	11	100%
RI	9	9	100%
SEMA	10	10	100%
VT	2	2	100%
WCMA	20	20	100%
Total	153	153	100%

RTDR Performance on July 19, 2013 Including all Intervals of Dispatch

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	87	86	98.9%
NEMA	25	21	84.0%
NH	4	8	200.0%
RI	19	9	47.4%
SEMA	10	9	95.0%
VT	23	29	126.1%
WCMA	25	21	84.0%
Total	193	183	94.8%

RTDR Performance on July 19, 2013 Capped at the Load Zone Net CSO

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	87	86	98.9%
ME	-	-	-
NEMA	25	21	84.0%
NH	4	4	100.0%
RI	19	9	47.4%
SEMA	10	9	95.0%
VT	23	23	100.0%
WCMA	25	21	84.0%
Total	193	173	90%

RTDR Performance - Winter 2013 Audits

Load Zone	Final Performance (MW)	Net CSO (MW)	Percent of Final Performance to Net CSO
CT	40.4	51.3	78.8%
ME	123.8	126.9	97.6%
NEMA	5.7	4.4	131.2%
NH	2.9	3.2	91.5%
RI	4.7	9.6	49.4%
SEMA	4.6	7.1	64.3%
VT	22.8	25.8	88.7%
WCMA	15.7	18.9	82.8%
Total	220.7	247.1	89.3%

RTDR Performance - Winter 2013 Audits Capped at Load Zone Net CSOs

Load Zone	Final Performance (MW)	Net CSO (MW)	Percent of Final Performance to Net CSO
CT	40.4	51.3	78.8%
ME	123.8	126.9	97.6%
NEMA	4.4	4.4	100.0%
NH	2.9	3.2	91.5%
RI	4.7	9.6	49.4%
SEMA	4.6	7.1	64.3%
VT	22.8	25.8	88.7%
WCMA	15.7	18.9	82.8%
Total	219.3	247.1	88.7%

RTDR Performance - Winter 2013 Audits Capped at Load Zone Net CSOs

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	40.4	51.3	78.8%
ME	123.8	126.9	97.6%
NEMA	5.7	4.4	131.2%
NH	2.9	3.2	91.5%
RI	4.7	9.6	49.4%
SEMA	4.6	7.1	64.3%
VT	22.8	25.8	88.7%
WCMA	15.7	18.9	82.8%
Total	220.7	247.1	89.3%

RTEG Performance - Winter 2013 Audits

Load Zone	Final Performance (MW)	Net CSO (MW)	Percent of Final Performance to Net CSO
CT	78.1	56.1	139.4%
ME	2.9	5.8	51.0%
NEMA	20.6	18.7	110.0%
NH	12.6	10.6	118.5%
RI	11.9	6.1	194.5%
SEMA	6.0	9.9	60.9%
VT	2.5	1.9	134.3%
WCMA	20.1	18.1	111.0%
Total	154.8	127.1	121.8%

RTEG Performance - Winter 2013 Audits Capped at Load Zone Net CSOs

Load Zone	Final Performance (MW)	Net CSO (MW)	Percent of Final Performance to Net CSO
CT	78.1	56.1	100%
ME	2.9	5.8	51.0%
NEMA	18.7	18.7	100%
NH	10.6	10.6	100%
RI	6.1	6.1	100%
SEMA	6.0	9.9	60.9%
VT	1.9	1.9	100%
WCMA	18.1	18.1	100%
Total	120.4	127.1	95%

RTDR Performance on December 14, 2013

Including all Intervals of Dispatch

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	52.1	15.8	30.4%
ME	126.9	135.4	106.7%
NEMA	3.5	1.7	49.2%
NH	3.2	1.5	48.7%
RI	10.2	6.1	60.2%
SEMA	7.0	0.3	4.6%
VT	25.9	23.1	89.4%
WCMA	19.0	13.5	71.2%
Total	247.8	197.7	79.8%

RTDR Performance on December 14, 2013 Capped at Load Zone Net CSOs

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	52.1	15.8	30.4%
ME	126.9	126.9	100.0%
NEMA	3.5	1.7	49.2%
NH	3.2	1.5	48.7%
RI	10.2	6.1	60.2%
SEMA	7.0	0.3	4.6%
VT	25.9	23.1	89.4%
WCMA	19.0	13.5	71.2%
Total	247.8	188.9	76.2%

RTDR Performance - Summer 2014 Audits

Load Zone	Net CSO (MW)	Audit Results (MW)	Audit vs. Net CSO
CT	92.0	80.2	87%
ME	129.8	160.0	123%
NEMA	20.3	16.5	81%
NH	7.2	7.3	102%
RI	16.7	13.3	80%
SEMA	8.9	12.2	137%
VT	27.1	30.2	112%
WCMA	27.7	23.8	86%
Total	329.6	343.6	104%

RTDR Summer 2014 Audits Capped at Load Zone Net CSO

Load Zone	Net CSO (MW)	Capped Audit Results (MW)	Capped Audit Results vs. Net CSO
CT	92.0	80.2	87%
ME	129.8	129.8	100%
NEMA	20.3	16.5	81%
NH	7.2	7.2	100%
RI	16.7	13.3	80%
SEMA	8.9	8.9	100%
VT	27.1	27.1	100%
WCMA	27.7	23.8	86%
Total	329.6	306.8	93.1%

RTEG Performance - Summer 2014 Audits

Load Zone	Net CSO (MW)	Audit Results (MW)	Audit vs. Net CSO
CT	73.6	84.8	115%
ME	3.4	3.7	109%
NEMA	19.0	19.3	102%
NH	13.2	12.7	96%
RI	13.8	12.0	87%
SEMA	8.3	8.6	103%
VT	3.6	2.7	74%
WCMA	20.2	17.8	88%
Total	155.1	161.5	104%

