

Fred James

Chief Regulatory Officer

Phone: 604-623-4046

Fax: 604-623-4407

bchydroregulatorygroup@bchydro.com

November 17, 2020

Mr. Claude Doucet
Canadian Radio-television and Telecommunications Commission (**CRTC**)
Ottawa, ON K1A 0N2

Dear Mr. Doucet:

**RE: Notice Number: Tariff Application 0555
TELUS Communications Inc. (TELUS)
8740-T66-202006634
Destandardization of Analogue Private Line Services & Dedicated Loop
Service
British Columbia Hydro and Power Authority (BC Hydro)
Intervener Registration**

1. TELUS filed Tariff Notice No. 555 with the CRTC on October 8, 2020. BC Hydro wishes to be considered as an intervener in the proceeding and provides the following comments.

A. Background

2. In its tariff notice, TELUS has proposed the destandardization of Analog Private Line (**APL**) services such that new installations, moves, additions and changes would no longer be available to existing customers, including existing end customers of resellers.
3. BC Hydro has approximately 179 APL services that would be affected by this proposal. These APL services, which have been installed over several decades, provide Teleprotection, Supervisory Control and Data Acquisition (**SCADA**), telemetry, alarm and Very High Frequency (**VHF**) mobile radio backhaul functions to BC Hydro facilities throughout the province. The BC Hydro facilities served are typically substations in remote locations that have few other telecommunications options. These APL services are critical to the provision of functions that ensure the reliable and safe operation of the power system at these facilities and on the transmission lines between them.
4. In addition to BC Hydro's use, third parties who interconnect to the power system, such as Independent Power Producers and Transmission Voltage Load Customers, also make use of the TELUS APL services affected by this proposal. These circuits also carry SCADA and Teleprotection signals from the third-party facilities into

November 17, 2020
Mr. Claude Doucet
Canadian Radio-television and Telecommunications Commission
(CRTC)
Notice Number: Tariff Application 0555
TELUS Communications Inc. (TELUS)
8740-T66-202006634
Destandardization of Analogue Private Line Services & Dedicated Loop Service

BC Hydro's system, and these power system functions are required to ensure the continued safety and reliability of the interconnections.

B. BC Hydro's Comments

5. BC Hydro neither supports nor opposes the present application. However, the cessation of new installations, moves, additions and changes may be a step towards the eventual withdrawal of the APL services used by BC Hydro and third parties who interconnect to the power system; our comments are made with this understanding.
6. BC Hydro understands that this application will neither change nor limit TELUS' commitment to meet service level agreements and obligations to repair faulty circuits.
7. BC Hydro notes that in paragraph 10 of its tariff notice, TELUS states: "For some customers with more complex requirements, TELUS has been working with them on developing alternate solutions that meet their specific needs." BC Hydro understands this work is being done in the context of TELUS' desire to withdraw the service.
8. BC Hydro is a customer with extremely complex requirements, as there are many affected APL circuits, the service endpoints are geographically dispersed across the province, and the performance requirements of replacement services are very stringent. Any replacement service would need to meet strict latency, jitter¹ and availability metrics to satisfy the performance requirements of Teleprotection and other power system functions.²
9. BC Hydro is presently reviewing options for a future transition of APL services to replacement services with TELUS; however, any transition would be complex, and it will require many years to identify, validate and install solutions in a manner that minimizes interruptions to the operation of the power system.

¹ Latency is a measure of how long it takes a signal to propagate from one end of the circuit to the other. Jitter is a measure of how a circuit's latency varies over time. An ideal circuit for Teleprotection functions has a low latency and zero jitter. Other services, like SCADA, can tolerate circuits with higher latency and jitter.

² BC Hydro currently relies heavily on TELUS analog lines to bring SCADA visibility and control to our control centers from BC Hydro facilities as well as SCADA visibility from Independent Power Producer suppliers and transmission voltage customers. Loss or limitation of the TELUS analog services could lead to reliability impacts without an adequate solution(s) to monitor BC Hydro's facilities and those of third-parties. In addition, the loss of these services may also result in a risk of non-compliance with various Mandatory Reliability Standards.

November 17, 2020
Mr. Claude Doucet
Canadian Radio-television and Telecommunications Commission
(CRTC)
Notice Number: Tariff Application 0555
TELUS Communications Inc. (TELUS)
8740-T66-202006634
Destandardization of Analogue Private Line Services & Dedicated Loop Service

10. BC Hydro has concerns about the suitability of the proposed alternative solutions identified by TELUS. TELUS has proposed T1 and E-line services³ as potential replacements. BC Hydro believes that a T1 data service is most likely to provide the latency and jitter performance required; however, due to its age and the general transition towards packet-based services in the telecommunications industry, this legacy service is also likely to be subject to an upcoming destandardization request. BC Hydro is concerned that a destandardization of T1 services would cause a second costly migration effort in the medium term.
11. BC Hydro has concerns regarding the potential cost impacts and the responsibility for costs associated with the migration to replacement services. BC Hydro is concerned with respect to both the one-time migration costs, as well as the likelihood that services offered as a replacement will have higher ongoing costs compared to the present APL services. For any future migration, there would be one-time costs borne by the customer to connect their equipment to a new service, as well as to the carrier to provide the replacement service at the customer's location. BC Hydro expects that any carrier costs associated with providing replacement services would be borne by the carrier, as the migration is being done at the carrier's request to facilitate the eventual withdrawal of the APL services.

C. Conclusion

12. BC Hydro neither supports nor opposes the present TELUS application to destandardize APL Services. However, the cessation of new installations, moves, additions and changes may be a step towards the eventual withdrawal of the APL services used by BC Hydro and third parties who interconnect to the power system. BC Hydro has concerns regarding the availability of suitable and cost-effective replacement services, as well as the potential for a costly and complex migration. In addition, appropriate lead time would be required to plan and implement any replacement services.

³ T1 is a Telecom industry standard service to carry a bundle of 24 analog signals. It has been in-service since the 1960's, and this format is used on the BC Hydro telecom network. T1 features constant delay and zero jitter, and because we have standard technology to adapt analog equipment to a T1, it is ideal for carrying Teleprotection signals.

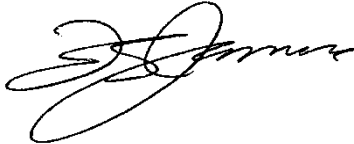
E-line is an Ethernet packet-based point-to-point connection, and is a new service offered by TELUS. Since E-line is packet-based, analog-based equipment would have to be adapted to make use of packets. Packets experience variable delays through a network, which may make E-line unsuitable for Teleprotection functions. In addition, issues regarding ownership of the required modem make it undesirable to place in a BC Hydro owned substation.

November 17, 2020
Mr. Claude Doucet
Canadian Radio-television and Telecommunications Commission
(CRTC)
Notice Number: Tariff Application 0555
TELUS Communications Inc. (TELUS)
8740-T66-202006634
Destandardization of Analogue Private Line Services & Dedicated Loop Service

Page 4 of 4

13. For further information, please contact the undersigned.

Yours sincerely,



Fred James
Chief Regulatory Officer

bh/ma

Copy to: **TELUS**
Attention: Carol Ho
Carol.ho@telus.com