

Witness: Warshaw

Exhibits

Schedule JDW-1	Summary of Transmission Expenses Estimated for 2016
Schedule JDW-2	Summary of ISO Tariff Section II Charges Estimated for 2016
Schedule JDW-3	Summary of System Restoration and Reactive Supply Charges Estimated for 2016
Schedule JDW-4	Summary of New England Power Schedule No. 21 Charges Estimated for 2016

Summary of Transmission Expenses Estimated For the Year 2016

ISO-NE Tariff Schedule 21 NEP LNS Tariff Charges		
1	Local Network Service (Monthly Demand Charges)	\$4,842,112
2	Other NEP Charges	<u>997,412</u>
Subtotal NEP Charges		<u>\$5,839,524</u>
ISO-NE OATT Tariff Section II Charges		
3	OATT Schedule 9 - Regional Network Service Charges	\$15,985,758
4	OATT Schedule 1 - Scheduling, System Control & Dispatch	250,862
5	OATT Schedule 16 - System Restoration and Planning Service	90,161
6	OATT Schedule 2 - Reactive Supply and Voltage Control Service	<u>208,006</u>
Subtotal ISO-NE Tariff Section II Charges		<u>\$16,534,787</u>
ISO-NE Tariff Section IV.A - Administrative Charges		
7	ISO-NE Schedule 1 - Scheduling & Dispatch Service	\$360,550
8	ISO-NE Schedule 5 - NESCOE Budget	<u>5,537</u>
Subtotal ISO-NE Tariff Section IV.A Charges		<u>\$366,087</u>
9	Subtotal of ISO-NE Tariff Charges	<u>\$16,900,874</u>
10	Total Estimated Expenses Flowing Through Current Rates	\$22,740,398

Line 1 = JDW-4: Column (1), Line 13

Line 2 = JDW-4: Sum of Column (2) thru (6), Line 13

Line 3 = JDW-2, page 1: Column (2), Line 13

Line 4 = JDW-2, page 1: Column (3), Line 13

Line 5 = JDW-2, page 1: Column (5), Line 13

Line 6 = JDW-2, page 1: Column (6), Line 13

Line 7 = JDW-2, page 2: Column (2), Line 13

Line 8 = JDW-2, page 2: Column (3), Line 13

Line 9 = Sum of Line 3 thru Line 8

Line 10 = Sum of Line 1 thru Line 8

**Summary of Estimated Transmission Expenses
2015 vs. 2016 Filing Years**

		January 2015 Retail Filing	January 2016 Estimate	Yr/Yr Incr/(Decr)
ISO-NE Tariff Schedule 21 NEP LNS Tariff Charges				
1	Local Network Service (Monthly Demand Charges)	\$ 6,286,834	\$ 4,842,112	\$ (1,444,722)
2	Other NEP Charges	989,843	997,412	7,569
	Subtotal	\$ 7,276,677	\$ 5,839,524	\$ (1,437,153)
ISO-NE OATT Tariff Section II Charges				
3	OATT Schedule 9 - Regional Network Service Charges	\$ 14,480,332	\$ 15,985,758	\$ 1,505,426
4	OATT Schedule 1 - Scheduling, System Control & Dispatch	261,157	250,862	(10,294)
5	OATT Schedule 16 - System Restoration and Planning Service	85,578	90,161	4,583
6	OATT Schedule 2 - Reactive Supply and Voltage Control Service	172,635	208,006	35,371
	Subtotal	\$ 14,999,702	\$ 16,534,787	\$ 1,535,086
ISO-NE Tariff Section IV.A - Administrative Charges				
7	ISO-NE Schedule 1 - Scheduling & Dispatch Service	\$ 287,787	\$ 360,550	\$ 72,764
8	ISO-NE Schedule 5 - NESCOE Budget	-	5,537	5,537
	Subtotal	\$ 287,787	\$ 366,087	\$ 78,300
9	Subtotal of ISO-NE Tariff Charges	\$ 15,287,488	\$ 16,900,874	\$ 1,613,386
10	Total Estimated Expenses	\$ 22,564,165	\$ 22,740,398	\$ 176,233

