



**AltaLink Management Ltd.  
2022-2023 General Tariff Application and  
2020 Direct Assigned Capital Deferral Account  
Reconciliation Application**

**KainaiLink Limited Partnership  
2022-2023 General Tariff Application**

**PiikaniLink Limited Partnership  
2022-2023 General Tariff Application**

**Corrigenda to Decision 26509-D01-2022**

**February 11, 2022**

**Alberta Utilities Commission**

Decision 26509-D01-2022 (Corrigenda)

AltaLink Management Ltd.

2022-2023 General Tariff Application and

2020 Direct Assigned Capital Deferral Account Reconciliation Application

Application 26509-A001

KainaiLink Limited Partnership

2022-2023 General Tariff Application

Application 26509-A002

PiikaniLink Limited Partnership

2022-2023 General Tariff Application

Application 26509-A003

Proceeding 26509

February 11 2022

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7. The second full paragraph in Appendix 5 of the decision stated:

The Commission finds that the directions have been satisfied. In the event of any difference between the directions in this section and those in the main body of the decisions referenced, the wording in the main body of those decisions shall prevail.

8. The second full paragraph in Appendix 5 should read:

With one exception (Direction 1(iv) from Decision 25870-D01-2020), the Commission finds that the directions have been satisfied. In the event of any difference between the directions in this section and those in the main body of the decisions referenced, the wording in the main body of those decisions shall prevail.

9. Section 48.3 of Rule 001: *Rules of Practice*, indicates that “The Commission may issue a Corrigenda decision to correct an error in a decision or order that is not in the nature of a typographical, spelling, calculation error or other similar type of error.”<sup>3</sup> Accordingly, this corrigenda decision has been issued to correct these errors.

10. Decision 26509-D01-2022 has been amended to include the correct wording for paragraph 32 and Appendix 5, and is attached to this corrigenda.

Dated on February 11, 2022.

**Alberta Utilities Commission**

*(original signed by)*

Kristi Sebalj  
Panel Chair

*(original signed by)*

Vera Slawinski  
Commission Member

*(original signed by)*

Vincent Kostaskey  
Acting Commission Member

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<sup>3</sup> Rule 001, as effective before May 17, 2021, applies because Proceeding 26509 started on April 30, 2021.



**AltaLink Management Ltd.  
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2020 Direct Assigned Capital Deferral Account  
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**January 19, 2022**

**Alberta Utilities Commission**

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The Commission may, within 30 days of the date of this decision and without notice, correct typographical, spelling and calculation errors and other similar types of errors and post the corrected decision on its website.

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## **1 Decision summary**

1. This decision provides the Alberta Utilities Commission’s determinations regarding AltaLink Management Ltd.’s (AltaLink) 2022 and 2023 general tariff application (GTA), AltaLink’s 2020 direct assigned capital deferral account (DACDA) reconciliation application, and the 2022 and 2023 GTAs filed by AltaLink on behalf of PiikaniLink Limited Partnership (PiikaniLink) and KainaiLink Limited Partnership (KainaiLink).

2. For AltaLink’s 2022 and 2023 GTA, the Commission has made a number of directions that reduce AltaLink’s applied-for revenue requirements. AltaLink, must submit a compliance filing with the Commission to reflect the findings, conclusions and directions in this decision.

3. The Commission’s directions reduce the amount of AltaLink’s applied-for capital expenditures for capital replacement and upgrade (CRU) programs and information technology (IT) programs by approximately \$31 million and \$43 million, and direct assigned capital programs, by approximately \$87 million and \$126 million, in 2022 and 2023, respectively. The Commission did not approve AltaLink’s proposed tariff refund of accumulated depreciation in the amount of \$60 million in each of 2022 and 2023 and has also directed AltaLink to remove \$96 million from its opening 2022 net salvage reserve account. The Commission’s directions also reduce applied-for base pay escalations and certain internal labour expenditure forecasts.

4. With respect to the PiikaniLink and KainaiLink 2022-2023 GTAs, the Commission directed PiikaniLink and KainaiLink to adjust their depreciation parameters to align with those approved for AltaLink in this decision and to include incremental audit and hearing costs in its revenue requirements consistent with the Alberta Court of Appeal’s judgment in *AltaLink Management Ltd. v Alberta (Utilities Commission)*.<sup>1</sup>

## **2 Introduction and background**

5. AltaLink is a transmission facility owner (TFO) that provides regulated electric transmission service in Alberta. AltaLink recovers the costs of providing electric transmission service through its transmission tariff, which must be approved by the Commission. Once approved, AltaLink recovers its tariff amounts from Alberta ratepayers through the Alberta Electric System Operator (AESO), which collects the costs of transmission services provided to Alberta ratepayers from the ratepayers’ respective distribution facility owners, and from customers directly connected to the transmission system.

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<sup>1</sup> *AltaLink Management Ltd. v Alberta (Utilities Commission)*, 2021 ABCA 342.

6. AltaLink made the following four applications seeking various approvals from the Commission in each of them:

- (i) the AltaLink 2022 and 2023 GTA
- (ii) the AltaLink 2020 DACDA reconciliation application
- (iii) the PiikaniLink 2022 and 2023 GTA
- (iv) the KainaiLink 2022 and 2023 GTA

7. Each of these applications and the requests that they contain are discussed in the paragraphs that follow.

8. In its 2022-2023 GTA, AltaLink is seeking Commission approval of the amount of revenue it requires to provide safe and reliable transmission service for 2022 and 2023. AltaLink's applied-for revenue requirement is comprised of all costs forecast to be incurred by AltaLink, including operating costs and a return of, and a fair return on, its investment in its transmission assets necessary to provide regulated electric transmission service to customers.

9. AltaLink requested Commission approval of the following:

- Revenue requirements of \$877.9 million for 2022 and \$895.5 million for 2023.<sup>2</sup>
- Transmission tariffs of \$811.5 million in 2022 and \$835.5 million in 2023 when the proposed tariff relief measures are taken into account.<sup>3</sup>
- The continued use of deferral and reserve accounts and other aspects of the proposed tariff.<sup>4</sup>
- Updated depreciation parameters as supported by a depreciation study.
- Its compliance with past Commissions directions.

10. In its 2020 DACDA reconciliation application, AltaLink filed for approval to reconcile its DACDA account for the year 2020.

11. When examining AltaLink's 2020 DACDA reconciliation application, the Commission assesses the prudence of AltaLink's actual capital costs incurred to construct transmission projects undertaken in response to mandatory directions received from the AESO. AltaLink's forecast capital costs for these projects were already approved in prior regulatory proceedings.

12. AltaLink is allowed to recover capital costs through its tariff only if the capital costs are prudently incurred. If there is a difference between AltaLink's forecast capital costs and the actual capital costs that AltaLink incurred, then any difference in the amount that AltaLink has

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<sup>2</sup> Exhibit 26509-X0003.01, MFR [minimum filing requirement] schedules, Schedule 3-1.

<sup>3</sup> Exhibit 26509-X0003.01, MFR schedules, Schedule 3-1.

<sup>4</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 20, paragraph 9.

been paid by the AESO and the amount that AltaLink should have been paid by the AESO is either paid to, or recovered from, AltaLink, as required.

13. In its 2020 DACDA reconciliation application, AltaLink requested:

- A determination of reasonable project costs for direct assigned capital projects completed in 2020, and an order disposing of the associated DACDA balances pertaining to direct assigned capital projects completed in 2020.
- Approval of the 2020 balances for other deferral accounts.<sup>5</sup>
- Approval of a revenue true-up for 2020 from AltaLink's 2019-2021 GTA.<sup>6</sup>

14. If approved, these requested amounts would result in AltaLink recovering \$1.3 million associated with the 2020 DACDA reconciliation, refunding \$0.9 million associated with other deferral accounts, and a 2020 revenue true-up in relation to AltaLink's 2019-2021 GTA, resulting in a one-time charge to the AESO in the amount of \$0.4 million.<sup>7</sup>

15. AltaLink, in its capacity as General Partner of AltaLink Limited Partnership, is also the general partner of PiikaniLink and of KainaiLink. PiikaniLink and KainaiLink were formed to carry on business as the TFOs for PiikaniLink and KainaiLink transmission assets, respectively. AltaLink operates and maintains the transmission assets of PiikaniLink and KainaiLink.

16. The PiikaniLink and KainaiLink applications sought approval of their respective 2022 and 2023 revenue requirements. Both applications were prepared by AltaLink using approved methodologies consistent with previous Commission decisions.<sup>8</sup> AltaLink requested Commission approval of:

- Revenue requirements of \$4.94 million in 2022 and \$4.84 million in 2023 for PiikaniLink.<sup>9</sup>
- Revenue requirements of \$3.17 million in 2022 and \$3.11 million in 2023 for KainaiLink.<sup>10</sup>
- The continued use of deferral and reserve accounts for both PiikaniLink and KainaiLink.

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<sup>5</sup> This includes long-term debt, taxes other than income tax and annual structure payments.

<sup>6</sup> Proceeding 23848, AltaLink 2019-2021 GTA, Application 23848-A001, August 23, 2018.

<sup>7</sup> Exhibit 26509-X0052, AML 2020 DACDA reconciliation application, PDF page 6, paragraphs 4-5.

<sup>8</sup> See Decision 22612-D01-2018: AltaLink Management Ltd., AltaLink L.P. Transfer of Specific Transmission Assets to PiikaniLink L.P. and KainaiLink L.P. and the Associated 2017-2018 General Tariff Applications, Proceeding 22612, Applications 22612-A001, 22612-A002, 22612-A003, 22612-A004, November 13, 2018, and Decision 23848-D01-2020: AltaLink Management Ltd., 2019-2021 General Tariff Application, Negotiated Settlement Agreement and Excluded Matters, Proceeding 23848, April 16, 2020.

<sup>9</sup> Exhibit 26509-X0093, PLP 2022-2023 GTA, PDF page 6, paragraph 3.

<sup>10</sup> Exhibit 26509-X0089, KLP 2022-2023 GTA, PDF page 6, paragraph 2.

17. This is the Commission's decision on each of AltaLink's 2022-2023 GTA, AltaLink's 2020 DACDA reconciliation application, PiikaniLink's 2022-2023 GTA, and KainaiLink's 2022-2023 GTA.<sup>11</sup>

18. In reaching the determinations set out in this decision, the Commission has considered all relevant materials comprising the record of this proceeding, including the evidence, argument and reply argument and supplements, provided by each party. Accordingly, references in this decision to specific parts of the record are intended to assist the reader in understanding the Commission's reasoning relating to a particular matter and should not be taken as an indication that the Commission did not consider all relevant portions of the record with respect to that matter.

19. This decision addresses the contentious cost items forecast in the applications, including updates, and any matters that the Commission has otherwise determined are required to be specifically addressed. If a matter is not specifically addressed in this decision, it is because the Commission finds the applied-for costs associated with the matter to be reasonable and the applicant's request is therefore approved as filed. All directions in this decision are subject to all findings and other directions made elsewhere in this decision.

20. The Commission's determinations in this decision with respect to AltaLink's forecast capital expenditures do not relieve AltaLink from obtaining any other required authorization, permit, licence or approval that may be required to carry out the projects identified in its application.

21. The Commission requires each of AltaLink, PiikaniLink and KainaiLink to submit a compliance filing that reflects the findings, conclusions and directions of the Commission in this decision on or before February 18, 2022. In their compliance filings, each of AltaLink, PiikaniLink and KainaiLink are required to include a detailed reconciliation of the revenue requirements for each of the 2022 and 2023 test years to reflect this decision.

### **3 Background to the application process**

22. On April 30, 2021, AltaLink filed the applications and requested that each application be considered under the Commission's mediated settlement process.<sup>12</sup> The Commission issued a notice of application that required interested parties to submit, within two weeks, a statement of intent to participate (SIP). Five parties filed a SIP: the Consumers' Coalition of Alberta (CCA), the Office of the Utilities Consumer Advocate (UCA), the Industrial Power Consumers Association of Alberta (IPCAA), the Alberta Direct Connect Consumers Association (ADC) and the AESO.<sup>13</sup>

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<sup>11</sup> These were filed as applications 26509-A001, 26509-A002 and 26509-A003 in Proceeding 26509.

<sup>12</sup> Exhibit 26509-X0001, AML cover letter.

<sup>13</sup> Exhibits 26509-X0099 to 26509-X0104.

23. On May 19, 2021, the Commission directed parties to proceed to mediation in an effort to reach a settlement of the applications. The Commission directed the mediation to commence on May 31, 2021, and to end no later than July 30, 2021.<sup>14</sup>

24. On August 3, 2021, the Commission was informed that a mediated settlement had not been reached. The Commission proceeded to hear the applications through a hearing process that included virtual oral argument and reply argument. Only AltaLink, the CCA and the UCA participated in the virtual oral argument and reply argument. The Commission closed the record for the proceeding on October 21, 2021, when a supplemental undertaking was filed by the CCA.

25. A timeline of significant steps in this proceeding is attached as [Appendix 4](#).

#### 4 AltaLink 2022-2023 GTA

26. The following three tables illustrate the breakdown of AltaLink's 2022-2023 applied-for revenue requirements, applied-for tariff amounts, and capital structure, which were part of AltaLink's application update.<sup>15</sup>

**Table 1. AltaLink applied-for revenue requirement for 2022 and 2023**

	2019 Actual	2020 Actual	2021 Management update (MU)	2022 Forecast	2023 Forecast
<b>Revenue requirement</b>	<b>(\$ million)</b>				
Operating Expense	162.9	158.7	164.3	167.0	170.4
Return - Equity	240.4	236.7	229.4	238.8	241.7
Return - Debt	184.5	183.5	183.0	183.8	185.3
Depreciation	292.0	289.7	291.8	296.9	306.2
Revenue Offsets	(7.6)	(8.6)	(9.1)	(8.5)	(8.2)
Income Tax	(0.0)	0.0	0.0	0.0	(0.0)
<b>Total revenue requirement</b>	<b>872.2</b>	<b>859.9</b>	<b>859.5</b>	<b>877.9</b>	<b>895.5</b>

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, Table 1.1.4-1, PDF page 24.

**Table 2. AltaLink applied-for transmission tariff for 2022 and 2023**

	2019 Actual	2020 Actual	2021 MU	2022 Forecast	2023 Forecast
<b>Refunds</b>	<b>(\$ million)</b>				
Settlement SIR [self-insurance reserve] Balance and Other Customer Refund	(4.3)	-	-	(2.7)	-
Settlement of Hearing Costs	-	-	-	(3.8)	-
Refund Depreciation Tariff	-	-	(80.0)	(60.0)	(60.0)
Refund Future Income Tax Tariff Relief	-	-	(150.0)	-	-
Refund Depreciation Surplus	-	-	(10.4)	-	-
<b>Transmission tariff</b>	<b>867.8</b>	<b>859.9</b>	<b>619.1</b>	<b>811.5</b>	<b>835.5</b>

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, Table 1.1.4-1, PDF page 24.

<sup>14</sup> Mediation settlement process granted in Exhibit 26509-X0105 and mediation settlement process schedule amended on May 25, 2021, in Exhibit 26509-X0108.

<sup>15</sup> AltaLink's 2022-2023 GTA update occurred on September 3, 2021, in Exhibit 26509-X0002.01

**Table 3. AltaLink capital structure for 2022 and 2023**

	2019 Actual	2020 Actual	2021 MU	2022 Forecast	2023 Forecast
<b>Capital structure</b>	(%)				
Equity Ratio	37	37	37	37	37
Debt Ratio	63	63	63	63	63
Subordinated Debt Ratio	0	0	0	0	0
Total Capital	100	100	100	100	100
Return on Equity	8.73	8.63	8.27	8.50	8.50
<b>Funds from operations /debt</b>	<b>11.0</b>	<b>11.0</b>	<b>10.6</b>	<b>10.8</b>	<b>10.9</b>

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, Table 1.1.4-1, PDF page 24.

