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ELECTRONICALLY FILED March 26, 2014

Faith Huntington
Director of Electricity and Natural Gas Utilities
Maine Public Utilities Commission
State House Station 18
Augusta, ME 04333-0018

RE: Chapter 330, §8(A), Annual Filing of Schedule of Transmission Line Rebuilding or Relocation Projects – Emera Maine

Dear Ms. Huntington:

Pursuant to Chapter 330 of the Rules of the Maine Public Utilities Commission, Emera Maine hereby submits its schedule of transmission line rebuilding, relocation and construction projects for the next five years.

Included in this filing is the identification of all planned transmission projects 34.5kV or greater that change the electrical characteristic or rating of a portion of the transmission system. This includes all new construction or reconducting of any transmission line. New transmission substations or additions to transmission substations that add line terminations or increase line ratings are also included. Also included with this filing is the transmission line loading data for Emera Maine's Bangor Hydro District.

For ease of reference, the Chester SVC Project that was included in last year's filing has been removed from this report as it is a Bangor VAR Company, Inc., project and is before the Commission in Docket No. 2012-00514.

Please feel free to contact Kendra Overlock at (207) 973-2895 or me at (207) 973-2854 should you have any questions regarding this filing.

Sincerely,

A handwritten signature in blue ink, appearing to read "Nathan Martell", is written over a light blue horizontal line.

Nathan Martell
Regulatory Counsel

NM:sm
Enclosure

Emera Maine Proposed Potential Transmission Projects

Name	L75 & BW3 Rebuild ROW Phase I	Keene Rd. Expansion for Oakfield Wind	KR Transformer Addition
Line Identification	Line 75	-	KR Sub
Location	Bangor	Chester	Chester
Estimated Cost	\$201,464	\$0	\$3,200,000
Voltage Level	46kV	345kV	46kV
Peak Load	14 MVA	150MVA	28MVA
Project Type	Rebuild/Rerate	Substation	Substation
Reason for Need	Replace aging and substandard plant discovered during recent inspections.	To accommodate the 115kV line interconnecting the new Oakfield Wind project. Emera Maine's portion of the project is to expand the 345kV bus and interconnect the project with a new 345kV breaker.	Line 63 is a 115kV line feeding the Northern Division from Keene Rd to Chester Substation. This project would allow the division to be fed following an outage of line 63. It will also mitigate an overload on one of the two Chester 115kV/46kV transformers following a contingency.
Year Originally Constructed	1959	-	-
Existing Structure/Material/Design	Single pole wood pole	-	-
Existing Conductor	3/0 ACSR	-	-
New Conductor	795 AAC	-	795ACSR
Length	10 spans	-	0.4 mi
Impact on Existing/Proposed Generators?	No	Yes	Yes
Describe the Impact on Generators	None	Dedicated feed to the new Oakfield generator. All costs paid by the generator.	Minor impact to existing small hydro generating units at Medway and W. Enfield, allowing them to stay on line following a contingency.
Potential Alternative	Defer project and accept risk.	N/A	Alternative would be building a new 115kV line parallel to Line 63 and also ensuring the diesel generators at Medway are licensed and able to run when needed.
Related MPUC Activity (where applicable)		Reference Docket 2013-00232 approval of Large Generator Interconnect.	

Emera Maine Proposed Potential Transmission Projects

Name	L8 Rebuild - Elm to Parkway So	Line 5 Reconstructor to T9L	6901 Rbld
Line Identification	Line 8		6901
Location	Brewer	Veazie	Structure 22 to Canadian Border
Estimated Cost	\$307,203	\$200,000	\$3,000,000
Voltage Level	46kV	46kV	69kV
Peak Load	50MVA	90MVA	40MVA
Project Type	Rebuild/Rerate	Rebuild/Rerate	Rebuild/Rerate
Reason for Need	Line condition and required Line 8 rating increase due to overload during Line 9 outage. Increased separation from Line 9 or relocation to roadside also required for working clearance and reliability.	The existing section of 46kv Line 5 that ties transformer T9 with the lower sub at Graham Substation needs to be upgraded to match the ampacity of the transformer. The existing line is overloaded during contingency operation with one of the other Graham Substation transformers out of service.	Age and Condition, sag limited for thermal ratings, major limiting factor for N-1 planning criteria
Year Originally Constructed	1953		1964
Existing Structure/Material/Design	Wood Single Pole Crossarm	Single Wood Pole	Wood Pole H-Frame
Existing Conductor	266 ACSR	795	336.4 ACSR Linnet
New Conductor	795 AAC	1192	795 ACSR Drake
Length	1.2 mile	.25 Miles	8.97 Miles
Impact on Existing/Proposed Generators?	No	No	No
Describe the Impact on Generators	None	No Impact on Generators	Impacts all Generators with export. May increase thermal limits on 6901, but there are other thermal limitings remaining.
Potential Alternative	Run the line to failure with reduced operating options by keeping the existing line rating. Rebuild inplace with substandard separation from Line 9 which limits working clearance and reliability.		RMR with ReEnergy Fort Fairfield
Related MPUC Activity (where applicable)			Open Line 6901 Investigation Docket 2013-00289