**Summary of ISO-NE Tariff Section II Charges
Estimated For the Year 2016**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Monthly PTF kW Load	OATT Schedule 9 - Regional Network Service Charges	OATT Schedule 1 - Scheduling, System Control & Dispatch	OATT Schedule 16 - System Restoration and Planning Service	OATT Schedule 2 - Reactive Supply and Voltage Control Service	ISO-NE OATT Tariff Section II Charges	ISO-NE Schedule 1 - Scheduling & Dispatch Service	ISO-NE Schedule 5 - NESCOE Budget	Total ISO-NE Transmission Charges
1 January	142,969	\$1,175,938	\$19,174	\$6,891	\$15,898	\$1,217,900	\$ 27,557	\$ 423	\$ 1,245,881
2 February	147,409	1,212,457	19,769	7,105	16,392	1,255,723	28,413	436	1,284,573
3 March	146,093	1,201,633	19,593	7,042	16,246	1,244,513	28,159	432	1,273,105
4 April	124,025	1,020,121	16,633	5,978	13,792	1,056,523	23,906	367	1,080,796
5 May	162,952	1,340,300	21,854	7,854	18,120	1,388,128	31,409	482	1,420,020
6 June	166,099	1,453,089	22,276	8,006	18,470	1,501,841	32,016	492	1,534,349
7 July	194,659	1,702,942	26,106	9,383	21,646	1,760,076	37,521	576	1,798,173
8 August	188,019	1,644,853	25,215	9,063	20,908	1,700,038	36,241	557	1,736,836
9 September	180,470	1,578,812	24,203	8,699	20,068	1,631,782	34,786	534	1,667,101
10 October	136,243	1,191,899	18,272	6,567	15,150	1,231,888	26,261	403	1,258,552
11 November	136,230	1,191,785	18,270	6,566	15,149	1,231,770	26,258	403	1,258,432
12 December	145,391	1,271,929	19,499	7,008	16,167	1,314,603	28,024	430	1,343,057
13 12-Mo Total		\$15,985,758	\$250,862	\$90,161	\$208,006	\$16,534,787	\$360,550	\$5,537	\$16,900,874

Line 1-12: Column (1) = Highest Monthly Regional Network Load during the 2014 - 2015 period

Line 1-5: Column (2) = 2015 OATT Schedule 9 RNS Rate * Column (1) / 12

2015 RNS Rate= \$ **98.70** /kW-YR

Line 6-12: Column (2) = Estimated 2016 RNS Rate * Column (1) / 12

2016 RNS Rate= \$ **104.98** /kW-YR

Line 1-12: Column (3) = Current OATT Schedule 1 Rate * Column (1) / 12

Rate = \$ **1.60933** /kW-YR

Line 1-12: Column (4) = 0 [No Reliability Must Run Contracts are currently in effect for New Hampshire]

Line 1-12: Column (4) = JDW-3, Line 8 * Column (1)

Rate = \$ **0.05679** /kW-Month

Line 1-12: Column (5) = JDW-3, Line 4 * Column (1)

Rate = \$ **0.13592** /kW-Month

Line 1-12: Column (6) = Sum of Columns (2) thru (5)

Line 1-12: Column (7) = Column (1) * \$0.19275 per kW-month per ISO 2016 Capital Budget Filing

Rate = \$ 0.19275 kW-month

Line 1-12: Column (8) = Column (1) * \$0.00296 per kW-month per NESCOE 2016 Budget Filing

Rate = \$ 0.00296 kW-month

Line 1-12: Column (9) = Sum of Columns (6) thru (8)

