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April 1, 2020

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

RE: Emera Maine Transmission Line Rebuild or Relocation Projects, 35-A M.R.S.A. §3132(3) and Minor Transmission Line Construction Projects, 35-A M.R.S.A. §3132 (3-A).

Dear Ms. Huntington:

Pursuant to 35-A M.R.S.A. § 3132(3); (3-A) and Chapters 330 § 8 and 308 § V of the Maine Public Utilities Commission Rules, enclosed is Emera Maine's annual filing of its Transmission Line Rebuild or Relocation Projects (69 kV and above), and its Minor Transmission Line Construction Projects (69 kV and above) ("Chapter 330 Report").

Attached to this letter is a summary list of the projects by category (Attachment A); a map of the service territory depicting the location of all projects (Attachment B); data sheets with detail for all projects (Attachment C); a copy of the Company's most recent depreciation study that includes the useful lives of the poles and conductors that constitute Emera Maine's existing transmission system (Attachment D); and the affidavit required by Chapter 308 § V(6) .

Bangor Hydro District
Emera Maine does not intend to carry out any major or minor Chapter 330 transmission line or transmission substation rebuild, relocation, or new construction projects in the Bangor Hydro District (BHD) in the next five years.

Maine Public District
Emera Maine intends to carry out 10 Chapter 330 transmission line rebuild or relocation projects in the Maine Public District (MPD) in the next five years. Emera Maine does not intend to carry out any transmission substation rebuild/relocation or new transmission line construction projects in the MPD in the next five years.

After working with and receiving feedback from regional stakeholders (such as the Aroostook Energy Association), many of these projects are smaller, phased projects. Emera has determined that targeted rebuilds of specific line sections conducted over longer time periods, rather than larger complete front-to-back line rebuilds, are the preferred line rebuilding method to implement best practice designs.

All rebuild projects listed in this Chapter 330 Report are required to address transmission line condition (i.e. end-of-life, deterioration, weather damage) only. There are no reasonable alternatives to these projects.

Transmission Line Rebuild or Relocation Projects (69 kV and above)
See Title 35-A M.R.S.A.§ 3132(3) [1]

In the MPD, Emera Maine currently has 10 projects it intends to carry out under this category in the next five years. A brief description of each project follows:

1. **Line 1176 Rebuild Phase II (Structure 42 to Border)**
   Description: This Phase II project will rebuild 7.2 ROW miles of Line 1176 from Flo's Inn Substation to structure 3 and structure 42 to structure the US/Canada Border. It will also place a new inline transmission switch at the Ladner Road crossing for improved sectionalizing for maintenance purposes. This project is needed to address poor condition assets approaching end-of-life and to address blowout/NESC clearance concerns and the potential for tree contact from nearby vegetation located along the side of the utility maintained ROW. This Phase II project will widen the line's existing ROW, change the its configuration from horizontal (H-frame structures with wood pole crossarms) to vertical (single wood poles with horizontal line post insulators), replace the smaller 226.8 ACSR wire with higher ampacity 795 ACSR conductors and improve conductor to ground clearance needed to mitigate NESC clearance concerns. An overhead static wire will be placed on top of the new single wood poles for the purpose of providing effective shielding from lightning. This project is planned for 2020.

2. **Line 1176 Rebuild Phase III (Structure 3 to 41)**
   Description: Line 1176 Phase III project will complete the rehabilitation of this critical transmission line by rebuilding the 4.8 mile segment from structure 3 to structure 41. Similar to the Phase I and Phase II efforts, this work is needed to address poor condition assets approaching end-of-life and to address blowout concerns and the potential for tree contact from nearby vegetation. This rebuild project will widen the line's existing ROW, change its current configuration from horizontal (H-frame structures with wood pole crossarms) to vertical (single wood poles with horizontal line post insulators), replace the smaller 226.8 ACSR wire with higher ampacity 795 ACSR conductors and mitigate blowout/NESC clearance concerns. An overhead static wire will be placed on top of the new single wood poles for the purpose of providing effective shielding from lightning. This project is planned for 2021.

3. **Line 6903 Rebuild (Pole 57 to 126)**
   Description: Line 6903 is a 69kV transmission line that connects MPD's Limestone Switching Station to Caribou Substation. This line is part of a key transmission loop for reliability within the MPD system transmission core. Because more power is exported during periods of light load and maximum generation, it can be more heavily loaded than Line 6904. Line 6903 was

[1] Title 35-A M.R.S.A.§ 3132(3) requires each transmission and distribution utility to file an annual report of the "transmission line rebuilding or relocation projects that it intends to carry out during the next five years...that will become, or remain at, 69 kilovolts or more."

originally constructed in 1961 and is now reaching an age at which inspections are finding more widespread pole decay and damage. In the summer and fall of 2018, the Company performed updated qualitative strength and visual condition assessments of wood poles comprising the Line 6903 segment between its Otter Creek Substation and Limestone Switching Station. A ground line internal condition assessment identified 29 wood poles with insufficient shell thickness/strength and another six with marginal strength that will likely transition to "reject" status in one to three years as internal decay continues. A recent visual examination of Line 6903 facilities identified numerous other wood poles with long deep vertical cracks, shell rot, mechanical damage, splintered bases, excessive or large woodpecker holes and wood pole tops damaged by lightning strikes.