RTEG Summer 2014 Audits Capped at Load Zone Net CSO

Load Zone	Net CSO (MW)	Capped Audit Results (MW)	Capped Audit Results vs. Net CSO
CT	73.6	73.6	100%
ME	3.4	3.4	100%
NEMA	19.0	19.0	100%
NH	13.2	12.7	96%
RI	13.8	12.0	87%
SEMA	8.3	8.3	100%
VT	3.6	2.7	74%
WCMA	20.2	17.8	88%
Total	155.1	149.5	96.4%

RTDR Final Performance - Winter 2014-2015 Audits

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	73.0	66.3	90.8%
ME	95.5	127.0	133.0%
NEMA	24.8	38.1	153.6%
NH	5.8	3.7	64.4%
RI	15.0	9.8	65.7%
SEMA	7.4	6.1	83.0%
VT	25.3	29.3	115.7%
WCMA	26.0	25.2	96.9%
Total	272.7	305.5	112.0%



RTDR Final Performance - Winter 2014-2015 Audits Capped at Load Zone Net CSO

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	73.0	66.3	90.8%
ME	95.5	95.5	100.0%
NEMA	24.8	24.8	100.0%
NH	5.8	3.7	64.4%
RI	15.0	9.8	65.7%
SEMA	7.4	6.1	83.0%
VT	25.3	25.3	100.0%
WCMA	26.0	25.2	96.9%
Total	272.7	256.7	94.1%

RTEG Final Performance - Winter 2014-2015 Audits

Load Zone	Net CSO (MW)	Final Performance (MW)	Percent of Final Performance to Net CSO
CT	74.2	79.7	107.4%
ME	5.5	3.5	63.5%
NEMA	4.1	2.1	51.5%
NH	13	8.7	66.7%
RI	10.6	11.8	111.9%
SEMA	14.7	8.1	55.3%
VT	3.7	3.3	90.6%
WCMA	19.9	18.1	91.2%
Total	145.6	135.4	93.0%

RTEG Final Performance - Winter 2014-2015 Audits Capped at Load Zone net CSO

Load Zone	Net CSO (MW)	Initial Audit Results (MW)	Audit vs. Net CSO
CT	74.2	74.2	100.0%
ME	5.5	3.5	63.5%
NEMA	4.1	2.1	51.5%
NH	13	8.7	66.7%
RI	10.6	10.6	100.0%
SEMA	14.7	8.1	55.3%
VT	3.7	3.3	90.6%
WCMA	19.9	18.1	91.2%
Total	145.6	128.6	88.3%

RTDR Final Performance - Winter 2014-2015 Audits

Load Zone	NET CSO (MW)	Audit Results (MW)	Audit vs. Net CSO
CT	73.0	66.3	91%
ME	95.5	127.0	133%
NEMA	30.9	38.1	123%
NH	5.8	3.7	64%
RI	15.0	9.8	66%
SEMA	7.4	6.1	83%
VT	25.3	29.3	116%
WCMA	26.0	25.2	97%
Total	278.8	305.5	110%

RTEG Final Performance - Winter 2014-2015 Audits

Load Zone	Net CSO (MW)	Audit Results (MW)	Audit vs. Net CSO
CT	74.2	79.7	107%
ME	5.5	3.5	64%
NEMA	4.1	2.1	52%
NH	13.0	8.7	67%
RI	10.6	11.8	112%
SEMA	14.7	8.1	55%
VT	3.7	3.3	91%
WCMA	19.9	18.1	91%
Total	145.6	135.4	93%

RTDR Performance – Final Summer 2015 Audits

Load Zone	NET CSO (MW)	Audit Results (MW)	Audit vs. Net CSO
CT	74.7	98.5	132%
ME	109.6	122.5	112%
NEMA	39.0	27.5	71%
NH	8.1	7.3	91%
RI	9.9	8.9	90%
SEMA	11.0	10.3	94%
VT	27.4	25.6	93%
WCMA	37.7	26.8	71%
Total	317.4	327.4	103%

RTEG Performance – Final Summer 2015 Audits

Load Zone	Net CSO (MW)	Audit Results (MW)	Audit vs. Net CSO
CT	101.1	90.1	89%
ME	4.8	3.6	75%
NEMA	7.0	2.2	32%
NH	13.9	10.9	78%
RI	12.5	14.4	120%
SEMA	10.0	8.8	88%
VT	3.4	4.5	131%
WCMA	19.0	22.7	119%
Total	171.7	157.0	92%

RTDR Performance – Final Winter 2015-2016 Audits

Load Zone	NET CSO (MW)	Audit Results (MW)	Audit vs. Net CSO
CT	61.5	76.7	125%
ME	105.9	116.0	110%
NEMA	26.1	23.3	89%
NH	4.8	8.1	170%
RI	9.9	5.8	59%
SEMA	5.3	8.5	160%
VT	28.6	27.4	96%
WCMA	25.3	16.6	66%
Total	267.3	282.5	106%

RTEG Performance – Final Winter 2015-2016 Audits

Load Zone	Net CSO (MW)	Audit Results (MW)	Audit vs. Net CSO
CT	72.4	85.2	118%
ME	3.3	5.7	172%
NEMA	5.1	3.4	67%
NH	9.1	14.3	157%
RI	10.7	13.6	127%
SEMA	8.1	7.2	89%
VT	2.9	5.3	185%
WCMA	17.9	19.6	109%
Total	129.4	154.2	119%