#### 4.1 Efficiency and information requirements

27. The Commission has recently put a strong emphasis on increasing regulatory efficiency. It has implemented a number of changes to its application review processes, including its GTA review process. Examples of the Commission’s efforts in the current proceeding include the direction to attempt to achieve a mediated settlement of the issues, the use of an issues list, limiting parties to one round of information requests (IRs), undertaking a fully written evidentiary process, and the use of oral argument and reply argument.<sup>16</sup> The Commission emphasizes, however, that regulatory efficiency is a shared responsibility and the ability to achieve a more streamlined regulatory process requires effort and commitment by the Commission, applicants and interveners.

28. For certain portions of AltaLink’s application, the record was sufficient to support AltaLink’s applied-for amount.<sup>17</sup> However, in a number of sections of this decision, the Commission has identified deficiencies in the information on the record required to support AltaLink’s requests. The Commission also observed areas where the information was ultimately provided, but not without significant process.

29. In those cases where evidentiary deficiencies led to a denial by the Commission of AltaLink’s request, or to a reduction in the applied-for capital expenditure forecast or revenue requirement amounts, the Commission has described, as specifically as possible, what better information AltaLink must provide should it seek approval of costs for similar projects or programs in future GTAs. The Commission’s intention is **not** to encourage AltaLink to file a greater volume of information. Rather, it is to ensure that future proceedings are more efficient, which requires a record that contains the specific and relevant information necessary for the Commission and parties to test the applied-for revenue requirement amounts and for the Commission to be able to more efficiently and effectively adjudicate AltaLink’s GTAs.

<sup>16</sup> Exhibit 26509-X0105, Exhibit 26509-X0108, Exhibit 26509-X0181, Exhibit 26509-X0190, Exhibit 26509-X0207, Exhibit 26509-X0290 and Exhibit 26509-X0328.

<sup>17</sup> For example, in support of its four WMP sub-programs, AltaLink provided specific and relevant variance analyses that compared its actual 2019-2021 capital additions to approved amounts. Minimal process was required to test the information.

## 4.2 The issues

30. For ease of reference, the Commission has aggregated the matters to be addressed in this decision by issue as follows:

- (i) Has AltaLink complied with previous Commission directions, and should any other relief from ongoing reporting of Commission directions be granted?
- (ii) Are AltaLink's 2022 and 2023 escalation rates for its non-union, union, and executive employees reasonable?
- (iii) Are other components of AltaLink's compensation, including short-term incentive pay (STIP), severance and safety bonuses, reasonable?
- (iv) Has AltaLink reasonably forecast its operations and maintenance (O&M) expenses, including the number of full-time equivalent (FTE) employees, as well as its insurance premiums?
- (v) Is AltaLink's 2022 opening rate base reasonable?
- (vi) Are AltaLink's 2022 and 2023 capital expenditures for its CRU program, Wildfire Mitigation Plan (WMP) and IT program reasonable? Should a capital incentive mechanism be considered?
- (vii) Has AltaLink reasonably forecast its 2022 and 2023 capital expenditures for its direct assigned capital projects, and should Commission approval be granted for AltaLink to migrate toward a flexible engineering, procurement and construction management (EPCm) model?
- (viii) Should AltaLink's requests related to depreciation be approved?
- (ix) Is AltaLink's forecast necessary working capital reasonable?
- (x) What is a reasonable forecast of interest expense for AltaLink's long-term debt?
- (xi) Should AltaLink's special facilities charge be approved?
- (xii) Should AltaLink's termination of its service agreement with TransAlta be approved?

31. The remainder of this decision is structured to address these issues, and any related issues that arise under them.

## 5 Issue 1: Has AltaLink complied with previous Commission directions, and should any other relief from ongoing reporting of Commission directions be granted?

32. In its application, AltaLink responded to 34 outstanding Commission directions identified in [Appendix 5](#) of this decision. The Commission finds that AltaLink has complied with 33 of the 34 directions, and that no further action is required by AltaLink with respect to these 33

directions. The Commission, however, has found that AltaLink has partially complied with the remaining direction.<sup>18</sup>

33. Of the 34 directions, AltaLink requested relief from any future on-going reporting requirements for the following three directions because it had either complied with the requirements of the direction, or because the direction was no longer applicable:

- Direction at paragraph 36 from Decision 22556-D01-2017;<sup>19</sup>
- Direction 2 from Decision 25870-D01-2020;<sup>20</sup> and
- Direction 38 from Decision 2013-407.<sup>21</sup>

34. The Commission considers that AltaLink has satisfied the requirements of these three directions and has determined that AltaLink is permitted to remove them from future GTAs.

## **6 Issue 2: Are AltaLink's 2022 and 2023 escalation rates for its non-union, union, and executive employees reasonable?**

35. In this test period, AltaLink focused on target total direct compensation (TTDC) to measure whether its employees are reasonably compensated.<sup>22</sup> TTDC is the sum of base pay, target STIP,<sup>23</sup> the expected value of any long-term incentive pay (LTIP),<sup>24</sup> other non-guaranteed cash awards, and the value of any major perquisites.<sup>25</sup>

36. AltaLink filed evidence from ATB Financial, the Government of Alberta and the Royal Bank of Canada, showing that Alberta's economy is forecast to rebound in 2021, and will continue to recover in 2022 and 2023 from the effects of the COVID-19 pandemic and the 2020 collapse in oil prices.<sup>26</sup>

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<sup>18</sup> For the reasons set out in Section 12.3 of this decision the Commission has found that AltaLink has not complied with Direction 1(iv) of Decision 25870-D01-2020 for its net salvage costs connected with its CRU projects and terminal asset retirements.

<sup>19</sup> Decision 22556-D01-2017: AltaLink Management Ltd. and the City of Medicine Hat, Sale and Transfer of a Portion of Transmission Line 675L Assets, Proceeding 22556, Applications 22556-A001 to 22556-A003, August 9, 2017.

<sup>20</sup> Decision 25870-D01-2020: AltaLink Management Ltd., Stage 2 Review and Variance of Decision 23848-D01-2020, AltaLink Management Ltd. 2019-2021 General Tariff Application, Proceeding 25870, November 19, 2020.

<sup>21</sup> Decision 2013-407: AltaLink Management Ltd., 2013-2014 General Tariff Application, Proceeding 2044, Application 1608711-1, November 12, 2013.

<sup>22</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 55-56, paragraphs 179-184.

<sup>23</sup> In Exhibit 26509-X0045, Appendix 20 (Abbreviations and Glossary), PDF page 13, AltaLink defines STIP as short-term incentive pay.

<sup>24</sup> In Exhibit 26509-X0045, AML 2022-2023 GTA - Appendix 20 (Abbreviations and Glossary), PDF page 9, AltaLink defines LTIP as long-term incentive pay.

<sup>25</sup> Exhibit 26509-X0005, Appendix 02 (Resourcing, Compensation and Pension), PDF page 250.

<sup>26</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 54-55, paragraphs 174-179.

37. For this reason, AltaLink stated that it must provide its employees with market average TTDC to attract and retain qualified and high-performing employees after the expected rebound in Alberta’s economy.<sup>27</sup>

38. To achieve market average TTDC, AltaLink requested the following percentage increases to its employee base pay, while keeping all other components of TTDC unchanged in this test period.<sup>28</sup> This is summarized in the following table:

**Table 4. AltaLink’s requested base pay increases for 2022-2023**

Employee group	2022 Forecast	2023 Forecast
	(%)	
Non-union below-executive	2.95	2.95
Non-union executive	5.15	5.15
Union	2.20	2.20

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, Table 1.8.4-1, PDF page 47, paragraph 129.

## 6.1 Applied-for base pay increases for non-union employee compensation

### 6.1.1 Market position for non-union employee compensation in 2021

39. AltaLink estimated that in 2021, the TTDC for its non-union below-executive and non-union executive employees will be 0.7 per cent and 10.2 per cent below market, respectively.<sup>29</sup>

40. AltaLink retained Mercer (Canada) Limited (Mercer) to provide a compensation review and base salary projections for the 2022-2023 period. Mercer identified a portion of this shortfall in its 2020 non-union employee compensation review. Mercer’s review concluded that in 2020, AltaLink’s non-union below-executive employee TTDC was at market and that AltaLink’s non-union executive employee TTDC was 8.0 per cent below market.<sup>30</sup>

41. AltaLink also explained that it implemented a 1.5 per cent base pay increase for non-union below-executive employees in the fall of 2020, using the most up-to-date projections from Mercer at the time.<sup>31</sup> Subsequently, Mercer changed its base pay increase projections to 2.2 per cent in 2021, which created a shortfall of 0.7 per cent (2.2 per cent – 1.5 per cent) in AltaLink’s non-union below-executive TTDC.<sup>32</sup> For its executive employees, AltaLink explained that it implemented a base pay freeze in 2021, which created a further shortfall of 2.2 per cent in AltaLink’s executive TTDC.

42. The Commission is not persuaded that Mercer’s review is sufficiently precise to accurately measure AltaLink’s market position relative to its peers. For the reasons below, the Commission finds that the results of Mercer’s review are, at best, a general indication of the competitiveness of AltaLink’s compensation and will not rely on it as a precise measure of AltaLink’s market position.

<sup>27</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 54-55, paragraphs 174-179.

<sup>28</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 57-58, paragraphs 188-200.

<sup>29</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 64-65 and 66-67, paragraphs 227 and 237.

<sup>30</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 64-65 and 66-67, paragraphs 227 and 237.

<sup>31</sup> Exhibit 26509-X0156, AML-CCA-2021JUN25-004(b), PDF page 21.

<sup>32</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 65 and 67, paragraphs 227 and 237.

43. Mercer benchmarked AltaLink's executives against executives in a peer group that was primarily composed of parent companies (12 of 18).<sup>33</sup> The Commission agrees with the CCA that AltaLink's executives, who are primarily responsible for managing AltaLink's transmission utility function, likely have different responsibilities and are hired based on different qualifications than the executives at a parent company such as ATCO Ltd. or ENMAX Corporation.<sup>34</sup> It would have been helpful if AltaLink or Mercer had provided more targeted explanations for why the executives in AltaLink's peer group were reasonably matched, based on their responsibilities and qualifications.

44. It also appears that Mercer's compensation review did not take into consideration that AltaLink may have an innate advantage over non-rate-regulated companies. As a rate-regulated utility, AltaLink's employees are generally less susceptible to unexpected layoffs, because AltaLink is less sensitive to swings in market forces such as oil prices.<sup>35</sup> Greater perceived job security could dissuade an employee from leaving AltaLink for a non-rate-regulated company, which may give AltaLink a competitive advantage over those companies.

45. Furthermore, Mercer's conclusions, as noted by the CCA, may not have accurately represented AltaLink's competitive position relative to its peer group. Mercer's review relies on data that is effective April 1, 2020.<sup>36</sup> This data may not have taken into consideration the full impact of the COVID-19 pandemic.

46. The Commission also shares the CCA's concern with Mercer's decision to use target STIP, rather than actual STIP payouts. This is because AltaLink has historically awarded STIP payouts above target relative to its peers. AltaLink's actual STIP payouts for non-union employees have averaged 130 per cent of target (i.e., 30 per cent above target) over the last five years.<sup>37</sup>

47. The Commission is concerned that Mercer's study does not reasonably reflect the amount of STIP that AltaLink's employees should expect to earn relative to its peers, because AltaLink's STIP program may be structured in a manner that makes it easier to achieve a STIP payout that is above target, or because AltaLink has a history of awarding STIP payouts to its employees that are, on average, above target. In its rebuttal evidence, Mercer analyzed how actual STIP payouts compared to target STIP, using employee-level data from Mercer's total compensation survey for the energy sector for 2019 and 2020. Mercer concluded that a majority of the employees in this survey received actual STIP payouts that were near 90 per cent of target or higher in both years, as summarized in the table below:

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<sup>33</sup> Exhibit 26509-X0217, AML-CCA-2021JUN25-014(d), PDF page 36.

<sup>34</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 149-150, paragraphs 413-416.

<sup>35</sup> Exhibit 26509-X0292, CCA-AUC-2021SEP24-028(b), PDF page 103.

<sup>36</sup> Exhibit 26509-X0292, CCA-AUC-2021SEP24-029, PDF page 104.

<sup>37</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 71, paragraph 264.

**Table 5. STIP payout data from Mercer’s total compensation survey**

	Actual payout as percentage of target	2019 findings	2020 findings
<b>Row</b>	<b>Number of observations</b>	<b>60,224</b>	<b>52,458</b>
A	<=50%	9%	19%
B	51%–90%	20%	19%
C	91%–120%	38%	42%
D	>120%	34%	20%
E	<=120%	<b>67% (A+B+C)</b>	<b>80% (A+B+C)</b>
F	>120%	<b>34% (D)</b>	<b>20% (D)</b>

Source: Exhibit 26509-X0307, rebuttal evidence of Mercer, Table 1 – Mercer STIP 2019/2020 findings, PDF page 3.

48. Rather than alleviating the Commission’s concerns, this table confirms them. A majority of the employees included in Mercer’s survey (67 per cent in 2019 and 80 per cent in 2020) received an actual STIP payout that was 120 per cent of target or less. However, this is 10 per cent less than AltaLink’s average STIP payout of 130 per cent over the last five years. Furthermore, when compared on a yearly basis, AltaLink’s STIP payouts were 141.6 per cent of target in 2019 and 132 per cent of target in 2020.<sup>38</sup> This information suggests that AltaLink’s STIP payouts are not consistent with the general payout trends from the comparators that Mercer used in its review.

49. Furthermore, Mercer derived its base pay increase projections for 2021 using projected total base pay increase budgets from AltaLink’s peer group, and not actual base pay increases.<sup>39</sup> Therefore, there is uncertainty as to whether AltaLink’s comparators will award their budgeted base pay increases on an actual basis and therefore, whether the comparisons are accurate.

50. The Commission also continues to support the findings in Decision 25663-D01-2021.<sup>40</sup> There, the Commission found that the Mercer report does not supplant management judgment and other economic factors that must be considered before a base pay increase is contemplated. The Commission also noted that it is very difficult for any study to incorporate intangible factors such as the economic climate in Alberta, risk of job loss, labour productivity and the unemployment rate.

51. Finally, the Commission is not persuaded that ratepayers should compensate AltaLink for its decision to freeze executive base pay increases in 2021. AltaLink had access to information indicating that its executive compensation was below market in 2020.<sup>41</sup> In spite of this information, AltaLink chose to forgo executive base pay increases. It did so exercising management judgment and in consideration of the economic climate at the time.

<sup>38</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 71, paragraph 264.

<sup>39</sup> Exhibit 26509-X0005, Appendix 02 (Resourcing, Compensation and Pension), PDF page 244.

<sup>40</sup> Decision 25663-D01-2021: ATCO Pipelines, a division of ATCO Gas and Pipelines Ltd., 2021-2023 General Rate Application, March 1, 2021, PDF page 33, paragraph 128.

<sup>41</sup> Exhibit 26509-X0156, AML-CCA-2021JUN25-004(b), PDF pages 21-22, and Exhibit 26509-X0005, Appendix 02 (Resourcing, Compensation and Pension), Appendix 2-H.

52. Accordingly, the Commission is not persuaded that AltaLink's market position estimates are accurate enough to be translated on a one-for-one basis into a percentage base pay increase as proposed.

### **6.1.2 Reasonableness of Mercer's 2022-2023 base pay increase projections**

53. AltaLink used Mercer projections to forecast that its comparators will award a base pay increase of 2.6 per cent in each of 2022 and 2023.<sup>42</sup> Mercer relied on its current projections for 2021, current economic indicators, and historical salary increase data from 2016 to 2020 to derive its projections.