Emera Maine Proposed Potential Transmission Projects

Name	6908 Rbld	BHE MPRP - Orrington Cap Bank & 115kV Buyback	Flo's Inn Transformer - Phase 2
Line Identification	6808	ORR Sub	
Location	From New Sweden north to Fish River substation	Orrington	Presque Isle
Estimated Cost	Phase I \$4,000,000; Phase II TBD	TBD	\$3,000,000 (Phase 2)
Voltage Level	69kV	115kV	
Peak Load	10 MVA	-	
Project Type	Rebuild/Rerate	Substation	Substation
Reason for Need	Age and condition, sag limited for thermal ratings	Termination equipment for CMP's 115kV line (MPRP project). Breakers and 115kV line terminal have already been installed. Miscellaneous work to terminate the new line in 2015. Project includes Emera Maine purchase of 115 kV Lines in Orrington.	The Flo's Inn Back-Up Transformer will improve system reliability in Northern Maine by procuring and installing a new, back-up transformer at Flo's Inn Substation in Presque Isle, Maine. This transformer mitigates risk by enabling Emera Maine Northern Operating District to continue to support the Northern Maine electrical system should the existing transformer fail at either Emera Flo's Inn sub or Algonquin Tinker sub in New Brunswick. The transformer purchase spend of \$2.5M occurred in 2013 and substation installation will occur in 2014.
Year Originally Constructed	1950	-	
Existing Structure/Material/Design	Wood Pole H-Frame	-	
Existing Conductor	2/0 F Copperweld	-	
New Conductor	795 ACSR Drake	-	
Length	10.4, 10.4 and 10.4 three year project	-	
Impact on Existing/Proposed Generators?	No	Yes	No
Describe the Impact on Generators	N/A no generators	New 115kV line south of Orrington could allow improvements to all generators in Emera Maine territory by providing an additional path to export.	Does not impact generators
Potential Alternative	Upgrade to 138 kV.	N/A	
Related MPUC Activity (where applicable)		Reference CMP CPCN MPUC Docket 2008-00255. Also, MPUC filing expected in late 2014 for approval of Emera Maine line purchase.	

Emera Maine Proposed Potential Transmission Projects

Name	MDI New Transmission Line Crooked Rd.	Passadumkeag Wind Interconnect	L85 & L87 Rebuild, Chester to Lincoln
Line Identification	Line 34		Line 85 & Line 87
Location	Bar Harbor	Costigan	Chester to Lincoln
Estimated Cost	TBD	\$0	TBD
Voltage Level	34.5kV	115kV	46kV
Peak Load	18.9MVA	39.8MVA	18.9MVA
Project Type	Build	Build	Rebuild/Rerate
Reason for Need	A second transmission feed to Bar Harbor is required to improve reliability and serve load growth.	Interconnection of Passadumkeag Wind Project	Line 87 transmission line overload with loss of line 85. Pole condition is also an issue on both Line 85 & 87, along with separation from line 85 in locations.
Year Originally Constructed			1960
Existing Structure/Material/Design	n/a		Wood Single Pole Crossarm
Existing Conductor	n/a		1/0 & 266 ACSR
New Conductor	795 AAC		559 AAAC, 556 AAC
Length	8 Miles		1.8 miles
Impact on Existing/Proposed Generators?	No	Yes	Yes
Describe the Impact on Generators	none	Dedicated feed to generator. All costs paid by the generator.	Minor impact to existing hydro generation at W.Enfield.
Potential Alternative	Upgrade the existing Line 22 feeding Bar Harbor energized without building a second feed or build the new line along the more costly Rt 3 option.	N/A	Build additional 46kV line from Chester to Lincoln
Related MPUC Activity (where applicable)			