Line 13 = Sum of Line 1 thru Line 12

**Summary of ISO Tariff Section IV.A Administrative Charges
Estimated For the Year 2016**

	(1)	(2)	(3)	(4)
Period	Monthly Regional Network Load	ISO-NE Schedule 1 - Scheduling & Dispatch Service	ISO-NE Schedule 5 - NESCOE Budget	ISO-NE Tariff Section IV.A - Administrative Charges
1 January	142,969	\$27,557	\$423	\$27,980
2 February	147,409	28,413	436	28,849
3 March	146,093	28,159	432	28,592
4 April	124,025	23,906	367	24,273
5 May	162,952	31,409	482	31,891
6 June	166,099	32,016	492	32,507
7 July	194,659	37,521	576	38,097
8 August	188,019	36,241	557	36,797
9 September	180,470	34,786	534	35,320
10 October	136,243	26,261	403	26,664
11 November	136,230	26,258	403	26,662
12 December	145,391	28,024	430	28,454
13	Totals	\$360,550	\$5,537	\$366,087

Column (1) = Highest Monthly Regional Network Load during the 2014 - 2015 period
Column (2) = Column (1) * \$0.19275 per kW-month per ISO 2016 Capital Budget Filing
Column (3) = Column (1) * \$0.00296 per kW-month per NESCOE 2016 Budget Filing
Column (4) = Column (2) + Column (3)

Summary of Reactive Power & Black Start Costs Estimated For the Year 2016

Section I: Development of ISO-NE Schedule 2 Costs

1	Granite Total ISO-NE Schedle 2 Costs	\$259,693
2	2015 Granite Peak Load (KW)	<u>194,659</u>
3	Estimated Rate / KW-Yr	<u>\$1.3341</u>
4	Estimated Rate / KW-Mo	\$0.1112

Section II: Development of ISO-NE Schedle 16 Costs

5	GraniteTotal ISO-NE Schedule 16 Settlement Costs	\$112,542
6	2015 Granite Peak Load (KW)	<u>194,659</u>
7	Estimated Rate / KW-Yr	<u>\$0.5781</u>
8	Estimated Rate / KW-Mo	\$0.0482

Line 1 = Granite ISO-NE Schedule 2 costs for the 12 months ending December 2015

Line 2 = Granite Peak Load in 2015

Line 3 = Line 1 / Line 2

Line 4 = Line 3 / 12

Line 5 = ISO Schedule 16 Settlement Reports for the 12 months ending December 2015

Line 6 = Line 2

Line 7 = Line 5 / Line 6

Line 8 = Line 7 / 12

**Summary of New England Power - Schedule No. 21 Charges
Estimated For the Year 2016**

Period	(1) Net Monthly Demand Charge	(2) Load Dispatch Charge	(3) Specific Distribution	(4) Transformer Surcharge	(5) Meter Surcharge	(6) Maintenance Service Credit	(7) Total NEP Costs
1 January	\$403,509	(\$1,225)	\$18,549	\$66,626	\$1,249	(\$2,081)	\$486,627
2 February	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
3 March	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
4 April	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
5 May	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
6 June	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
7 July	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
8 August	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
9 September	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
10 October	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
11 November	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
12 December	403,509	(1,225)	18,549	66,626	1,249	(2,081)	486,627
13 12- Mo Total	\$4,842,112	-\$14,696	\$222,583	\$799,509	\$14,988	-\$24,972	\$5,839,524

Column (1) = Monthly Average of the PTF & Non-PTF Monthly Demand Charges for the 12 month period ending December 2015

Column (2) = Monthly Average of the Load Dispatch Charge for the 12 month period ending December 2015

Column (3) = 26,498 kW & \$0.70 per NEP Tariff as of June 2015

Column (4) = 195,958 kW & \$0.34 per NEP Tariff as of June 2015

Column (5) = 17 meters * \$73.47 per meter per NEP Tariff as of June 2015

Column (6) Per the Integrated Facilities Supplement dated July 3, 2012 between NEP and Granite State

Column (7) = Sum of Columns (1) through (6)