54. The Commission will not rely solely on Mercer's projections to determine whether AltaLink's requested base pay increases are reasonable. The Commission is not persuaded that it was reasonable for Mercer to conclude that base pay budget increases for 2022 and 2023 would follow the patterns that Mercer observed from 2017 to 2018 after the 2015 economic downturn.<sup>43</sup> The unique circumstances of the COVID-19 pandemic and associated economic downturn call into question whether this conclusion is reasonable. Moreover, and as noted above, the Commission continues to support the findings in Decision 25663-D01-2021 that management judgment and other economic factors must be considered to determine base pay increase projections.<sup>44</sup>

## **6.2 Applied-for base pay increases for union employees**

### **6.2.1 Market position for union employee compensation in 2021**

55. AltaLink estimated that its union TTDC will be 0.75 (0.85-0.10) per cent above market in 2021 based on:<sup>45</sup>

- (i) Align HR Consulting's 2020 compensation market analysis showing that AltaLink's union TTDC was 0.85 per cent above market in 2020.
- (ii) AltaLink estimates that it will award 0.10 per cent less in base pay increases than its competitors in 2021. It derived this estimate by comparing the 1.50 per cent wage increase that it negotiated with the United Utility Workers' Association in its last collective agreement for 2021, to the competitive union base pay increase of 1.60 per cent in 2021 that AltaLink estimated by using an average that included recent union settlements from 2021 and Mercer's 2021 base pay increase forecast.

56. The Commission is not persuaded that AltaLink's market position estimates are precise enough to be translated on a one-for-one basis into a percentage base pay increase, as AltaLink is proposing, and will therefore not rely on these estimates. This is because the Commission does not find the calculation of AltaLink's estimated competitive base pay increase percentage for 2021 to be reasonable.

57. To derive the estimated competitive base pay increase for 2021, AltaLink averaged the following four data points: (i) average union settlement increases for the top ten Alberta utilities

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<sup>42</sup> Exhibit 26509-X0005, Appendix 02 (Resourcing, Compensation and Pension), Appendix 2-H.

<sup>43</sup> Exhibit 26509-X0005, Appendix 02 (Resourcing, Compensation and Pension), PDF page 246.

<sup>44</sup> Decision 25663-D01-2021, PDF page 33, paragraph 128.

<sup>45</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 62-64, paragraphs 217-226.

(2.5 per cent); (ii) the five largest Alberta Municipalities (1.0 per cent); (iii) the Alberta public sector unions (1.2 per cent); and (iv) Mercer's 2021 base pay increase projection (1.7 per cent).<sup>46</sup> These data points reflect different market comparator groups, which are not necessarily relevant to AltaLink. They also include Mercer's 2021 base pay increase projection, which the Commission has already determined that it will not rely on.

### 6.2.2 Reasonableness of Mercer's 2022-2023 base pay increase projections

58. AltaLink relied on Mercer's 2022-2023 base pay increase projection of 2.6 per cent as a baseline for 2022 and 2023. The Commission has already found that it will not rely solely on Mercer's projections to determine whether AltaLink's requested base pay increases are reasonable.

### 6.3 Approved base pay increases

59. In its evidence, the CCA recommended that the Commission freeze AltaLink's base pay,<sup>47</sup> because AltaLink base pay increases have consistently and significantly exceeded both the Alberta Average Weekly Earnings (AAWE) increases and approved base pay increases of ATCO Electric Transmission (ATCO Electric),<sup>48</sup> despite the economic downturn in Alberta.<sup>49</sup> The CCA argued that the economy should fully recover before base pay increases are contemplated.<sup>50</sup>

60. The Commission finds that the CCA's comparative analysis is flawed.<sup>51</sup> The CCA compared AltaLink's base pay increases to the AAWE and ATCO Electric's base pay increases. This analysis does not adequately assess AltaLink's actual total compensation relative to its peers. AltaLink could have, for example, awarded its employees a higher base pay increase than ATCO Electric's in any particular year, while its total compensation remained below market.

61. The Commission also finds that it would be unreasonable for AltaLink to wait until the economy fully recovers to award its employees a base pay increase, as proposed by the CCA. Doing so creates an unacceptable lag between the time AltaLink could demonstrate that general economic conditions have improved, and the time it would be able to recover costs for base pay increases.

62. The CCA also argued that, if any base pay increases are contemplated for union employees in this test period, those increases should be consistent with the most recent Alberta union settlements in 2022 and 2023.<sup>52</sup> The following table provides a summary of historical and recent union settlements in Alberta.

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<sup>46</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 62-63, paragraph 219.

<sup>47</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 133, paragraph 369.

<sup>48</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 127-133, paragraphs 352-368.

<sup>49</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 125, paragraph 348.

<sup>50</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 133, paragraph 369.

<sup>51</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 270, paragraphs 1233-1235.

<sup>52</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 145, paragraph 401.

**Table 6. Summary of historical union settlements by industry and by sector**

AltaLink versus other sectors	2019		2020		2021		2022		2023	
	Average settlement	CBAs*	Average settlement	CBAs						
AltaLink	2.3%	2	1.3%	2	1.5%	1				
Top Ten Alberta Utilities**	2.1%	10	2.3%	8	1.2%	6	1.1%	3	1.8%	1
Five largest Alberta municipalities***	0.8%	9	1.0%	8	1.1%	4	2.0%	3		
Alberta public sector utilities	0.4%	511	1.1%	265	1.1%	154	1.4%	63	0.8%	17

Source: Exhibit 26509-X0223, AML-AUC-2021AUG20-058, PDF page 255.

\*Collective Bargaining Agreements.

\*\*This is defined by the unions with the largest memberships.

\*\*\*This includes inside workers and International Brotherhood of Electrical Workers (IBEW) unions.

63. The CCA submitted that union base pay increases of no more than 1.1 per cent for 2022 and a further 1.8 per cent for 2023 (the average union base pay increases in each of 2022 and 2023, found in the “Top Ten Alberta Utilities” category in the table above) should be approved.

64. The Commission finds that the data found in Table 6 to be useful, but will not solely rely on the “Top Ten Alberta Utilities” average, as it is based on a small sample size and therefore may not necessarily be reflective of the total average across all 10 utilities.

65. The Commission finds that a modest base pay increase is reasonable in this test period, given the economic indicators that AltaLink filed in its application.<sup>53</sup> Alberta’s economy is recovering from the effects of the COVID-19 pandemic. However, there is uncertainty as to when, or how quickly, Alberta’s economy will fully recover, and these economic indicators are limited because they are forecasts and should only be used as an estimate for the expected economic conditions in Alberta.

66. The Commission also considers that AltaLink’s base pay increases should be in line with the increases that the Commission recently approved for other utilities in Alberta, and the increases that were subject to a recent union settlement in Alberta (as shown in Table 6 above). Other utilities in Alberta are the most relevant comparators for AltaLink when looking at employee compensation. This data also provides evidence of the base pay increases that AltaLink should expect other Alberta utilities to award to their employees and is the best available data on utility base pay increases for 2022-2023.

67. The Commission takes note of the following recently approved and negotiated union base pay increases:

- In Decision 25663-D01-2021,<sup>54</sup> the Commission approved a union base pay increase of 1.6 per cent for ATCO Pipelines in each of 2022 and 2023.

<sup>53</sup> Exhibit 26509-X0005, appendixes 02-E, 02-F and 02-M.

<sup>54</sup> Decision 25663-D01-2021, PDF pages 31-32, paragraph 121.

- In Decision 24964-D02-2021,<sup>55</sup> the Commission approved a union base pay increase of 1.8 per cent for ATCO Electric for 2022.
- From Table 6, the current average union base pay increases for the “Top Ten Alberta Utilities” are 1.1 per cent and 1.8 per cent in each of 2022 and 2023, respectively.

68. The union base pay increases in this list range from a low of 1.1 per cent, to a high of 1.8 per cent. The Commission finds it reasonable to approve a union base pay increase of 1.8 per cent for each of 2022 and 2023. In the Commission’s view, a 1.8 per cent increase is more reflective of the current and expected economic conditions in Alberta.

69. Accordingly, the Commission directs AltaLink to revise its union base pay increases to 1.8 per cent and to show the impacts to its revenue requirement in its compliance filing. If any other forecast is affected by this direction (e.g., AltaLink’s STIP or pension forecasts), AltaLink is directed to make all necessary changes to those forecasts and to show the impact of those changes in its compliance filing.

70. With regard to non-union base pay increases, the Commission has decided to assess AltaLink’s non-union below-executive and executive employees on a combined basis. Awarding a combined amount for both employee groups gives AltaLink flexibility to determine how it should allocate its approved base pay increases. This is consistent with the Commission’s approach in Decision 25663-D01-2021 and Decision 24964-D02-2021.

71. For non-union base pay increases, the Commission takes note of the following recently approved non-union base pay increases:

- In Decision 25663-D01-2021,<sup>56</sup> the Commission approved a non-union base pay increase of 0.8 per cent for ATCO Pipelines in each of 2022 and 2023.
- In Decision 24964-D02-2021,<sup>57</sup> the Commission approved a non-union base pay increase of 1.8 per cent for ATCO Electric for 2022.

72. The non-union base pay increases in these decisions range from a low of 0.8 per cent, to a high of 1.8 per cent. The Commission finds it reasonable to approve a non-union base pay increase of 1.8 per cent in each of 2022 and 2023. A 1.8 per cent increase is at the higher end of the approved non-union base pay increases for 2022 and 2023. This addresses AltaLink’s expressed concerns with the competitive position of its non-union employee compensation and is more reflective of the current and expected economic conditions in Alberta.

73. The Commission considers that additional increases beyond this amount are not necessary or reasonable, because the Commission has not been persuaded by AltaLink’s market position estimates for employee compensation. Furthermore, when looking at AltaLink’s exit interview data and employee surveys,<sup>58</sup> the Commission is not persuaded that AltaLink’s

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<sup>55</sup> Decision 24964-D02-2021: ATCO Electric Ltd., 2020-2022 Transmission General Tariff Application, March 19, 2021, PDF pages 29-30, paragraphs 102-105.

<sup>56</sup> Decision 25663-D01-2021, PDF page 33, paragraph 130.

<sup>57</sup> Decision 24964-D01-2021, PDF page 32, paragraph 113.

<sup>58</sup> Exhibit 26509-X0156, AML-CCA-2021JUN25-004(c), PDF pages 22-24.

employees are dissatisfied with their compensation, because only a small fraction of AltaLink’s employees responded negatively to the compensation at AltaLink.

74. Accordingly, the Commission approves a base pay increase of 1.8 per cent in each of 2022 and 2023 for both its non-union below-executive and executive employees, and directs AltaLink to show the impacts to its revenue requirement in its compliance filing. If any other forecast is affected by this direction (e.g., AltaLink’s STIP, LTIP or pension forecasts), AltaLink is directed to make all necessary changes to those forecasts and to show the impact of those changes in its compliance filing.

**7 Issue 3: Are other components of AltaLink’s compensation, including STIP, severance and safety bonuses, reasonable?**

75. The Commission has determined that other components of AltaLink’s compensation, including STIP, severance and safety bonuses, are reasonable and approves these amounts as filed, subject to the above findings on base pay increases. The Commission provides its reasons and comments on intervener submissions in the sections below.

**7.1 STIP**

76. STIP is a variable form of compensation that AltaLink offers to its employees. AltaLink’s STIP is a function of: (i) employee payout levels; (ii) individual employee performance ratings; and (iii) organizational performance goals.<sup>59</sup>

77. AltaLink requested approval of its forecast STIP costs of \$9.2 million in 2022 and \$9.5 million in 2023.<sup>60</sup>

78. AltaLink’s organizational performance goals applicable to its STIP have been summarized by the Commission in the following table:

**Table 7. AltaLink’s 2021 STIP corporate goals**

Goal and the basis for the metric goal applied	Weight	Minimum	Target	Maximum
Customer satisfaction (based on a scale of 1-10)	20%	8.73	9.00	9.27
Reliability (based on SAIDI performance measure)	20%	0%	20%	40%
Safety (based on total recordable injury frequency rate)	20%	0.45	0.30	0.15
Cyber (based on percent of employees not clicking on simulated phishing emails)	20%	99.90%	99.94%	99.98%
Gross OM&A before capitalization (based on the management of controllable costs)	20%	\$189.6 million	\$184.6 million	\$179.6 million
<b>Total</b>	<b>100%</b>			

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 69, paragraph 249, Table 1.9.6-3.

79. For its cyber goal, AltaLink uses a metric that measures the percentage of its employees who did not click on a simulated phishing email.<sup>61</sup>

<sup>59</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 71-72, paragraphs 265-267.

<sup>60</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 69, paragraph 247, Table 1.9.6-1.

<sup>61</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 71, paragraph 262.

80. The CCA recommended that the Commission reduce AltaLink’s applied-for STIP costs by 20 per cent in the test period, to remove funding for the cyber goal.<sup>62</sup>

81. The Commission is not persuaded by the CCA’s arguments. The Commission considers that phishing emails are a real threat to cyber security and, as noted by AltaLink, phishing emails are one of the primary methods that an attacker can gain access to an organization.<sup>63</sup>

## 7.2 Safety bonuses

82. Safety bonuses are a variable form of compensation that AltaLink offers to its employees.

83. AltaLink requested approval of its forecast safety bonus costs in the amount of \$0.4 million in each of 2022 and 2023.<sup>64</sup>

84. The CCA opposed the inclusion of the safety bonus in AltaLink’s revenue requirements.<sup>65</sup>

85. The Commission is not persuaded by the CCA’s arguments. The Commission agrees that safety is important and accepts AltaLink’s argument that it is appropriate to have two separate bonuses for safety. The bonuses measure different safety elements. The inclusion of the safety bonus ensures that employees have a broad focus on safety.<sup>66</sup>

## 7.3 Severance costs

86. Severance costs are incurred by an employer, such as AltaLink, when it terminates its employment relationship with an employee. Severance costs typically include amounts to compensate an employee for termination in lieu of notice and any post-employment benefits that may be offered to an employee.

87. AltaLink requested approval of its severance costs in the amount of \$0.4 million in each of 2022 and 2023.<sup>67</sup> AltaLink derived this forecast by taking the average of its actual severance payouts for the following five years, summarized in the table below:

**Table 8. AltaLink’s actual severance costs from 2016 to 2020**

	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	Five-year Average
(\$ million)						
Severance costs	1.0	0.7	0.4	0.0	0.1	<b>0.4</b>

Source: Exhibit 26509-X0223, AML-AUC-2021AUG20-065(a), PDF page 279.

88. AltaLink explained that this is a contingency forecast for unexpected terminations, and that it had no plans to sever people in this test period.<sup>68</sup>

<sup>62</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 154, paragraphs 426-428.

<sup>63</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 280, paragraph 1299.

<sup>64</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 82, paragraph 322, Table 1.9.8-5.

<sup>65</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 156-157, paragraphs 434-438.

<sup>66</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 281-282, paragraphs 1307-1314.

<sup>67</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 81, paragraph 317, Table 1.9.8-3.

<sup>68</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-065(b), PDF page 280.

89. The CCA opposed AltaLink's method of deriving the severance forecast, arguing that 2016 and 2017 actual severances should be excluded from the calculation above, because 2016 and 2017 were transitional years where AltaLink severed employees that were no longer required to support the big build,<sup>69</sup> and are therefore not reflective of the test period where AltaLink is entering into a period of relative stability.<sup>70</sup> Accordingly, the CCA recommended a disallowance to AltaLink's severance forecast of approximately \$0.2 million.

90. The Commission finds that the CCA's proposed reduction to severance costs is immaterial and accepts AltaLink's explanation that the severance amounts in 2016 and 2017 were not related to employees that were cut following the big build.<sup>71</sup>

## **8 Issue 4: Has AltaLink reasonably forecast its O&M expenses, including the number of FTEs, as well as its insurance premiums?**

91. AltaLink records and tracks the costs of its O&M activities using uniform system of accounts (USA).

92. Bulletin 2020-25<sup>72</sup> introduced materiality thresholds for testing the revenue requirement for O&M costs in cost-of-service applications. The Commission used the guidance from Bulletin 2020-25 to determine which USA accounts to examine in detail in this proceeding.<sup>73</sup> The Commission determined that the following USA accounts and their related variances were material and would be subject to detailed testing:

- (i) USA 920 – Administrative and general salaries;
- (ii) USA 924 – Insurance premiums;
- (iii) USA 934 – IT general and administrative expenses;
- (iv) USA 562 – Station equipment maintenance;
- (v) USA 575 – Operations and management IT support; and
- (vi) USA 923 – Outside service employed (limited to legal and consulting costs and, to the extent that these costs are coded to USA 923, for government relations and communications).