Emera Maine Proposed Potential Transmission Projects

Name	Northern Maine Reliability Solution	WW 46/12.5 Sub - Transmission work	L75 & BW3 ROW Phase II
Line Identification		TDB	Line 75
Location	Monticello or Littleton, Maine to Woodstock, NB	Bangor	Bangor
Estimated Cost	Approx \$17M	TBD	TBD
Voltage Level	138kV	46kV	46kV
Peak Load	26 MW		14MVA
Project Type	Build	Build	Rebuild/Rerate
Reason for Need	Reliability need for the project is fully described in the Report titled "Transmissions System Reliability Investigation--Emera Maine Reliability Solutions" prepared by RLC Engineering and filed on february 20, 2014 in MPUC Docket 2012-00589.	Project to upgrade WW sub to 46/12.5kV to provide needed capacity for current loads during contingencies and to support new load in this area of the system.	Rebuild to address age and condition of plant (both in ROW and that which spans I-95) and upgrade the conductor to match the remainder of the line.
Year Originally Constructed	N/A	This is new construction	1950s
Existing Structure/Material/Design	TBD		Single wood Pole w/HLPI
Existing Conductor	N/A	N/A	3/0 ACSR
New Conductor	795 ACSR	795	336 AAC 46kV or larger
Length	3.5 Miles	2 Miles	2 miles (estimate)
Impact on Existing/Proposed Generators?	No	No	No
Describe the Impact on Generators	May provide additional export capacity for northern Maine generators.	No Impact on Generators	None
Potential Alternative	A thorough alternatives analysis was conducted including study of the following options: strengthened NB connections, new ISO-NE connection, and new in-region generation. The new NB connection solves reliability and is the lowest cost to customers.		Defer and accept risk.
Related MPUC Activity (where applicable)	Reference MPUC Docket 2012-00589 Northern Maine Reliability Investigation and Docket 2014-00048 CPCN application.		

Emera Maine Proposed Potential Transmission Projects

Name	L13/FR1 Rebuild	6910 Rebuild	
Line Identification	Line 13	6910	
Location	Hancock to East Franklin Substations	Bridgewater to Mullen	
Estimated Cost	TBD	TBD	
Voltage Level	34.5kV	69kV	
Peak Load	5.9MVA	16MVA	
Project Type	Rebuild/Rerate	Rebuild/Rerate	
Reason for Need	Rebuild of Line 13 and underlying distribution circuits due to age and condition. By installing covered distribution conductor, this project will also help mitigate damage from overbuild contacts. Construction planned in 3 phases: 4 miles/4 miles/3 miles	Age and Condition, sag limited for thermal ratings, limiting factor for N-1 planning contingencies	
Year Originally Constructed	1926, rebuilt in 1950s	1952	
Existing Structure/Material/Design	Single wood pole	Wood Pole H Frame	
Existing Conductor	#6CU, 3/0 ACSR, 4/0 ACSR	2/0 Copperweld	
New Conductor	336 AAC	795 ACSR	
Length	11 miles	9.2 and 10.2 Miles	
Impact on Existing/Proposed Generators?	No	Yes	
Describe the Impact on Generators		May reduce numbers of hours of generator operational limits to avoid thermal overload limits on 6910.	
Potential Alternative	Defer and accept risk.		
Related MPUC Activity (where applicable)			

Transmission Line Loading (based on a projected growth from the 2010 Transmission Needs Assessment Analysis)

Line No.	From	To	Nom. Voltage	Conductor	Length (mi.)	Sum. Norm. Rating (MVA)	Summer Peak Hour Loading (N-1)	Contingency	Notes
390	Orrington	Baileyville	345kv	1192 ACSR	84.4	1773	1000 max	S366	Loading managed by ISO
246	Orrington	Veazie	115kv	2-795 ACSR	7.25	457	294.4	L248	Light load, high gen
248	Orrington	Veazie	115kv	795 ACSR	7.25	229	220.8	L246	Light load, high gen
249	Orrington	Veazie	115kv	795 ACSR	7.25	229	220.8	L246	Light load, high gen
65	Orrington	Bucksport	115kv	795 ACSR	5.36	229	125.2	S205	
205	Orrington	Bucksport	115kv	795 ACSR	5.36	229	125.2	S65	
247	Orrington	Orrington	115kv	266 ACSR	4.07	39	25	none	
60	Orrington	Ellsworth Falls	115kv	795 ACSR	20.67	229	100.8	L66	
66	Veazie	Clifton	115kv	795 ACSR	13.41	173	104.8	L60	
51	Clifton	Township 16	115kv	795 ACSR	14.9	229	32.5	L57	Gen loading higher
93	Township 16	Deblois	115kv	795 ACSR	10.71	229	32.3	L57	Gen loading higher
52	Deblois	Columbia	115kv	795 ACSR	9.15	229	32.3	L57	Gen loading higher
61	Columbia	Jonesboro	115kv	4/0 ACSR	12	32	25	L59	
67	Clifton	Ellsworth Falls	115kv	795 ACSR	13.07	173	75	L60	
68	Ellsworth Falls	Ellsworth Falls	115kv	266 & 795 ACSR	0.59	115	56.1	L57	
57	Ellsworth Falls	Trenton	115kv	795 ACSR	14.3	229	55.4	L68	
58	Ellsworth	Sullivan	115kv	795 ACSR	22.45	229	33.1	L51	Gen loading higher
59	Sullivan	Columbia	115kv	795 ACSR	21.7	229	35	L51	Gen loading higher
59	Columbia	Columbia	115kv	266 ACSR	3.63	89	40	L51	Gen loading higher Possible rerate 2015 - wind gen
69	Columbia	Harrington	115kv	266 ACSR	0.66	89	16.2	L61	
64	Veazie	Chester	115kv	2-795 ACSR	43.48	375	220	Keene T1	voltage limited rating
63	Chester	Chester	115kv	795 ACSR	0.37	68	42.7	W.Enf. Gen	
62	Chester	TA R7 Wels	115kv	795 ACSR	17.26	229	126	none	