This condition focused project will rebuild a 3.8 mile section of Line 6903 with the most rejected wood pole and lightning damage; (poles 57 through 126). Taller and heavier class wood poles with a larger 795 ACSR conductor will be installed across the road to facilitate local telephone and communication utilities joining onto a common pole line at some time in the future. An overhead static wire will be installed on the top of this new line section to provide more effective lightning protection where none exists today and all hollow brown glass post type insulators, which have a high incidence of failure, will be replaced with polymer clamp type insulators. This project is planned for 2020.

4. **Line 6903 Rebuild Loring Tap**

   Description: This project would rebuild the 1.6 mile long Line 6903 tap to the Company's Loring Substation and the Loring Commerce Center (a potential industrial expansion site). This project is needed to remove from service aging transmission assets (poles and crossarms) in poor condition and approaching end-of-life. This rebuild project would place in-service taller and heavier class poles and horizontal polymer clamp-type line post insulators. The existing conductor would be retained for now but because of the taller and heavier class poles a larger gauge wire could be quickly and easily installed should load growth or generation materialize at this industrial site in the future. This project is planned for 2023, a year after the next scheduled full scale strength and condition assessment of Line 6903 tap line wood poles.

5. **Line 6905 Rebuild (Structure 50 to 80)**

   Description: This project would rebuild a four mile long segment of the southern ROW section of Line 6905. According to the most recent comprehensive ground line wood pole strength and condition assessment performed in 2013, slightly more than 60% of all original wood poles comprising the line's southern ROW segment had some level of internal decay, 57% had diminished shell thickness and 31% had reduced strength due to advanced decay. Follow-up treatment of southern section ROW wood poles with internal decay discovered that seven had progressed to the "reject" stage and require replacement. This level and severity of decay is expected to increase as these aging wood poles placed in service in 1964 continue to age. This project is planned for 2024 and begins the rebuild of this 41 mile long transmission line by addressing a 4 mile segment in the deteriorating condition.

6. **Line 69053 Rebuild Van Buren Light & Power Tap**

   Description: Line 69053 is a 1.2 mile long transmission tap line that provides 69kV power flow to a substation owned by Van Buren Light & Power, a consumer owned wholesale electricity provider serving residents of the Van Buren community. Comprehensive ground line wood pole strength and condition assessments of this line in 2018 determined that half of the Line 69053 wood poles had some degree of internal decay and that 10% had external shell rot. This level of decay is expected to increase in future further increasing the likelihood of failure. This project would rebuild this tap line using taller and heavier class wood poles, horizontal polymer line post insulators while retaining the existing 3/0 ACSR conductor. This project is planned for construction in 2022.

7. **Line 69201 Rebuild (Mars Hill Tap ROW)**

   Description: Line 69021 is a radial transmission line that provides 69kV transmission power flow to a Company owned distribution substation in the community of Mars Hill. Line 69201 is comprised of a 1.06 mile long segment located alongside US Route 1 and a 1.60 mile long section that is located in a sometimes narrow and sometimes swampy utility maintained right-of-way (ROW). According to the most recent comprehensive ground line wood pole strength and condition assessment completed in 2019 four of the 24 wood poles located in ROW were rejected due to insufficient shell thickness/strength and 33% were determined to have some level of internal decay. In addition to these condition and strength issues four of these wood poles were located in an expansive swamp for which access for condition assessment and maintenance is extremely difficult. This conceptual project would rebuild the ROW sections of Line 69201 moving it to a new dry ground ROW that will enable the Company to better access these important transmission assets for condition assessment, maintenance and repair purposes. The new ROW section will be built using taller and heavier class wood poles with horizontal polymer line post insulators. The light duty 1/0 Copperweld now in use will be replaced with 336.4 ACSR gauge wire. This project will also remove from service brown glass post type insulators that have a high incidence of failure in the Company's Maine Public District Service Region. This project is planned for construction in 2022.

8. **Line 6915 Construction (Flo's Inn to North Presque Isle Substation)**

   Description: This project would rebuild the segment of Line 6915 from Flo's Inn to the Company's North Presque Isle Substation, a distance of 3.0 miles, removing from service wood poles and wood pole crossarms in deteriorated condition and substituting 795 ACSR wire for the 336.4 ACSR in use today. Because the design temperature of the 336.4 ACSR wire is 120 degrees F this transmission line is severely sag limited during the summer months. This project would address this short coming while also improving the overall reliability of the line by removing from service deteriorated plant that could fail and result in an outage for customers. This project is planned for construction in 2024.