93. AltaLink requested approval of the following O&M expense amounts for each of the USA accounts summarized in the table below:

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<sup>69</sup> According to AltaLink, the big build denotes a period of significant growth that occurred in Alberta from 2012 to 2015.

<sup>70</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 155-156, paragraphs 431-433.

<sup>71</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 281, paragraph 1304.

<sup>72</sup> Bulletin 2020-25, Reducing regulatory burden with materiality thresholds for review of cost of service rate applications, July 3, 2020.

<sup>73</sup> Exhibit 26509-X0212, AUC letter - Issues list, PDF page 3, paragraph 9.

**Table 9. Transmission operating costs for 2022 and 2023**

Uniform System of Account (USA)	2019	2020	2021	2022	2023
	Actual	Actual	MU	Forecast	Forecast
(\$ million)					
USA 920 – Administrative and general salaries	13.1	13.5	14.4	14.6	15.0
USA 924 – Insurance premiums	3.7	4.1	5.1	6.3	7.3
USA 934 – IT general and administrative expenses	9.9	10.1	11.4	11.7	11.9
USA 562 – Station equipment maintenance	15.0	15.3	14.8	15.0	15.3
USA 575 – Operation and management IT support	4.2	4.3	4.7	4.7	4.8
USA 923 – Outside services employed	3.4	2.7	2.6	2.9	3.0
<b>Total</b>	<b>49.3</b>	<b>50.0</b>	<b>53.0</b>	<b>55.2</b>	<b>57.3</b>

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 147, 174, 313, 322-323 and 336, paragraphs 430, 540, 989, 1029, 1033 and 1090, tables 5.3.4-2, 5.3.11-1, 25.2.1-1, 25.2.11-1, 25.2.12-1 and 25.2.20.3-1.

94. In Decision 2011-453,<sup>74</sup> the Commission expressed concern that AltaLink’s forecasts were incremental to the actual or management update (MU) costs of the preceding year, and suggested that AltaLink should develop its forecasts from an assumed zero base.

95. AltaLink confirmed that it developed its forecasts from an assumed zero base.<sup>75</sup> AltaLink indicated that it reasonably adjusted its labour resources after the big build, that its forecasts reflect the base level of labour resources that it needs to meet its obligations as a TFO, and that its forecasts are consistent with its return to being an operations-focused company after the big build.<sup>76</sup>

96. Dustin Madsen, on behalf of the CCA, challenged AltaLink’s forecasts on three general grounds.

97. First, the CCA questioned whether AltaLink used a zero-based budgeting approach to develop its forecasts, alleging that AltaLink failed to identify and provide the information that its managers used to develop its forecast for this test period.<sup>77</sup>

98. The Commission will assess whether AltaLink’s forecasts are reasonable, from an assumed zero base, only for AltaLink’s legal and regulatory department. The CCA investigated this issue, in detail, for departments that record their costs in USA 920,<sup>78</sup> and the legal and regulatory department is the only department in USA 920 that had a material increase in FTEs since 2015.

99. Second, the CCA argued that AltaLink should have comparable resourcing requirements to ATCO Electric. The CCA filed multiple comparative analyses to support its view that AltaLink is overstaffed and over-resourced relative to ATCO Electric for certain departments.<sup>79</sup>

<sup>74</sup> Decision 2011-453: AltaLink Management Ltd., 2011-2013 General Tariff Application, November 18, 2011, PDF page 30, paragraph 124.

<sup>75</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 45, paragraphs 118-120.

<sup>76</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 28-32, paragraphs 50-61.

<sup>77</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 119-122, paragraphs 331-339.

<sup>78</sup> Exhibit 26509-X0156, AML-CCA-2021JUN25-002, PDF page 14.

<sup>79</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 91-96, 101-104, 106, 110-112, 115 and 117-119, paragraphs 258-275, 285-296, 301, 310, 313-315, 322, 325-326 and 329-330.

100. The Commission accepts AltaLink's argument that the CCA's data may be inaccurate. AltaLink and ATCO Electric use different methods to record and track their O&M costs and resources.<sup>80</sup> Accordingly, the Commission does not accept the CCA's comparative analyses and will not address them any further.

101. Third, the CCA argued that AltaLink's forecasts are not consistent with its stated goal of being an operations-focused company, because AltaLink's legal and regulatory and A&G security and IT departments are overstaffed and over-resourced after the big build.<sup>81</sup>

102. The Commission will assess whether AltaLink reasonably adjusted its resource levels after the big build and whether AltaLink's current resource levels are reasonable for its legal and regulatory, and A&G security and IT departments.<sup>82</sup>

103. With the exception of AltaLink's insurance premiums captured in USA 924, which the Commission will address separately in Section 8.3, the Commission will address only the forecast O&M expenses for AltaLink's legal and regulatory (coded to USA 920) and A&G security and IT (coded to USA 934) departments. The amounts in the other USA accounts and departments were not contentious in this proceeding and appear to the Commission to be reasonable, subject to other findings that were made in this decision.

## **8.1 Legal and regulatory department**

104. Within USA 920, AltaLink requested approval of \$5.2 million for 2022 and \$5.3 million for 2023, in forecast internal labour expenses for its legal and regulatory department.<sup>83</sup>

105. AltaLink stated that it reasonably adjusted its FTE levels after the big build, and that its FTE forecasts are consistent with its return to being an operations-focused company, as compared to a growth-based company during the big build.<sup>84</sup> AltaLink adjusted its legal and regulatory FTEs after the big build by reducing its actual 2015 FTEs from 47.6 FTEs (30 capital FTEs and 17.6 O&M FTEs) to a forecast total of 39.6 FTEs (9 capital FTEs and 30.6 O&M FTEs) in 2021. It eliminated 12 capital FTEs because of a reduction in capital-related activities after the big build, and reallocated nine FTEs from capital to O&M because of an increase in O&M-related activities. These changes are summarized in the following table:<sup>85</sup>

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<sup>80</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 227-237, paragraphs 1062-1085.

<sup>81</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 91-96, paragraphs 258-275.

<sup>82</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 29, paragraph 51.

<sup>83</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-066(b), PDF page 285.

<sup>84</sup> Exhibit 26509-X0151, AML-IPCAA-2021JUN25-001(b)-(e), PDF pages 3-6.

<sup>85</sup> The Commission observes that AltaLink's legal and regulatory FTEs and staffing levels in USA 920 are forecast to remain at their 2021 MU levels, as per Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 314-315 and 320, paragraphs 991 and 1020, and Exhibit 26509-X0223, AML-AUC-2021AUG20-066(c), PDF page 289.

**Table 10. Evolution of AltaLink’s legal and regulatory FTEs**

FTE totals and adjustments	Capital FTEs	Operating FTEs	Total FTEs
<b>2015 actual total FTEs</b>	<b>30</b>	<b>17.6</b>	<b>47.6</b>
Eliminated capital FTEs	-12		-12
FTEs transferred from capital to O&M	-9	+9	0
FTEs transferred from compliance department due to reorganization	0	+4	+4
<b>2021 MU total FTEs</b>	<b>9</b>	<b>30.6</b>	<b>39.6</b>

Source: Exhibit 26509-X0151, AML-IPCAA-2021JUN25-001(b)-(e), PDF pages 3-6.

106. For the following reasons, the Commission is not persuaded that AltaLink’s legal and regulatory FTE forecasts are reasonable relative to the expected activity levels for this department.

107. The Commission is unable to confirm whether it was reasonable for AltaLink to reallocate nine legal and regulatory FTEs from capital to O&M-related activities after the end of the big build.

108. AltaLink provided a list of new O&M-related activities that it said drove this reallocation.<sup>86</sup> In the Commission’s view, the list does not substantiate why nine legal and regulatory FTEs were reallocated. The list provided a high-level explanation of new activities that AltaLink employees have been responsible for since 2015. The Commission cannot use this list to meaningfully assess whether the scope, complexity or volume of legal and regulatory work has substantially changed compared to 2015, and whether it was reasonable for AltaLink to reallocate nine legal and regulatory FTEs from capital to O&M, as opposed to any other number of FTEs, to perform the level of activity that is being forecast in this test period.

109. In this regard, AltaLink primarily provided a high-level explanation of the efforts that it undertakes to prepare its forecasts, and high-level explanations of the activities that its legal and regulatory department is responsible for completing. It did not provide the information (in summary form or otherwise) that it relied on to develop its FTE forecasts.<sup>87</sup> Without this information, the Commission is unable to assess whether AltaLink’s managers developed a reasonable forecast based on the information that was available to them. Furthermore, the Commission agrees with the CCA, that the quantum of AltaLink’s FTEs cannot be tested for reasonableness by using AltaLink’s high-level activity lists. Activity lists in isolation provide very little indication as to why AltaLink’s FTE levels are reasonable. They are not sufficient to demonstrate that AltaLink developed its forecasts from an assumed zero base as suggested in Decision 2011-453.

110. The Commission also agrees with the CCA, that AltaLink’s forecast legal and regulatory FTE levels are unreasonable relative to the expected workload of this department.<sup>88</sup> AltaLink’s facility and rates applications are expected to decrease in size and complexity with the end of the big build. Furthermore, since 2020, the Commission has increased its emphasis on the reduction of regulatory burden and improving efficiency by streamlining certain processes. The Commission has decreased the number of rounds of IRs to which AltaLink must respond in cost-

<sup>86</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 242-245, paragraphs 1108-1115.

<sup>87</sup> Exhibit 26509-X0217, AML Further IR Responses to CCA, AML-CCA-2021JUN25-001(b), PDF pages 13-14.

<sup>88</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 105-106, paragraphs 298-299.

of-service proceedings and reduced the need for oral cross-examination. The efficiency changes have also imposed materiality thresholds that avoid time, effort and resulting costs to investigate small cost differences. However, there is insufficient evidence that shows AltaLink took these factors into consideration when forecasting its legal and regulatory O&M FTEs.

111. Instead, AltaLink’s legal and regulatory O&M FTEs are forecast to increase from 17.6 FTEs in 2015, to 30.6 FTEs in this test period (which includes AltaLink’s reallocation of nine FTEs from capital to O&M). When this department is assessed on a functional basis, the Commission observes that AltaLink’s “Regulatory Rates and Tariffs” FTEs have slightly increased since 2015 (increasing from nine FTEs in 2015 to a forecast of 11 FTEs in 2021), and its “Legal Counsel” and “Legal Administrative Assistants” FTEs have remained constant, which further reinforces the Commission’s concerns.<sup>89</sup> An overview of AltaLink’s legal and regulatory FTEs is provided in the table below.

**Table 11. Evolution of AltaLink’s legal and regulatory FTEs by function**

Function	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2021 MU
Regulatory Rates and Tariffs	9	10	10	10	12	12	11
Compliance	N/A	N/A	4	4	6	6	6
Data Integrity	17	10	9	9	6	5	5
Lawyers	10	10	10	10	10	10	10
Legal Admin Assistants	4	4	4	4	4	4	4
Hearing Support Assistants	4	4	3	3	3	3	2
Regulatory Coordinator	1	1	1	1	1	1	1
Hearing Support	5	5	4	4	4	4	3
<b>Total</b>	<b>50</b>	<b>44</b>	<b>45</b>	<b>45</b>	<b>46</b>	<b>45</b>	<b>42</b>

Source: Exhibit 26509-X0309, AltaLink rebuttal evidence, PDF pages 242-243, paragraph 1108.

112. Based on the foregoing, the forecast O&M FTE levels and the associated costs for this department are not supported or reasonable, and the Commission directs AltaLink to reduce the forecast O&M expenditures for this department by 10 per cent, in each of 2022 and 2023. In the Commission’s opinion, a 10 per cent reduction reasonably aligns AltaLink’s legal and regulatory department O&M costs with expected reductions in activity levels for this department. If this finding has any effect on other aspects of AltaLink’s forecasts, the Commission directs AltaLink to make all necessary changes to those forecasts and to show the impact of those changes in its compliance filing.

113. Furthermore, the Commission directs AltaLink not to offset the impact of a reduction to O&M FTEs with an increase in capital FTEs or contractor costs.<sup>90</sup>

## 8.2 A&G security and IT department

114. Within USA 934, AltaLink requested approval of the forecast amounts for its A&G security and IT department for 2022 and 2023 in the table below:

<sup>89</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 242-243, paragraph 1108.

<sup>90</sup> See Decision 22050-D01-2017: ATCO Electric Ltd., 2015-2017 Transmission General Tariff Application Compliance Filing, June 19, 2017, PDF pages 9-10, paragraphs 27-31, and Decision 24964-D01-2021, PDF page 22, paragraph 69.

**Table 12. USA 934 - Security and IT General & Administrative O&M expenses**

Expense	2022 Forecast	2023 Forecast
	(\$ million)	
Labour	3.7	3.8
Contracted manpower	1.8	1.8
Other GOE	6.2	6.3
<b>Total</b>	<b>11.7</b>	<b>11.9</b>

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 336, paragraph 1090, Table 25.2.20.3-1.

115. The CCA opposed AltaLink’s request and recommended that the Commission approve expenditures of \$4.8 million and \$4.7 million for 2022 and 2023, respectively, for this account.<sup>91</sup>

116. The Commission has decided to approve the costs in this account as filed, subject to the Commission’s findings respecting AltaLink’s capital IT programs and projects in Section 10.3 of this decision. If those findings have any effect on AltaLink’s operating IT expenditure forecasts, the Commission directs AltaLink to make all necessary changes to those forecasts and to show the impact of those changes in the compliance filing.

117. AltaLink cited a number of changes in its operating activities to support its forecast for this USA. These activities included increased IT licencing and support costs as result of work from home arrangements arising from the COVID-19 pandemic, an increased number of supply chain security audits/reviews due to attacks against critical infrastructure supply chain, an increase in high-volume, manual CIP processes and evidence gathering processes, and an increased frequency and volume of software patching to address software, operating system, and hardware vulnerabilities.<sup>92</sup> The Commission finds these changes in operating expenditures and others cited in AltaLink’s application to be sufficiently compelling to justify its forecast for USA 934 in the 2022-2023 test period.

118. With respect to the transfer of FTEs from capital to O&M, the Commission finds that AltaLink adequately addressed this concern in its rebuttal evidence. As explained by AltaLink, its capitalization policy determines whether an FTE is classified as capital or O&M.<sup>93</sup>

119. The Commission is not persuaded by the CCA’s argument that AltaLink’s IT spending should be driven primarily by the number of its employees.<sup>94</sup> AltaLink noted in its rebuttal evidence that the costs of its security and IT department are primarily driven by business needs. These needs, which are not necessarily correlated with the number of employees at AltaLink, include (but are not limited to) storage requirements, IT systems and infrastructure support (e.g., Alberta Reliability Standards Critical Infrastructure Protection system, customer support systems, and information security standards and compliance), and the need to address cyber security risks.<sup>95</sup>

<sup>91</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 115, paragraph 322.

<sup>92</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 331-339, paragraphs 1075-1112, Exhibit 26509-X0223, AML-AUC-2021AUG20-066(d), PDF pages 295-298, Exhibit 26509-X0217, AML-CCA-2021JUN25-013(b), PDF pages 30-33, and Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 172-177, paragraphs 820-840.

<sup>93</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 175-176, paragraphs 836-838.

<sup>94</sup> Exhibit 26509-X0282, CCA Evidence of D. Madsen, PDF pages 109-112, paragraph 306-315.

<sup>95</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 172-175, paragraphs 820-835.

120. The Commission will also not rely on the data in the Computer Economics table provided by the CCA.<sup>96</sup> The methodology and data that Computer Economics relied upon to derive the figures in the table, and the study itself, were not provided. The Commission could not, therefore, test the accuracy, relevance and usefulness of the figures in the table, nor assess whether the figures can be reasonably used as a comparator for AltaLink’s IT spending.