- Loading on the Bangor Hydro 115kv and above circuits were based on local transmission criteria. Some of these lines will also fall under NERC reliability criteria and subject to N-1-1 and stuck breaker evaluations.

BANGOR DIVISION - Projected growth rate 0.86% per year

1	Veazie	Ellsworth Falls	46kv	4/0, 266,312,336,795	23.2	28	13.3	Boggy T1	
5	Veazie	Old Town	46kv	336 H, 336, 556H, 559	10.75	35	27.3	none	
7	Veazie	Milford	46kv	266, 336, 556H	10.56	34	25.5	L83	
8	Veazie	Hampden	46kv	266, 556H, 795, 750UG	7.69	34	38.9	L9	Final sections in 2014/15 plans
9	Veazie	Brewer	46kv	795 ACSR	6.68	72	58.3	L83	
70	Veazie	Bangor	46kv	559AAAC, 795ACSR	8.48	53	21.5	L71	
71	Veazie	Bangor	46kv	556H, 559, 795	4.89	52	48.8	L72	will monitor
72	Veazie	Bangor	46kv	556H, 559, 795	4.89	52	48.8	L71	"
50	Bangor	Corinth	46kv	3/0 ACSR, 795	15.24	25	13.5	L81	
74	Corinth	Milo	46kv	266 ACSR	17.64	34	10.4	L50	
73	Bangor	Bangor	46kv	3/0, 266 ACSR	3.41	25	23.6	L70	evaluating in 2014
75	Bangor	Bangor	46kv	3/0 ACSR, 336H	3.18	25	15.5	L78	
76	Brewer	Bangor	46kv	336, 556H, 795	0.83	46	32.5	L8	
77	Hampden	Hermon	46kv	556H, 795, 600UG	4.68	46	17.9	L70	
78	Bangor	Hermon	46kv	795 ACSR	6.41	72	26.1	L77	
79	Bangor	Bangor	46kv	795 ACSR	1.34	72	15.5	none	

Line No.	From	To	Nom. Voltage	Conductor	Length (mi.)	Sum. Norm. Rating (MVA)	Summer Peak Hour Loading (N-1)	Contingency	Notes
HANCOCK DIVISION - Projected growth rate 1.21% per year									
2	Ellsworth	Trenton	34.5kv	266, 312, 336, 336H, 559	8.43	27	21.1	Trenton T1	
10	Ellsworth Falls	Sedgewick	46kv	1/0 ACSR, 4/0, 336, 336H, 559, 795	23.73	19	11.7	none	
11	Ellsworth Falls	Hancock	34.5kv	795 ACSR	6.48	37	22.3	Trenton T1	
12	Ellsworth Falls	Ellsworth	34.5kv	477 ACSR	2.55	30	27.9	Trenton T1	will monitor
13	Hancock	Sullivan	34.5kv	3/0, 556H, 795	16.4	18	12.3	Tunk T1	
17	Sullivan	Cherryfield	34.5kv	266, 336H, 559, 795	11.1	27	12.3	Tunk T1	
18	Cherryfield	Harrington	34.5kv	266, 336H	7.11	27	12.3	Tunk T1	
22	Bar Harbor	Bar Harbor	34.5kv	1/0, 336, 336H	6.26	14	14.6	none	one section 1/0 replace w/AA
24	Sullivan	Gouldsboro	34.5kv	266 ACSR	6.48	27	5.7	L15	
28	Hancock	Trenton	34.5kv	3/0, 266, 312, 336, 336H, 350UG, 556H, 559	8.47	18	8.4	Trenton T1	
29	Mount Desert Island	Southwest Harbor	34.5kv	#2 ACSR, 1/0 AAAC, 336H	5.49	11	6.3	none	
32	Trenton	Bar Harbor	34.5kv	559, 1000MCM, 795	6.28	40	27.8	L48	
40	Bar Harbor	Northeast Harbor	34.5kv	#4 ACSR, 1/0 AAAC, 336, 336H, 795	5.95	8.6	2.8	none	
48	Trenton	Mount Desert Island	34.5kv	556H, 559, 795	7.39	36	28.4	L32	