9. **Line 6930 Rebuild (Dow Siding Road to Maysville Siding Road)**

Description: Line 6930 is a 69kV transmission line that connects the MPD Caribou Stations to its Ashland Substation. This transmission line segment rebuild project is planned for 2021 and it will address the three mile segment from Dow Siding Road to Maysville Siding Road through the removal from service of 1950s era wood poles with high rates of internal decay and wood pole crossarms in deteriorated condition. Because the Company is planning to replace the existing 336 ACSR wire in this targeted line segment with a higher ampacity alternative the overall impedance of Line 6930 will decrease, which will benefit voltage regulation in the Ashland Region.

10. **Line 6950 Rebuild (Westfield to Mars Hill Switching Station)**

Description: This project would rebuild the Line 6950 segment from the Company's Westfield Substation to its Mars Hill Switching Station. This line segment is 3.4 miles long and comprised of 30 H-frame wood pole structures with wood pole crossarms and 336.4 ACSR wire. This line segment was originally constructed in 1964. Slightly less than 60% of the wood poles comprising this line segment have internal decay and 26% of these have reduced shell thickness/strength because of rot discovered in 2011. The level and severity of internal and external decay is expected to increase as these wood poles age and will be reassessed in 2021, a year prior to its proposed rebuild. Line 6950 runs alongside and operates in parallel with Line 6940. Together, these lines provide a strong and reliable 69kV backbone transmission power flow source for more than 5,000 MPD customers and the thousands more served indirectly by Eastern Maine Electric Cooperative (EMEC) and Houlton Water Company (HWC). This project is planned for 2024.

Minor Transmission Line Construction Projects (69 kV and above)

See Title 35-A M.R.S.A. § 3132(3-A)[2]

Emera Maine does not intend to carry out any new transmission line construction projects in the next five years.

Notable 2020 Chapter Report Inclusions & Removals

Notable inclusions, changes and removals in this year's Chapter 330 Report compared to the Company's 2019 Report include: (1) while permitting and design of Line 1176 Phase I rebuild project was essentially completed in 2019 construction associated with this project was combined with planned 2020 Phase 2 work to form a single larger project; (2) one year delay for rebuild project Line 6930 Dow to Maysville Siding to allow for gathering of additional more qualitative asset condition assessment data; and (3) the

[2] Title 35-A M.R.S.A. § 3132(3-A), requires transmission and distribution utilities to separately report minor transmission line construction projects. A minor transmission line construction project is defined as "…a transmission line construction project, the cost of which does not exceed 25% of the utility's current annual transmission property depreciation charge." For 2019, 25% of Emera Maine's annual transmission property depreciation charge is $3,672,811.

inclusion of two new conceptual projects that will rebuild the 69kV tap to Van Buren Light and Power and the Line 69201 ROW segments to the Company's Mars Hill Substation.

In addition to the aforementioned transmission line projects, the Company is currently relocating its Caribou Switching Station Control House from its current location inside the Merlin Generating Station in Caribou to a new Company secured location next to the Switching Station. This change was necessary because of the generating stations dilapidated condition and the desire of the owner for us to relocate this facility off-premise. This project, which does nothing to modify or enhance the capacity of the existing Caribou Switching Station, is estimated to be $850K direct or $1.4M loaded and has an expected in-service date of June 1, 2020.

We look forward to meeting with you in April to review the projects in greater detail. In the meantime, please contact Dave Norman at (207) 973-2708, Steve Sloan at (207) 973-2568, Kyle Ravin (207) 973-2707 or me at (207) 973-2847 if you have any questions about this filing.

Very truly yours,

/s/ Tim Pease
Tim Pease
Vice President, Legal and Regulatory Affairs

Enclosures

Attachment A

Project Progress Update from 2019 Filing

Line 6901 Construction – Fort Fairfield Tap (***In-service)
Line 6913 Construction – Presque Isle Switching Station to Pole 160 (***In-service)

Transmission Line Rebuild or Relocation Projects (69 kV and above)

Line 1176 Rebuild Phase II (Flo's Inn to Structure 3, Structure 42 to Border)
Line 1176 Rebuild Phase III (Structure 3 to 41)
Line 6903 Rebuild (Pole 57 to 126) (***Under Construction)
Line 6903 Loring Tap Rebuild
Line 69053 Rebuild (Van Buren Tap)
Line 6905 Rebuild (Structure 50 to 80)
Line 6915 Rebuild (Flo's Inn to North Presque Isle Substation)
Line 69201 Rebuild (Mars Hill Tap ROW)
Line 6930 Rebuild (Dow Siding Road to Maysville Siding Road)
Line 6950 Rebuild (Westfield to Mars Hill Switching Station)

Minor Transmission Line Construction Projects (69kV and above)

Attachment B