121. While the Commission did not rely on the table from Computer Economics or the IT spending ratios that the CCA derived for the reasons stated above, the Commission is concerned directionally about AltaLink’s expenditures in this area. AltaLink did not directly address or refute the data in the Computer Economics table or the CCA’s evidence about AltaLink’s IT spending ratios.<sup>97</sup> The Commission considers that relevant comparator information would be highly useful in evaluating these expenditures in AltaLink’s next GTA. The Commission therefore directs AltaLink to file a comparison of its total IT expenditures (including both O&M and capital IT expenditures) against other relevant comparators in the utility industry, as part of its next GTA. AltaLink should identify, explain and support the reasonableness of: (i) the methodology and analysis conducted to select the comparators; (ii) any assumptions made; and (iii) the metrics, or other quantitative assessment tools, used.

122. The Commission further directs AltaLink to provide an analysis that shows its annual IT expenditures from 2015, to the next test period. As part of this analysis, AltaLink must provide a breakdown of its IT budget by cost category (e.g., hardware, software, subscription services, staffing, data centre, security, and other expenses) and by capital versus O&M. This breakdown should identify what components of the IT budget are user dependent, and what components are more global to AltaLink and cannot be broken down on a per user basis (e.g., data management costs for capital programs and projects, or the costs to implement new industry standards). AltaLink must also provide a narrative that summarizes the evolution of its IT expenditures by cost component since 2015, and identify the cost drivers (e.g., new industry standards, new security initiatives, software or hardware changes, etc.) for any material cost increases that have occurred since 2015.

### 8.3 USA 924 - Insurance Premiums

123. AltaLink requested approval of forecast annual insurance costs of \$6.3 million in 2022 and \$7.3 million in 2023 within USA 924 - Insurance Premiums. AltaLink provided details of its historical actual and forecast insurance coverage for the years 2019-2023, which are reproduced in the following table:

**Table 13. AltaLink’s USA 924 - Insurance Premiums for 2019-2023**

Insurance coverage	2019 Forecast	2019 Actual	2020 Forecast	2020 Actual	2021 Forecast	2021 MU	2022 Forecast	2023 Forecast
	(\$ million)							
Property	2.1	2.1	2.3	2.3	2.4	2.6	3.0	3.4
Liability	1.2	1.1	1.2	1.3	1.2	2.0	2.7	3.3
Other	0.3	0.4	0.3	0.5	0.3	0.5	0.6	0.6
<b>Total</b>	<b>3.6</b>	<b>3.7</b>	<b>3.8</b>	<b>4.1</b>	<b>3.9</b>	<b>5.1</b>	<b>6.3</b>	<b>7.3</b>

Source: Exhibit 26509-0006, Table 1-1, PDF page 2, paragraph 1.

<sup>96</sup> Exhibit 26509-X0282, CCA Evidence of D. Madsen, PDF pages 112-114, paragraph 316-319.

<sup>97</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 181-182, paragraphs 856-858.

124. AltaLink has property insurance, commercial third-party liability insurance (liability insurance) and other insurance coverages. The costs for insurance are recovered as an O&M expense in USA 924, and through an established self-insurance reserve (SIR) account in USA 925.<sup>98</sup> AltaLink's SIR account provides coverage for injuries and damages not covered by AltaLink's commercial insurance arrangements.<sup>99</sup>

125. AltaLink does not obtain property insurance coverage on its transmission lines due to the high cost of the associated premium.<sup>100</sup>

126. At issue in the current proceeding was AltaLink's proposal to purchase an additional \$400 million of liability insurance at a forecast cost of \$2.7 million in 2022 and \$3.3 million in 2023.<sup>101</sup> AltaLink explained that purchasing liability insurance has become difficult due to the hard insurance market.<sup>102 103</sup>

127. The CCA raised concerns with the cost of these premiums and noted that since 2019, liability insurance costs are forecast to triple by 2023.<sup>104</sup>

128. From 2014 to 2019, AltaLink spent \$5.3 million for liability insurance and received \$13.7 million in insurance proceeds. During this time period, the cost of liability insurance remained below \$1 million per year, and provided a net benefit to ratepayers. The CCA posited a scenario where AltaLink received \$13.7 million, but paid the 2019 to 2023 insurance costs, and, by extrapolation determined that with higher premium costs there would be a net loss to ratepayers. The CCA submitted that if an average annual cost of less than \$1 million were to continue, then the purchase of liability insurance would be a reasonable cost for AltaLink.<sup>105</sup>

129. The Commission acknowledges that the cost of liability insurance has increased at a rate greater than that for property and other coverages, which is in part due to the current hard insurance market. However, the Commission views that the cost of liability insurance premiums, when weighed against the potential costs of a catastrophic loss, are comparatively low and therefore reasonable, at this time.

130. For these reasons, AltaLink's 2022-2023 insurance costs are approved. Notwithstanding the Commission's approval of AltaLink's forecast annual insurance costs, it is concerned with the increasing costs of liability insurance. If AltaLink continues purchasing third-party liability insurance, AltaLink is expected to provide detailed justification in its next GTA for continuing to pay potentially increasing premiums. The detail required should include a risk-benefit analysis and an evaluation of all relevant alternatives for the Commission's consideration. Given that liability insurance may no longer be available or practical in the future as a result of a continuing hard insurance market, the Commission also requires AltaLink to explain when, and on what

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<sup>98</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 323, paragraph 1035.

<sup>99</sup> Exhibit 26509-X0006, Appendix 3, PDF page 24, paragraph 2.

<sup>100</sup> Exhibit 26509-X0006, Appendix 3, PDF page 2, paragraph 5.

<sup>101</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 249, paragraph 1135.

<sup>102</sup> Exhibit 26509-X0006, Appendix 3, PDF page 3, paragraph 15.

<sup>103</sup> A hard insurance market is defined by a combination of limited supply of insurance and a steep increase in insurance premiums, due largely to many recent catastrophic events.

<sup>104</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 162, paragraph 453, Table 37.

<sup>105</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 162, paragraph 453.

basis, it would move away from commercial third-party liability insurance, and how it plans to accommodate such a transition.

## **9 Issue 5: Is AltaLink’s 2022 opening rate base reasonable?**

### **9.1 Capital replacement and upgrade projects in 2022 opening rate base**

131. The actual capital additions to rate base for AltaLink’s CRU projects for 2019, 2020, and 2021 are \$146.8 million, \$157.1 million, and \$141.6 million, respectively.<sup>106</sup> Based on its review of the record pertaining to the actual capital additions for these projects, the Commission approves the 2022 opening rate base amounts.

### **9.2 IT projects in 2022 opening rate base**

132. AltaLink’s actual capital additions to rate base for IT projects for 2019, 2020, and 2021 are \$30.2 million, \$34.3 million and \$26.6 million, respectively.<sup>107</sup>

133. Hayitbay Mahmudov and Jeff Crozier on behalf of the UCA claimed that AltaLink did not sufficiently justify the capital additions incurred for its Alberta Reliability Standards (ARS) Critical Infrastructure Protection (CIP) Compliance Program. AltaLink’s capital additions for this program for 2019, 2020 and 2021 are \$0.2 million, \$1.1 million, and \$6.0 million, respectively.<sup>108</sup> The UCA recommended that the Commission reduce the total \$7.3 million proposed to be added to 2022 opening rate base by \$3.9 million because AltaLink did not provide any meaningful explanations for its ARS CIP Compliance Program cost variances in its business case.<sup>109 110</sup>

134. The UCA also identified higher cost variances for three additional IT projects; however, it did not recommend specific reductions for these projects.<sup>111</sup>

135. For the reasons that follow, the Commission does not accept the UCA’s arguments. The Commission approves AltaLink’s 2022 opening rate base amounts as filed.

136. The Commission accepts AltaLink’s evidence that higher capital expenditures driven by the AESO developing or updating its CIP requirements were necessary in 2019, 2020 and 2021. In 2019, AltaLink secured a third-party vendor to assist with the delivery of the program, where training was developed for AltaLink’s employees to understand the deficiencies in its CIP documentation. AltaLink continued to define and execute mitigation plans, process definition and evidence collection practices to improve its program in 2020 and 2021.<sup>112</sup> As discussed in Section 10.3.4 of this decision, the AESO completed AltaLink’s triannual CIP audit in June 2021, and AltaLink was required to address any contraventions of the ARS. The Commission

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<sup>106</sup> Excluding the Wildfire Mitigation Plan, which is treated separately in Section 10.2 of this decision. Exhibit 26509-X0112, CWIP continuity schedules, Tab “CRU CWIP”; and Exhibit 26509-X0003.01, MFR schedules, Schedule 10-4.

<sup>107</sup> Exhibit 26509-X0112, CWIP continuity schedules, Tab “SIS CWIP”; and Exhibit 26509-X0003.01, MFR schedules, Schedule 10-4.

<sup>108</sup> Exhibit 26509-X0112, CWIP continuity schedules, Tab “SIS CWIP.”

<sup>109</sup> Exhibit 26509-X0276, UCA evidence of H. Mahmudov and J. Crozier, PDF page 21.

<sup>110</sup> Specifically, the UCA recommend a disallowance of \$3.9 million in capital expenditures for this program.

<sup>111</sup> Exhibit 26509-X0276, UCA evidence of H. Mahmudov and J. Crozier, PDF page 18.

<sup>112</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 134-135, paragraphs 643-644.

accepts AltaLink's statement that it did not anticipate the level of change required to its program notwithstanding CIP guidance from the AESO and lessons learned from other market participants over the 2019-2021 period.<sup>113</sup>

137. The Commission agrees with the UCA's position, however, that AltaLink did not provide extensive explanations<sup>114</sup> respecting any necessary project changes or the associated increase in capital additions, as part of its application. It was only through the development of the record that AltaLink provided the additional information required to justify the prudence of its actual capital expenditures on this program.

138. In future GTAs, AltaLink should compare its approved forecast capital expenditures to its actual capital expenditures for each test year period in its business cases consistent with the reporting requirements under Bulletin 2006-25<sup>115</sup> rather than providing high-level variance explanations and grouping individual IT projects and programs into larger categories.<sup>116</sup> AltaLink should also explain whether the projects or programs that were approved in its previous business cases were completed as forecast, and if not, explain why. It should further describe any new projects or programs for which costs were incurred, but not included in a previous capital forecast to allow the Commission to understand how AltaLink exercised its managerial discretion to re-prioritize expenditures in the previous test period.

139. The Commission considers that the information requirements described above for AltaLink's IT projects should similarly be included, at the application filing stage, for variances applicable to AltaLink's CRU, WMP and Facility programs.

### **9.3 Facility projects in 2022 opening rate base**

140. The actual capital additions to rate base for AltaLink's facilities projects for 2019, 2020, and 2021 are \$32.5 million, \$4.3 million, and \$3.5 million, respectively.<sup>117</sup> Based on its review of the record pertaining to the actual capital additions for these projects, the Commission approves the 2022 opening rate base amounts.

### **9.4 Direct assigned capital projects in 2022 opening rate**

141. The actual capital additions to rate base for AltaLink's direct assigned capital project categories for 2019, 2020, and 2021 are \$129.0 million, \$26.2 million, and \$115.5 million, respectively.<sup>118</sup> Based on its review of the record in relation to the actual capital additions to rate base for these direct assigned capital projects, the Commission approves the opening rate base amounts as filed, subject to any adjustments in a future DACDA application.

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<sup>113</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 134-135, paragraphs 644-647.

<sup>114</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 132, paragraph 635.

<sup>115</sup> Bulletin 2006-25, Announcing the Approval in Principle of the Form and Content of a Uniform System of Accounts and Minimum Filing Requirements for Alberta Electric Utilities, July 12, 2006, and the Consensus Documents referred to therein (the Uniform System of Accounts and the Minimum Filing Requirement documents).

<sup>116</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 260 and 281, paragraphs 824, 919-922, tables 10.4.1-1 and 10.4.8.1-1.

<sup>117</sup> Exhibit 26509-X0112, CWIP continuity schedules, Tab "Facilities CWIP"; and Exhibit 26509-X0003.01, MFR schedules, Schedule 10-4.

<sup>118</sup> Exhibit 26509-X0003.01, MFR schedules, schedules 3-2.2019(ii), 3-2.2020(ii) and 3-2.2021(ii).

## 9.5 Wildfire Mitigation Plan in 2022 opening rate base

142. AltaLink's actual capital additions to rate base for the Wildfire Mitigation Plan (WMP) for 2019, 2020 and 2021 are \$3.33 million, \$9.98 million and \$14.89 million, respectively.<sup>119</sup>

143. The Commission denies capital additions in the amount of \$3.052 million<sup>120 121</sup> to AltaLink's 2022 opening rate base for (i) targeted ROW improvements in high-risk fire areas (HRFAs)<sup>122</sup> and (ii) wildfire tree removals, both of which are in AltaLink's Transmission Line ROWs Upgrades in HRFAs Program.<sup>123</sup> The Commission has instead approved the amount of \$1.505 million to be added to AltaLink's 2022 opening rate base for these two project categories for the reasons discussed below.

144. Transmission line ROW upgrades in HRFAs reduce the risk of a wildfire occurring in an HRFA by addressing the risk of vegetation or airborne debris coming into contact with energized conductors. This program entails AltaLink removing hazardous and dangerous trees, expanding clearances and acquiring or upgrading easements or access agreements in HRFAs, and applying more aggressive trimming activities.

145. In Decision 23848-D01-2020, the Commission approved the Transmission Line ROW Upgrades Program based on its understanding that AltaLink would complete transmission line ROW upgrades and tree removals on segments of line<sup>124</sup> at a forecast capital expenditure of \$2.9 million.<sup>125 126</sup> In the current application, AltaLink identified that its approved segments of line equate to 410 units (on a span basis) that were to be completed at a forecast capital expenditure of \$2.9 million.

146. AltaLink incurred capital expenditures of \$3.443 million from 2019 to 2021. AltaLink completed only 191 units (on a span basis) that were proposed to be capitalized into rate base in the amount of \$3.052 million, leaving approximately \$0.391 million in 2021 closing construction work in progress (CWIP).<sup>127</sup>

147. The costs approved for the targeted ROW improvements in HRFAs<sup>128</sup> and wildfire tree removal sub-projects at issue are summarized in the following table:

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<sup>119</sup> Exhibit 26509-X0112, CRU CWIP continuity schedules, Tab "SIS CWIP."

<sup>120</sup> Exhibit 26509-X0112, CRU CWIP continuity schedules, line 42: discloses AML's 2020 actual capital additions of \$2.443 million and 2021 forecast capital addition of \$0.60 million with 0.39 million staying in CWIP.

<sup>121</sup> Exhibit 26509-X0046, Appendix 22 (Wildfire Mitigation Plan) Table 1-2 of discloses 2020 actual and 2021 MU costs consistent with the capital additions shown in Exhibit 26509-X0112. The Commission has assumed that the corresponding units shown in Exhibit 26509-X0112, Appendix 22-A4, PDF page 73, paragraph 6, Table 1-1, can also be attributable to actual results.

<sup>122</sup> Within AltaLink's Transmission Line Rights-of-Way in HRFAs Program, AltaLink renamed one of its sub-projects from "Right of Way Upgrades in HRFAs" to "Targeted Right-of-Way Improvements in HRFAs" to better describe the project, as explained in its WMP business case for Appendix 22-A4.

<sup>123</sup> Section 10.2 of this decision contains a full description of AltaLink's WMP.

<sup>124</sup> As defined by AltaLink: "A 'Unit' is one notification/Scope on one individual span" in its WMP business case for Appendix 22-A4.

<sup>125</sup> Exhibit 26509-X0046, Appendix 22-A4, PDF pages 74-76, paragraphs 10, 12, 14 and 16, tables 1-5 to 1-8.

<sup>126</sup> Decision 23848-D01-2020, PDF page 43, Table 8.

<sup>127</sup> Exhibit 26509-X0046, Appendix 22-A4, PDF page 74, paragraph 10, Table 1-5.