WASHINGTON COUNTY - Projected growth rate 0.75% per year									
3	East Machias	Jonesboro	34.5kv	266, 312, 336, 336H	8.32	27	14.6	L4	
4	East Machias	Jonesboro	34.5kv	336 AAC, 336H	9.65	27	15	L3	
14	Jonesboro	Columbia Falls	34.5kv	#4, #6, 1/0, 336, 336H	10.11	8	4.6	L16	
15	Harrington	Gouldsboro	34.5kv	336, 336H	18.71	27	5.4	L24	
16	Harrington	Jonesboro	34.5kv	336, 336H, 556H	14.59	36	18	Washington Cty T1	
19	East Machias	Eastport	34.5kv	1/0H, 4/0, 336, 336H, 556H, 559	39.58	13	6.2	L20	
20	East Machias	Dennysville	34.5kv	#2, #4, #6, 336, 336H	24.38	8	6.2	L19	
21	Jonesboro	Machiasport	34.5kv	266 ACSR	9.61	27	0.8	none	
23	East Machias	Cutler	34.5kv	#4 cu, 1/0 ACSR, 336H	6.88	10	0.8	none	
25	Columbia Falls	Jonesport	34.5kv	#4, #6, 1/0, 336, 336H	13.04	8	2.9	none	
26	Whiting	Lubec	34.5kv	333Hendrix AAC	8.91	27	1.6	none	

NORTHERN DIVISION - Projected growth rate 0.3% per year									
80	Milford	Enfield	46kv	4/0, 266, 336, 336H	23.11	28	8.8	L81	
81	Enfield	Milo	46kv	2A Cweld, 266, 336H, 559	18.52	19	11.3	L50	
82	Enfield	Howland	46kv	#2 cu, 1/0, 266	1.27	18	0.8	none	
83	Lincoln	Enfield	46kv	266 ACSR	12.11	36	7.6	W.Enf. Gen	
84	Chester	Medway	46kv	#2, 1/0, 4/0, 266, 336H	25.33	18	8	L86	
85	Chester	Lincoln	46kv	4/0 UG, 266 ACSR	1.87	28	21.7	L87	
86	Chester	Medway	46kv	266 ACSR, 336 AAC	15.79	36	6	none	
87	Chester	Lincoln	46kv	1/0 ACSR, 4/0 UG, 266 ACSR	1.87	19	19	L85	2014 plans
88	Medway	Millinocket	46kv	312, 336, 559	9.16	36	9.2	L89	
89	Medway	Millinocket	46kv	#2, 266, 336, 336H, 559	13.39	18	9.2	L88	
90	Chester	Chester	46kv	336 AAC, 336H AAC	0.81	34	2.2	none	

** Thermal loading is just one factor in determining circuit capability. Voltage drop across the line and line condition must also be taken into account.

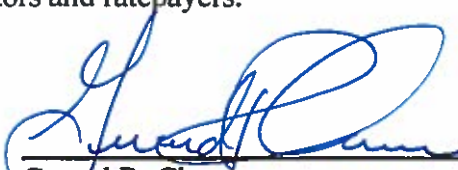
- Loadings based on Transmission Study results which are performed every 5 years. Loadings for years in between will be study loads increased by the projected growth rates.

STATE OF MAINE)
)
COUNTY OF PENOBSCOT)

AFFIDAVIT

NOW, BEFORE ME, the undersigned authority, personally came and appeared, Gerard R. Chasse, who first being duly sworn by me, did depose and say:

1. I am President and Chief Operating Officer of Emera Maine.
2. I have reviewed the Chapter 330 Report with the person(s) responsible for its development and affirm that the utilities have not planned or made any improvements to the transmission system with the intent of giving any existing or proposed generator preferential treatment nor with the intent of providing any ratepayer subsidy in terms of allocating the costs of any such improvements between generators and ratepayers.



Gerard R. Chasse
President & COO

Subscribed and sworn to me this 26th day of March, 2014.



Notary Public

KAREN A. BELL
Notary Public • State of Maine
My Commission Expires July 6, 2019