Column (8) = Total NEP Costs adjusted to reflect impact of capital investments

**Comparison of Actual LNS Transmission Expenses
For the Years 2013, 2014 & 2015**

NEP Schedule 21 Actual Expenses					
					(1)
	Coincident Network Load - PTF	NEP Monthly Trans Exp - PTF	NEP Monthly Trans Exp - NonPTF	Load Dispatch Charge	Non-PTF Sch 21-NEP
January-2013	153,530	(81,188)	200,854	(14,844)	\$207,676
February-2013	143,680	161,966	319,093	(16,311)	\$568,277
March-2013	136,993	34,832	247,082	28,698	\$412,652
April-2013	128,011	(36,498)	215,268	(7,539)	\$273,341
May-2013	176,816	155,222	273,531	(5,803)	\$525,515
June-2013	182,660	(90,282)	220,852	(8,325)	\$220,363
July-2013	197,514	(242,367)	224,542	(5,151)	\$75,244
August-2013	177,242	(380,536)	237,354	(7,766)	(\$52,891)
September-2013	191,391	(145,125)	252,250	(4,019)	\$200,778
October-2013	129,171	(118,881)	276,216	(1,188)	\$254,654
November-2013	142,089	87,941	259,596	(631)	\$445,427
December-2013	155,611	64,308	270,331	(2,927)	\$430,320
					\$3,561,356
January-2014	156,544	(35,966)	264,068	(11,712)	\$314,327
February-2014	147,409	(1,047)	280,545	3,408	\$380,351
March-2014	146,093	252,232	359,634	(4,705)	\$704,648
April-2014	124,025	(28,935)	266,780	(3,983)	\$332,195
May-2014	129,344	160,955	303,489	1,082	\$562,304
June-2014	165,249	234,375	334,773	4,104	\$656,019
July-2014	194,659	(41,828)	323,742	(2,162)	\$362,796
August-2014	177,677	(172,718)	313,768	(6,540)	\$219,221
September-2014	180,470	9,345	314,212	(4,445)	\$419,264
October-2014	129,171	(118,881)	276,216	(1,188)	\$306,082
November-2014	142,089	87,941	259,596	(631)	\$487,196
December-2014	145,391	(133,976)	254,048	1,862	\$155,784
					\$4,900,186
		% increase in NEP Expenses			38%
January-2015	150,582	704	355,771	3,281	\$449,852
February-2015	146,988	4,340	370,132	2,712	\$462,152
March-2015	138,190	297,777	507,488	2,670	\$893,053
April-2015	119,886	(94,370)	295,358	3,616	\$289,586
May-2015	162,952	158,759	407,278	1,304	\$652,291
June-2015	166,099	(55,595)	345,761	(1,618)	\$372,890
July-2015	183,851	(217,344)	324,928	(1,877)	\$190,050
August-2015	188,019	(286,313)	379,671	(4,750)	\$173,397
September-2015	178,737	(218,301)	377,491	(5,363)	\$166,086
October-2015	126,498	(257,004)	332,121	(1,129)	\$154,901
November-2015	133,049	567,934	515,183	1,808	\$1,168,715
December-2015	137,015	18,132	298,360	(15,349)	\$385,169
					\$5,358,141
		% increase in NEP Expenses			9%

National Grid Local System Investment Plans

NEP LNS 2016 Projects

	<u>\$millions</u>
Crystal Lake Sub	3.869
Filed Street	11.808
N Quincey Sub	2.024
Meadowbrook Sub	10.650
3315 Tap ACR (Sub-T)	13.247
4402 ACR (Sub-T)	0.120
3318 ACR (Sub-T)	0.338
Mount Support Sub Trans	3.610
Kilvert Sub	2.333
Total	47.999

NEP LNS 2015 Projects

	<u>\$millions</u>
O-15S ACR	6.026
Read St Sub	2.200
Harrison Blvd Sub	3.000
Hull Lines	1.400
Revere Sub	2.012
S145 & T146 115kv Taps	0.301
T20 Meadow St	3.250
E. Hobrook Breaker	1.950
Norwell Area C3&S9 Lines	15.426
Merrimac Valley North Shore Reli	27.655
E Longmeadow	4.182
Slayton Hill Sub	1.630
Total	69.032

NEP LNS 2014 Projects

	<u>\$millions</u>
Comerford Sub Control House	3.277
E. Main St Sub Westboro	4.457
West Hampden	4.250
DuPont Sub	3.900
Ward Hill T1	2.700
Adams St	3.115
Highland Park	5.300
R144 Cable Repair	1.800
Q143 & R144 Refurbishment	10.800
Total	39.599

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