<sup>128</sup> Within AltaLink's Transmission Line Rights-of-Way in HRFAs program, AltaLink renamed one of its sub-projects from "Right of Way Upgrades in HRFAs" to "Targeted ROW [Right-of-Way] Improvements in HRFA" to better describe the project.

**Table 14. Summary of transmission line ROW upgrades in HRFAs from the 2019-2021 GTA forecast**

	Units (notifications)	Total combined capital expenditure costs in 2020 and 2021 (\$000)	Cost per unit
<b>Targeted ROW Improvements in HRFAs (formerly named ROW Upgrades in HRFAs)</b>			
Approved forecast (Table 1-5, Compliance forecast)	127	2,040	16.06
Actual (Table 1-2, 2020 Actual and 2021 MU)	71	3,046	42.90
Total cost at approved forecast cost per unit	<b>71</b>	<b>1,140</b>	16.06
<b>Wildfire Tree Removals</b>			
Approved forecast (Table 1-5, Compliance forecast)	283	860	3.04
Actual (Table 1-2, 2020 Actual and 2021 MU)	120	397	3.31
Total cost at approved cost forecast per unit	<b>120</b>	<b>365</b>	3.04
Approved forecast (Table 1-5, Compliance forecast)	<b>410</b>	<b>2,900</b>	7.08
Total actual capital additions (\$3.046 (2020) + \$0.397 (2021) = \$3.443 less \$0.391 million in ending 2021 CWIP = \$3.052 added to rate base)	<b>191</b>	<b>3,052</b>	15.98
Total Commission-approved 2019-2021 capital additions calculated as \$1.140 + \$0.365 (approved forecast per unit times actual units completed)	<b>191</b>	<b>1,505</b>	

Source: Exhibit 26509-X0046, Table 1-2, 2020-2021 actual and forecast units and costs; Table 1-5, 2019-2021 approved (compliance) units and expenditures; Exhibit 26509-X0112, CRU CWIP continuity schedule, line 42 – 2019-2021 approved and actual capital expenditures and additions and closing 2021 CWIP.

148. AltaLink stated that the 2019-2020 cost increases were related mainly to the identification of larger areas of vegetation to be removed per unit than originally anticipated. AltaLink also restated and changed the defined work unit from the line segment basis approved in the previous GTA to a span basis in this GTA and converted the 2019-2021 forecast units to the restated unit definition.<sup>129</sup> AltaLink based its 2022-2023 capital forecasts for this project on the basis of the redefined and restated “span” unit.

149. The Commission does not approve AltaLink’s 2019-2021 capital additions as filed. The capital costs were determined using an updated workplan that restated and redefined work units. As noted above, it appears that the scope of the work previously approved by the Commission for this project was altered during the time it was to take place. In the case of the “Targeted ROW Improvements in HRFA” sub-project, AltaLink’s per unit costs have more than doubled from the \$16.06 per unit that was approved by the Commission in AltaLink’s last GTA to an actual per unit cost of \$42.06.

150. The Commission will instead rely on AltaLink’s approved (compliance) forecast per unit costs and the actual work achieved in 2019-2021 to determine the amount to be added to 2022 opening rate base. Accordingly, the Commission approves a capital addition in the amount of \$1.505 million for the two sub-projects within AltaLink’s Transmission Line Rights-of-Way Upgrades Program. As illustrated in Table 14 above, this amount has been determined, for each of the Targeted ROW Improvements and Wildfire Tree Removals project categories, by applying the respective previously approved forecast unit costs to the actual 191 units of work completed

<sup>129</sup> Exhibit 26509-X0046, PDF page 73, paragraph 7.

during the previous test period. For both of the project categories that are within the Transmission Line ROW Upgrades in HRFAs program, AltaLink is directed to reflect the amount of \$1.505 million in its 2022 opening rate base in its compliance filing.

151. As noted above, AltaLink redefined and restated its work units prior to 2022. In Section 10.2 of this decision, the Commission has approved AltaLink's forecast capital expenditures for 2022 and 2023 for the Transmission Line ROW Upgrades Program based on the redefined work units commencing in 2022. The Commission expects that AltaLink's work units will remain on a line span basis, and that AltaLink will provide a detailed prudence review on a line span basis in its next GTA filing.

## 9.6 Emergency spares inventory in opening 2022 rate base

152. For the reasons that follow, the Commission is not persuaded by the proposal of H. Mahmudov and J. Crozier, on behalf of the UCA, to direct AltaLink to remove \$9.1 million and any corresponding return and depreciation expense calculations from its 2022 opening rate base. With respect to a further \$8.6 million reduction requested by the UCA, the Commission accepts AltaLink's explanation that this matter related to a misclassification of an \$8.6 million customer contribution in its MFR schedules,<sup>130</sup> which does not affect AltaLink's net rate base or revenue requirement, and will be corrected by AltaLink in its compliance filing to this decision.<sup>131</sup>

153. The UCA recommended that AltaLink's opening 2022 rate base be reduced by \$9.1 million to remove the incorrect capitalization of emergency spares inventory. The UCA contended that this inventory should not be subject to return or depreciation expense until it is moved to AltaLink's plant in service as a capital asset.<sup>132</sup>

154. AltaLink contended that the \$9.1 million in actual capital additions, now included in 2022 opening rate base, is related to plant equipment held for emergency in stores. AltaLink submitted that the equipment is depreciable and is required to be on hand to support both emergency and ongoing transmission system work.

155. Bulletin 2006-25 and Section 17 of the Uniform System of Accounts provide the following Electric Plant Instructions:

### *17. Plant Equipment Held For Emergency in Stores.*

Plant equipment held for emergency in stores are non rotational in nature and are considered to be capital assets and as such are included in Plant in service. Plant equipment held for emergency in stores are depreciated at the standard rate for the specific asset class. Example items include transformers, meters, current transformers / potential transformers, circuit breakers, regulators, conductors, and tower materials. Utilities must disclose the value of emergency stores in each asset class, if requested.

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<sup>130</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 307, paragraph 1440, where it stated that "\$8.6M in customer capital additions related to customer projects were inadvertently included in Exhibit 26509-X0003: Schedules 3-2.2019 (ii) and 3-2.2020 (ii), instead of Exhibit 26509-X0003: Schedule 10-6."

<sup>131</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 307, paragraphs 1438-1440.

<sup>132</sup> Exhibit 26509-X0276, UCA evidence of H. Mahmudov and J. Crozier, PDF pages 8-10.

156. The Commission finds that the capitalization of AltaLink's plant equipment held for emergency in stores as reflected in its 2022 opening rate base is consistent with the above description.

157. While AltaLink did ultimately confirm that the \$9.1 million at issue was capitalized to specific USA accounts and depreciated at the standard rate, to improve regulatory efficiency, this information could have been provided from the outset by AltaLink in its application rather than having to be asked for these details in an IR.

158. The Commission requires AltaLink to track the amounts and USA accounts to which emergency spares inventory has been, and may be, capitalized in the future. This will allow a better understanding of AltaLink's inventory procurement and management practices. Therefore, the Commission directs AltaLink, in its compliance filing to this decision, to list the amounts capitalized by each USA in each applicable year both on an actual basis for 2019-2021 and on a forecast basis for 2022-2023. Further, at the time of its next GTA, the Commission directs AltaLink to provide the same information on an actual basis for the years 2022-2023 and on a forecast basis for the test years being applied for. AltaLink should also provide reasons for any capitalization of emergency spares inventory in addition to what has been capitalized in 2019-2021 and to explain how AltaLink differentiates between emergency spares inventory, and materials and supplies inventory included in Account 154 under the USA.

**10 Issue 6: Are AltaLink's 2022 and 2023 capital expenditures for its CRU program, WMP and IT program reasonable? Should a capital incentive mechanism be considered?**

159. AltaLink filed CWIP continuity schedules as supplemental information supporting its GTA.<sup>133</sup> The Commission found the CWIP continuity schedules to be helpful because they provided a concise summary, on a project-by-project basis, of AltaLink's actual and forecast capital expenditures and capital additions in a single location.

160. For this reason, the Commission considers AltaLink's CWIP continuity schedules to be an important component of its future GTA filings, as they will facilitate the efficient review of its capital programs. The Commission requires AltaLink in its future GTAs to file CWIP continuity schedules consisting of opening and closing CWIP balances, capital expenditures, and capital additions by individual project name and project number for all capital categories (CRU program, Wildfire Mitigation Plan (WMP), direct assigned, IT, facilities). The CWIP continuity schedules should also include prior test period actual and approved information, and current test period forecast information<sup>134</sup> consistent with the requirements of Bulletin 2006-25.

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<sup>133</sup> Exhibit 26509-X0112, CWIP continuity schedules.

<sup>134</sup> Proceeding 25726, ENMAX Power Corporation. 2021-2022 General Tariff Application Negotiated Settlement Agreement and Excluded Matters, Exhibit 25726-X0058 as an example for the level of project detail required as part of the CWIP schedules.

## 10.1 CRU program capital expenditure forecast

161. AltaLink’s CRU program consists of asset replacement and maintenance projects, and is designed to address deteriorating asset condition, safety, environmental and reliability obligations.

162. AltaLink requested approval of forecast capital expenditures of \$146.3 million in 2022 and \$151.9 million in 2023, for its programs and projects in its CRU program. This amount excludes the Wildfire Mitigation Plan, as this is a separate program discussed in Section 10.2 of this decision and is not included in the CRU program.

163. A summary of AltaLink’s forecast CRU expenditures is provided in the table below:

**Table 15. CRU forecast capital expenditures for 2022 and 2023**

	2022 Forecast	2023 Forecast
	(\$ million)	
Transmission Urgent Repair	8.5	8.6
Transmission Planned Maintenance	45.9	45.3
Substation Planned Maintenance	58.8	62.4
Telecom Planned Maintenance	12.2	12.2
Meter Replacements	0.7	0.9
System Control Centre Upgrades	7.5	8.6
Transmission Line Moves	3.7	3.9
Vehicles	2.9	4.1
Tools & Instruments	2.2	1.6
551L Rebuild	0.0	0.0
Line Clearance Mitigation	4.0	4.2
Wildfire Mitigation Plan	11.9	12.2
<b>Transmission Capital Maintenance</b>	<b>158.2</b>	<b>164.1</b>
Ring Road Project	0.0	0.0
<b>Capital Maintenance Total</b>	<b>158.2</b>	<b>164.1</b>
Line Move Customer Contribution	(1.1)	(1.1)
Ring Road Customer Contribution	0.0	0.0
<b>Net Transmission Capital</b>	<b>157.1</b>	<b>162.9</b>

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, Table 10.3-1, paragraph 667, PDF page 213.

164. The Commission finds the forecast CRU expenditures to be reasonable with the exception of the projects noted below.

### 10.1.1 Reliability as a driver for CRU programs

165. The Commission has carefully considered whether purported reliability benefits of AltaLink’s proposed CRU programs and projects were sufficiently supported by the evidence. It has weighed any asserted reliability benefits against the reasonability of the costs of the programs or projects proposed to achieve them.

166. Over 60 per cent of AltaLink’s forecast CRU expenditures are primarily driven by system performance, making it the largest primary driver of CRU expenditures.<sup>135</sup> However, AltaLink’s reliability has consistently been better than a composite of other Canadian utilities.<sup>136</sup> <sup>137</sup> With

<sup>135</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 248, paragraph 803.

<sup>136</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 86, Figure 1.10.1-2.

<sup>137</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 86, Figure 1.10.1-3.

respect to measures for both transmission delivery point outage duration (excluding major events) and outage frequency, AltaLink’s metrics were over four times better than the Canadian Electricity Association composite in 2018 and 2019.<sup>138</sup>

167. The Commission does not agree with AltaLink that these metrics have minimal relevance to its CRU expenditures. The Commission recognizes that reliability metrics may be lagging trends.<sup>139</sup> However, they are an indicator of what is actually occurring on AltaLink’s system, as opposed to the asset risk management process and leading indicators, which, while also potentially important considerations, are an effort to estimate what might occur in the future.

168. The Commission has exercised its discretion to deny certain forecast CRU capital expenditures where the purported reliability benefits were marginal or not sufficiently quantified or supported. To be clear, the Commission supports a strong focus on system reliability; however, the benefits of maintaining or increasing reliability must be weighed against the cost incurred to achieve it.

### 10.1.2 Rebuild Wood Pole Lines Program

169. AltaLink requested approval of forecast capital expenditures of \$20.70 million in 2022 and \$21.17 million in 2023 for its Rebuild Wood Pole Lines Program.<sup>140 141</sup> Under this program, AltaLink proposed to rebuild transmission lines where structures are made of wood poles and have deteriorated due to wear, can no longer be cost-effectively maintained by component or structure replacement, or no longer meet operating requirements.<sup>142</sup>

170. As illustrated in the table below, AltaLink proposed work on the following transmission line rebuilds in this test period:

**Table 16. Rebuild wood pole lines forecast capital expenditures for 2022 and 2023**

Line rebuilds	2022 Forecast	2023 Forecast
	(\$ million)	
54L	2.87	5.87
113L	11.34	0
150L	2.60	4.80
174L	3.40	0
757L	0.50	4.50
799L	0	6.00
<b>Total</b>	<b>20.70</b>	<b>21.17</b>

Source: Exhibit 26509-X0026, Appendix 13-A05, PDF page 47, Table 1-1.

171. The Commission approves all of the proposed line rebuild projects within this program, including AltaLink’s forecast capital expenditures for rebuilding a portion of transmission line 799L. However, the forecast capital expenditures for transmission line 799L are approved on the condition that AltaLink provide further information in its compliance filing.

<sup>138</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 86, Figure 1.10.1-2 and Figure 1.10.1-3.

<sup>139</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 85, paragraph 331.

<sup>140</sup> Exhibit 26509-X0026, Appendix 13-A05, PDF page 47, Table 1-1.

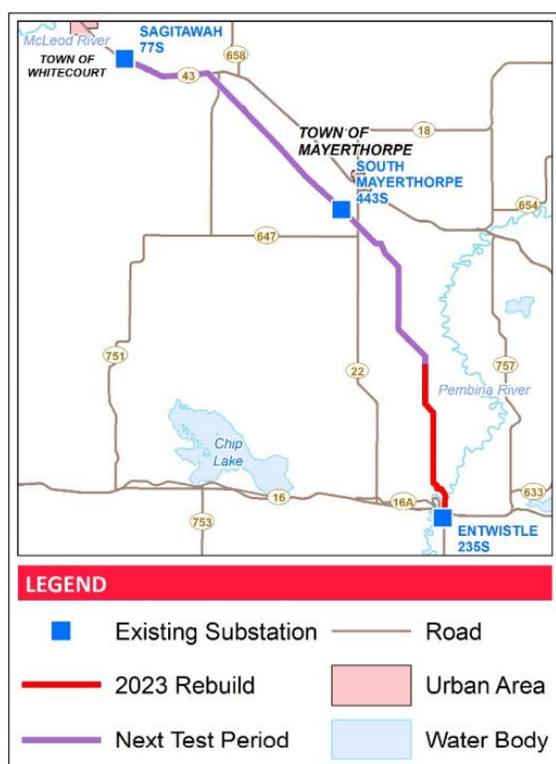
<sup>141</sup> AltaLink’s Rebuild Wood Pole Lines Program in Appendix 13-A05 is a sub-program within the Transmission Planned Maintenance program under CRU.

<sup>142</sup> Exhibit 26509-X0026, Appendix 13-A05, PDF page 45, paragraph 1.

172. AltaLink’s evidence is that transmission line 799L has the second highest probability of failure for a wood pole line in the AltaLink system. It has been identified in the top 10 per cent of all lines in AltaLink’s system for probability of failure.<sup>143</sup> In its compliance filing, the Commission requires AltaLink to explain why any other potential alternatives are not feasible, including the installation of two circuit breakers at the South Mayerthorpe 443S Substation.

173. Transmission line 799L is the only supply source to the South Mayerthorpe 443S Substation. That substation demarcates the north segment of transmission line 799L from the south segment. AltaLink proposed to rebuild the first 20 kilometres (km) of its south segment at a forecast capital expenditure of \$6.0 million in 2023, with the remainder of the 77 km of transmission line 799L to be rebuilt by segment in subsequent test periods.<sup>144</sup>

**Figure 1. AltaLink’s area map of transmission line 799L**



Source: Exhibit 26509-X0026, Appendix 13-A05, PDF page 86, Figure 1-30.

174. The system configuration for transmission line 799L does not have circuit breakers at the South Mayerthorpe 443S Substation. Any outage impacting either of the line segments interrupts the entire transmission line 799L from substations Sagitawah 77S to Entwistle 235S.<sup>145</sup> This configuration appears to be the limiting factor in providing reliable service in the area.

175. The configuration at South Mayerthorpe 443S Substation appears similar to the configuration described by AltaLink at the Niton 228S Substation.<sup>146</sup> There, AltaLink is

<sup>143</sup> Exhibit 26509-X0026, Appendix 13-A05, PDF pages 51-53, paragraph 17. Table 1-5.

<sup>144</sup> Exhibit 26509-X0026, Appendix 13-A05, PDF page 86, paragraph 134.

<sup>145</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-021(c), PDF page 65.

<sup>146</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF pages 187-188, paragraph 46.

proposing to install two line breakers to the 138 kilovolt (kV) transmission lines entering the Niton 228S Substation apparently at a cost of less than \$1 million.<sup>147</sup>

176. There are significant potential cost differences between rebuilding transmission line 799L and potential alternative solutions such as installing two circuit breakers at the South Mayerthorpe 443S Substation. Accordingly, in its compliance filing, the Commission directs AltaLink to explain in detail, why a solution similar to the proposed project for the Niton 228S Substation or any other potential alternative solutions, are not feasible for transmission line 799L. In its explanation, AltaLink should include the forecast costs of all potential alternative solutions examined.

### 10.1.3 Condition Monitoring Program

177. AltaLink requested approval of forecast capital expenditures of \$0.96 million in 2022 and \$1.14 million in 2023 for its Condition Monitoring Program. Under this program, AltaLink proposed to install and replace condition monitoring devices on its substation components to provide real-time information and to assist in identifying problems and potential failures. AltaLink proposed six different types of condition monitoring projects within this program.<sup>148</sup>

178. While the Commission approves the other proposed projects within the Condition Monitoring Program, for the reasons that follow, the Commission denies AltaLink's forecast capital expenditures in the test period for the geomagnetic disturbance (GMD) studies and mitigation project.

179. AltaLink requested approval of forecast capital expenditures of \$0.30 million and \$0.31 million in 2022 and 2023, respectively, for GMD studies and mitigation.<sup>149</sup> GMDs are temporary disturbances in the earth's electric and magnetic fields caused by solar activities, such as a solar flare. In some circumstances these disturbances are able to induce an electric current, referred to as a geomagnetically induced current (GIC), in conductive mediums such as a transmission line.<sup>150</sup> GICs are capable of causing damage to the transmission system and associated equipment, grid instability, and the operation of protection and control equipment.<sup>151</sup>

180. AltaLink has not filed evidence that sufficiently supports the proposition that the reliability risks associated with GMDs warrant the amount of forecast work and the associated capital expenditures in the test period. AltaLink did not provide sufficient evidence quantifying the potential effects to its power system, and only cited general problems that GMDs can cause. AltaLink cited a preliminary study, which determined GIC levels for four transformers could exceed an unspecified benchmark<sup>152</sup> if a certain event<sup>153</sup> occurred. AltaLink did not explain the likelihood of such an event occurring or the expected ramifications and impacts. The

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<sup>147</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-029(b), PDF pages 120-121; Exhibit 26509-X0026, Appendix 13-A12, PDF page 174, Table 1-1, row "138 kV Breakers;" See also, Decision 23131-D01-2017: East Edmonton 38S Substation Upgrade, Letter of enquiry approval, December 4, 2017.

<sup>148</sup> Exhibit 26509-X0026, Appendix 13-A06, PDF pages 101-102, paragraphs 1 and 3, Table 1-1.

<sup>149</sup> Exhibit 26509-X0026, Appendix 13-A06, PDF page 101, Table 1-1.

<sup>150</sup> Exhibit 26509-X0026, Appendix 13-A06, PDF page 101, paragraph 1.

<sup>151</sup> Exhibit 26509-X0026, Appendix 13-A06, PDF pages 104-105, paragraphs 16-18.

<sup>152</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 9, paragraph 13.

<sup>153</sup> Proceeding 23848, Exhibit 23848-X0062, AML-AUC-2018OCT31-067(c), PDF pages 146-147.

Commission is also not persuaded that a significant risk exists in delaying the work forecast in this test period. AltaLink itself chose to defer these activities from the prior test period.<sup>154 155</sup>

181. Further, the Commission does not view that the work and requested capital expenditures are necessary for AltaLink to better understand the risks associated with GMDs. By the end of the current test period, AltaLink will have potentially installed GMD monitors on seven of its 12 identified at-risk transformers.<sup>156</sup> The Commission considers that AltaLink can analyze the data provided by these monitors to determine the extent to which AltaLink's system is exposed to the risks from GMDs, and whether the readings correlate with the expectations from its study. The Commission considers that this should be completed before AltaLink continues to install additional GMD monitors, acquire additional simulation software, and complete more comprehensive modelling.

182. The Commission considers it premature for AltaLink to undertake work targeted at complying with this North American Electric Reliability Corporation (NERC) reliability standard EOP-010-1 (Geomagnetic Disturbance Operations). The AESO has not yet started consultation on an equivalent standard.<sup>157</sup> Therefore, the GMD studies and mitigation projects are not necessary for AltaLink to comply with a legal requirement.

183. Accordingly, AltaLink is directed to remove its forecast capital expenditures of \$0.30 million in 2022 and \$0.31 million in 2023 in its compliance filing.

#### 10.1.4 Substation Components Program

184. AltaLink requested approval of forecast expenditures of \$12.77 million in 2022 and \$12.42 million in 2023 for its Substation Components Program.<sup>158</sup> Under this program, AltaLink proposed to repair, replace and/or add various types of substation components based on their condition and functional performance.<sup>159</sup> The component types were grouped into 11 different project types within AltaLink's Substation Components Program.<sup>160</sup>

185. While the Commission approves the other substation component projects within the Substation Components Program, for the reasons that follow, the Commission:

- (i) requires AltaLink to adjust its forecast capital expenditures for Battery Bank and Charger Replacement projects in this test period;
- (ii) denies AltaLink's forecast capital expenditures in the test period for the Secondary Station Service projects; and

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<sup>154</sup> The same activities were forecasted in the last test period, see Proceeding 23848, Exhibit 23848-X0017.01, Appendix 13-A06, PDF page 61, paragraph 16.

<sup>155</sup> AltaLink forecast to spend \$1.8 million during 2019-2021 per Proceeding 23848, Exhibit 23848-X0017.01, Appendix 13-A06, PDF page 58, Table 1-1 and now expects to spend \$0.5 million in 2019-2021 per Exhibit 26509-X0026, Appendix 13-A06, PDF page 102, paragraph 3, Table 1-2.

<sup>156</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 10, paragraph 18.

<sup>157</sup> <https://www.aeso.ca/assets/LARA-Rules-and-ARS/December-2021-ARS-Work-Plan.pdf>

<sup>158</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 114, paragraph 11, Table 1-1.

<sup>159</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 111, paragraph 1.

<sup>160</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 111, paragraph 1.

- (iii) denies AltaLink's forecast capital expenditures in the test period for seven specific Wildlife Mitigation projects (as a sub-category of AltaLink's General Substation Components Project).

### **Battery bank and charger replacements**

186. AltaLink requested approval of forecast capital expenditures of \$1.34 million in 2022 and \$1.37 million in 2023 for the replacement of substation battery banks and chargers.<sup>161</sup>

A substation's battery bank provides power necessary to operate critical equipment such as relays and breaker control mechanisms when the substation's station service is inoperative. The battery chargers maintain the charge of the battery bank when station service is operating.

187. AltaLink's experience is that battery banks need to be,<sup>162</sup> and have historically been,<sup>163</sup> replaced at 20 years of age. Due to a larger number of battery banks reaching 20 years of age or more in the test period, AltaLink forecast an increased number of battery banks and chargers to replace.<sup>164</sup> Approximately six battery banks and chargers were replaced per year during the 2019 to 2021 period, whereas AltaLink has forecast 15 similar replacements per year during this test period.<sup>165</sup>

188. Naval Tauh, on behalf of the CCA, submitted that in his experience a well-managed battery maintenance program typically yields approximately 30 years of life for batteries. Accordingly, the CCA recommended a 30 per cent reduction to AltaLink's forecast capital expenditures for battery replacements.<sup>166 167</sup>

189. AltaLink and the CCA provided differing estimates as to the expected lifespan of batteries. The Commission considers that the claims made by AltaLink and the CCA were both based on experience. In this regard, it is noteworthy that N. Tauh has approximately 23 years of relevant experience working at utilities operating in a similar environment to AltaLink.<sup>168</sup>

190. The Commission finds that the midpoint between the lifespans recommended by AltaLink and the CCA (of 20 years and 30 years, respectively) to be reasonable. This equates to an expected battery lifespan of 25 years. With a battery lifespan of 25 years, AltaLink's replacement rate would, on average, be approximately 20 per cent lower than its current practice.<sup>169</sup> Accordingly, the Commission considers it reasonable for AltaLink's forecast expenditures on battery bank and charger replacement to be reduced by 20 per cent. The

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<sup>161</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 114, paragraph 1, Table 1-1.

<sup>162</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 118, paragraph 24.

<sup>163</sup> Exhibit 26509-X0125, AML-UCA-2021JUN25-015(b), PDF page 58.

<sup>164</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 116, paragraph 14.

<sup>165</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 115, Table 1-2.

<sup>166</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 22, paragraphs 60-61.

<sup>167</sup> This was recommended on the basis the batteries were missing out on 30 per cent of their service by adopting AltaLink's replacement strategy.

<sup>168</sup> Exhibit 26509-X0278, CVs for Bema Consultants, PDF pages 5-6.

<sup>169</sup> A 20-year service life equates to an average of  $1/20 = 0.05$  replacements per year for every in-service battery bank. Likewise a 25-year service life equates to  $1/25 = 0.04$  replacements per year, or 20% fewer replacements than under a 20-year service life.

Commission approves capital expenditures for battery and charger replacements of \$1.07 million<sup>170</sup> in 2022 and \$1.10 million<sup>171</sup> in 2023.

191. However, given the large number of batteries AltaLink expects to replace in the near term, the Commission considers it necessary for AltaLink to explore approaches to maximize the lifespan of its batteries. In future GTAs, the Commission expects AltaLink will support its Battery Replacement Program with concrete data and analysis. AltaLink has a battery testing program, has installed battery monitors at a number of its substations, and can (in either a destructive or non-destructive manner) randomly test batteries as it removes them from service when they are replaced. These activities provide sources of data AltaLink can use to gain insights into the actual lifespans of batteries and to assess the effectiveness, and suitability, of different battery replacement methodologies. Accordingly, the Commission directs AltaLink to provide details on how it has used actual test results and observed failures to determine any battery bank and charger replacements it proposes in its next GTA.

### **Engineering standards**

192. As a subcategory of AltaLink's General Substation Components Project, AltaLink requested approval of forecast capital expenditures of \$0.68 million and \$0.70 million in 2022 and 2023, respectively, to develop and update engineering standards, drawings and specifications documents.<sup>172</sup>

193. These documents detail standard designs and materials that are used as the basis for all new design and construction work to be undertaken by AltaLink, or its contractors, to achieve efficiencies in design and ensure safety features are consistently applied.<sup>173</sup> Also included in this project are drafting updates to facility drawings to reflect equipment installed during urgent maintenance and repairs, or equipment that was not accurately captured during historic projects.<sup>174</sup>

194. N. Tauh, on behalf of the CCA, proposed that the capital expenditures for engineering standards be denied as they do not qualify as capital, and should be recorded as an O&M expense as they are not directly attributable to the construction or purchase of an asset.<sup>175</sup>

195. Given that the engineering standards are primarily used by projects as a design basis to install new assets, and the drafting updates relate to ensuring AltaLink's drawings reflect the as-built configuration of its facilities, the Commission agrees that these projects meet AltaLink's capitalization criteria. Accordingly, the projects and related expenditures outlined in AltaLink's business case in support of this category of expenditure are approved.

### **Secondary station service**

196. AltaLink requested approval of forecast capital expenditures of \$0.80 million in 2022 and \$0.82 million in 2023 to install a second (i.e., redundant) station service at four existing

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<sup>170</sup> Calculated as:  $0.8 \times 1.34$ .

<sup>171</sup> Calculated as:  $0.8 \times 1.37$ .

<sup>172</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF pages 112 and 121, paragraphs 9 and 33, Table 1-7.

<sup>173</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 66, paragraph 301.

<sup>174</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 66, paragraph 303.

<sup>175</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 23, paragraphs 64-65.

substations.<sup>176</sup> A substation's station service provides a low voltage AC supply to power substation devices and equipment. Substations are generally equipped with battery banks to provide continuous power to critical devices, for a limited time, when a substation's AC supply is inoperative. Some substations have multiple sources of station service for redundancy.

197. The Commission is not persuaded that secondary station service is required at these substations. AltaLink cited a specific contingency scenario as support for the installation of secondary station service at these substations.<sup>177</sup> However, AltaLink has not recorded any instance of this specific scenario occurring in the last 10 years.<sup>178</sup> This suggests to the Commission that this type of event has a very low probability of occurrence.

198. Current contingency measures are sufficient to address the scenario identified by AltaLink. AltaLink currently, and has historically, used mobile generators to provide power to a substation when its low voltage AC supply is lost. AltaLink cited a number of detriments to the use of mobile generators such as having to remove snow, periodic refueling requirements, difficulty starting in the cold, and the unplanned nature of the work.<sup>179</sup> However, the Commission has insufficient information to suggest these detriments are anything more than inconveniences. AltaLink did not provide a cost-benefit analysis to demonstrate that the additional costs associated with the use of mobile generators when required would outweigh the costs of installing a second station service.

199. Currently, there is no legal requirement for AltaLink's substations to have two sources of station service. The AESO has a draft rule that would require certain new substations to have two sources of station service. AltaLink considered it good industry practice to implement this standard at its existing substations<sup>180</sup> notwithstanding that the draft rule is not expected to apply to existing substations.<sup>181</sup>

200. Accordingly, the Commission denies AltaLink's forecast capital expenditures for the Secondary Station Service projects in the 2022-2023 test period. AltaLink is directed to remove its forecast capital expenditures in the amount of \$0.80 million in 2022 and \$0.82 million in 2023 in its compliance filing.

### **Wildlife mitigation**

201. As a subcategory of its General Substation Components Project, AltaLink requested approval of forecast capital expenditures of \$0.74 million and \$0.96 million in 2022 and 2023, respectively, for its Wildlife Mitigation Program.<sup>182</sup> Under this project, AltaLink proposed to

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<sup>176</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 114, paragraph 11, Table 1-1.

<sup>177</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 123, paragraph 34.

<sup>178</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-026(b), PDF pages 97-98.

<sup>179</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-026(c), PDF page 98.

<sup>180</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-026(a), PDF page 97.

<sup>181</sup> The referenced draft standard states that it does not apply to a substation transmission facility: (a) that was built in accordance with a previous technical requirement, technical standard, or ISO rule; or (b) with a functional specification that refers to a previous technical requirement, technical standard, or ISO rule.

<sup>182</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 121, paragraph 11, Table 1-7.

mitigate the risk of birds, and other animals, contacting energized substation components at 17 sites<sup>183</sup> by installing covers on its bushings, insulators and other substation equipment.<sup>184</sup>

202. Wildlife contacts are a significant contributor to the number and duration of outages at AltaLink’s substations.<sup>185</sup> AltaLink’s evidence shows that since starting its Wildlife Mitigation Program in 2010, AltaLink has achieved a significant reduction in the number of wildlife outages per delivery point.<sup>186</sup> However in recent years, the number of wildlife outages per delivery point has been relatively consistent despite continued capital expenditures on wildlife mitigation.

203. AltaLink considers the frequency and location of a wildlife related outage to determine the number of sites per year where wildlife mitigation measures are required.<sup>187</sup> The following table illustrates AltaLink’s outage frequency at the 17 sites targeted for wildlife mitigation in the test period:

**Table 17. Wildlife mitigation sites for 2022 and 2023**

Site	Bird contact frequency (outages/year)	Work planned with other site activities
171S Redwater	0.25	
746S Sherwood park	0.06	Yes
678S Okotoks	0.1	
37S North Calder	0.25	Yes
421S Hays	0.15	
28S West Brooks	0.15	
99S North St. Albert	0.06	Yes
659S Pegasus Lake	0.25	Yes
151S Strathmore	0.25	Yes
38S East Edmonton	0.06	Yes
799S Coleman	0.06	Yes
54S Fort Saskatchewan	0.06	Yes
69S North Barrhead	0.1	Yes
68S Willesden Green	0.1	Yes
899S Edgerton	0.06	Yes
199S East Airdrie	0.1	
107S Westfield	0.06	Yes

Source: Exhibit 26509-X0233, AML-AUC-2021AUG20-026 (f), PDF page 100.

204. For sites that have no recent bird contacts, AltaLink used the system average bird contact frequency<sup>188</sup> rather than reporting these sites to have an observed bird contact frequency of zero. This suggests that some of the sites where AltaLink is planning to install wildlife mitigation have no observed bird contacts. It is unclear why AltaLink would install wildlife mitigation measures at these sites as opposed to focusing on sites that have higher incidences of observed bird contacts.

205. Reviewing the table above, the Commission infers that the sites with no observed bird contacts would be those with 0.06 outages per year. This equates to approximately one outage

<sup>183</sup> Exhibit 26509-X0233, AML-AUC-2021AUG20-026(f), PDF page 100.

<sup>184</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 112, paragraph 9.

<sup>185</sup> Exhibit 26509-X0233, AML-AUC-2021AUG20-026(e), PDF pages 99-100.

<sup>186</sup> Exhibit 26509-X0233, AML-AUC-2021AUG20-026(d), PDF page 99, Figure 1-2.

<sup>187</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF pages 120-123, paragraph 33.

<sup>188</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-026(f), PDF page 100.

every 17 years. This is a relatively low probability event compared to other sites identified in the table. The Commission does not consider these proposed capital expenditures reasonable when the expected benefits are low or unquantified. Accordingly, the Commission denies the forecast wildlife mitigation expenditures for the following seven sites: 746S, 99S, 38S, 799S, 54S, 899S and 107S. AltaLink is directed to remove all forecast capital expenditures associated with these sites in its compliance filing.

### 10.1.5 SCADA Equipment Program

206. AltaLink requested approval of forecast capital expenditures of \$4.65 million in 2022 and \$6.65 million in 2023 for its SCADA [supervisory control and data acquisition] Equipment Program.<sup>189</sup> Under this program, AltaLink proposed to replace various types of SCADA components such as Remote Terminal Units (RTUs), gateways, servers, substation Human Machine Interfaces (HMIs), input/output (I/O) devices, satellite clocks, remote access management systems, substation Local Area Network (LAN) equipment, and related wiring, cabinets, and racks.<sup>190</sup> AltaLink categorized the its SCADA replacements into three project categories, according to their scope, complexity, and site size: small sites, medium sites and large sites.<sup>191</sup>

207. For the reasons that follow, the Commission approves forecast capital expenditures of \$3.8 million in 2022 and \$3.8 million in 2023 for the SCADA Equipment Program.

208. AltaLink forecast an increase in expenditures in the test period for this program. Comparatively, AltaLink's forecast expenditures are higher by approximately 22 per cent<sup>192</sup> (in 2022) and 75 per cent<sup>193</sup> (in 2023) than its expected expenditures in 2021 for this program.

209. AltaLink cited the following factors as driving an increased number of upgrades in the test period: (i) the trend in high-priority notifications;<sup>194</sup> (ii) the need to replace systems reaching or exceeding their expected service lives in a timely manner to avoid failures;<sup>195</sup> (iii) discontinuance of support for a particular RTU model;<sup>196</sup> and (iv) required upgrades of the HMIs at its high-voltage direct current (HVDC) converter stations.<sup>197</sup>

210. The Commission does not consider the increase in the number of SCADA upgrades to be supported by the evidence provided by AltaLink.

211. Regarding the high-priority notifications, the Commission is not persuaded they warrant increased SCADA system replacements. Notifications are deficiencies identified through inspections and ongoing operating activities. In AltaLink's view, notifications provide both an

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<sup>189</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 140, Table 1-1.

<sup>190</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 139, paragraph 2.

<sup>191</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 139, paragraph 3.

<sup>192</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 141, Table 1-3.

<sup>193</sup> Calculated as:  $6.65/3.80 - 1 = 75$  per cent.

<sup>194</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 142, paragraph 10.

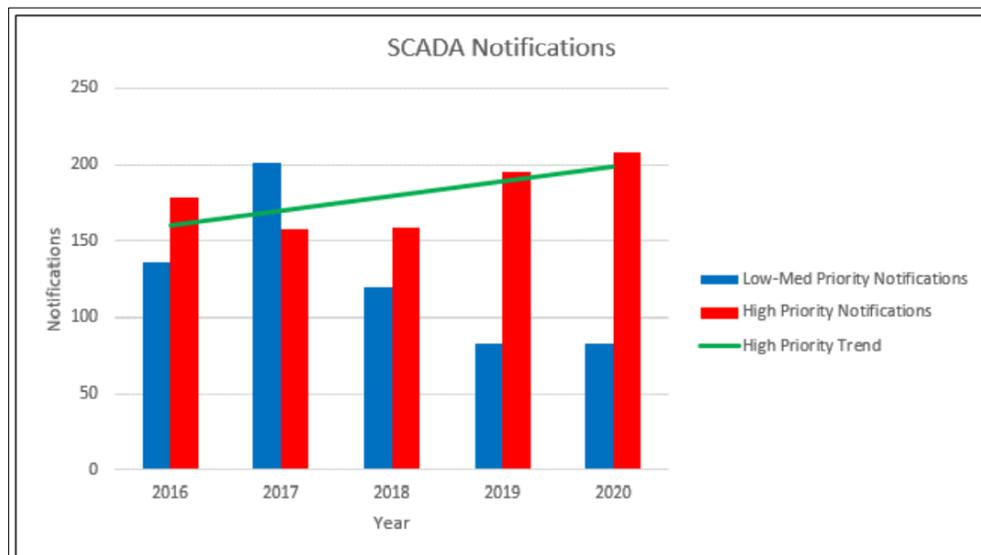
<sup>195</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 143, paragraph 13.

<sup>196</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 143, paragraph 15.

<sup>197</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 141, paragraph 7.

indication of asset condition/performance and are a leading indicator for future maintenance or investment requirements.<sup>198</sup> The figure below shows a five-year trend for SCADA notifications:

**Figure 2. SCADA notifications trend in 2016 to 2020**



Source: Exhibit 26509-X0026, Appendix 13-A09, PDF page 142, Figure 1-1.

212. The Commission does not find that Figure 2 supports the conclusion there is an upward trend in SCADA notifications. Prior to 2019, high-priority notifications were decreasing, but then increased in 2019 and 2020. The Commission does not consider two years of increased high-priority notifications to be sufficient to conclude a sustained upward trend exists.

213. Further, the Commission agrees with N. Tauh, on behalf to the CCA, that the notifications, as presented by AltaLink, are vague and lack context.<sup>199</sup> The Commission finds conclusions cannot be drawn as to the underlying causes of changes in the number of notifications (even when they are broken down to a slightly more granular level, as provided by AltaLink in an information response)<sup>200</sup> because the descriptors AltaLink used provide few details as to what the issues actually were. Regardless, the Commission notes that numerous items for which AltaLink records notifications may not be indicative of the need to replace a device. Items such as requests to modify settings and configuration files, planned maintenance activities being completed and tests of fault reporting capabilities<sup>201</sup> do not necessarily indicate the need to replace SCADA devices in the future.

214. The Commission is also concerned that AltaLink has not provided all readily available data to explain what is giving rise to these notifications such that the Commission could better understand them. AltaLink filed a spreadsheet of SCADA notifications.<sup>202</sup> The spreadsheet apparently had multiple tabs; however, AltaLink only provided one tab on the record of this proceeding. It made a notation, presumably for internal purposes, that stated “Delete other tabs

<sup>198</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 237, paragraphs 778-779.

<sup>199</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 40, paragraph 127.

<sup>200</sup> Exhibit 26509-X0236, AML-AUC-2021AUG20-027 Attachment, SCADA Notification List.

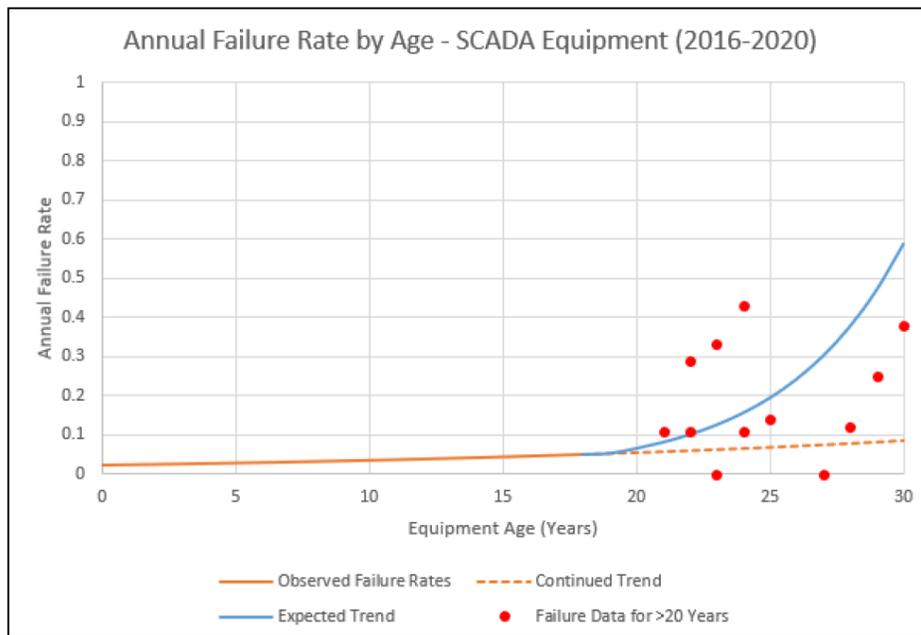
<sup>201</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-027(a), PDF page 104.

<sup>202</sup> Exhibit 26509-X0236, AML-AUC-2021AUG20-027 Attachment, SCADA Notification List.

before filing” with four exclamation marks in size 54 font. These “other tabs” may have facilitated a better understanding of the nature and underlying cause for SCADA notifications.

215. The Commission is not persuaded that increased SCADA replacements are necessary to address devices reaching the end of their expected service lives. In support of its stated expected service life of 20 years, AltaLink analyzed the actual SCADA failures observed, and generated the failure rate curves shown in the figure below:

**Figure 3. SCADA equipment failure rate curves**



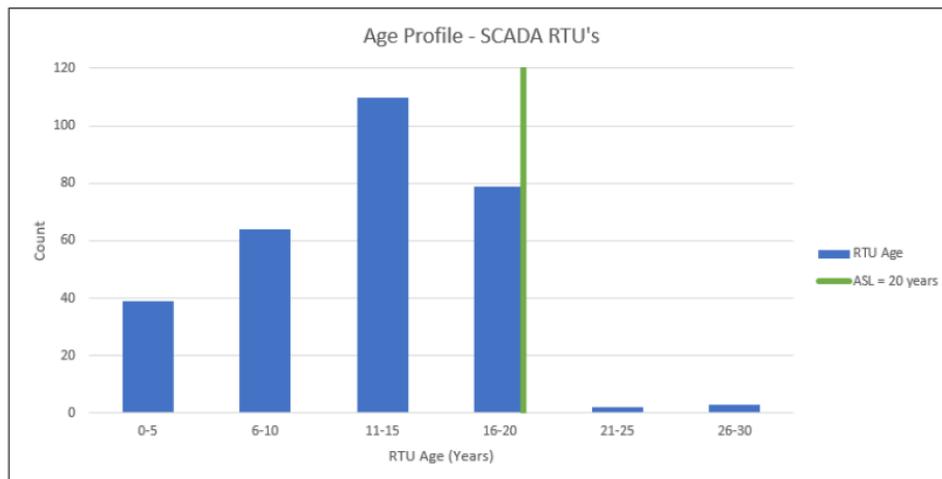
Source: Exhibit 26509-X0223, AML-AUC-2021AUG20-027(d), PDF page 107, Figure 1.

216. To generate the “expected trend” curve in Figure 3, AltaLink relied on observed failures of three of its oldest SCADA systems over the last four years.<sup>203</sup> These failures are depicted by the red dots in Figure 3 above. Approximately 97 per cent of AltaLink’s SCADA equipment is 18 years old or less.<sup>204</sup> Accordingly, AltaLink has minimal data on SCADA systems older than 20 years, as shown in the figure below.

<sup>203</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-027(d), PDF page 106.

<sup>204</sup> Exhibit X0144, AML-ADC-2021JUN25-011(b), PDF page 46.

Figure 4. Age profile of SCADA RTUs



Source: Exhibit 26509-X0026, Appendix 13-A09, PDF page 143, Figure 1-2.

217. Given the minimal number of SCADA systems that have been in service for more than 20 years, the Commission considers that AltaLink’s failure data for assets of this vintage is insufficient to produce an accurate failure rate curve. Indeed, AltaLink acknowledged the data was too volatile to be fit using a typical numerical regression and had to use a “visual fit” to create the “expected trend” curve.<sup>205</sup>

218. The Commission notes, however, that the higher number of observed failures on these three SCADA systems suggest that replacement of these systems in the near term may be reasonable. However, AltaLink is proposing to upgrade SCADA systems at 27 sites<sup>206</sup> in the test period, far more than would be necessary to address these three poor-performing systems. As AltaLink has admitted, the “observed trend” curve, represented by the solid orange line in Figure 3, for which AltaLink had sufficiently more data points to generate, does not support the requirement to replace SCADA devices at a specific age.<sup>207</sup>

219. The Commission does not view the failure rate AltaLink is currently experiencing supports the need for increased SCADA replacements. AltaLink has approximately 4,700 pieces of SCADA equipment in service. Over the last five years, approximately 650 SCADA failures have been observed, corresponding to an annual failure rate of three per cent.<sup>208</sup> Based on AltaLink’s failure rate curves, the Commission notes, on aggregate, AltaLink’s SCADA equipment has a failure rate similar to that of a device that has been in service for eight years.<sup>209</sup> As such, even if AltaLink replaced all of its SCADA devices immediately, its total failure rate would only be expected to decrease to two per cent,<sup>210</sup> or to approximately 87 failures per year.<sup>211</sup> The Commission considers this to be a minimal improvement over the current rate of 130

<sup>205</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-027(d), PDF page 107.

<sup>206</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 140, Table 1-1.

<sup>207</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-027(e), PDF page 107.

<sup>208</sup> Exhibit 26509-X0144, AML-ADC-2021JUN25-011(b), PDF page 46.

<sup>209</sup> Exhibit 26509-X0144, AML-ADC-2021JUN25-011(b), Figure 1: The ‘Best-Fit Curve’ passes through 3 per cent approximately at age eight.

<sup>210</sup> Exhibit 26509-X0144, AML-ADC-2021JUN25-011(b), Figure 1: Value of the ‘Best-Fit Curve’ at age 0.

<sup>211</sup> Calculated as:  $4700 \times 0.02 = 87$ .

failures per year,<sup>212</sup> when compared to the costs required to replace all of AltaLink’s SCADA devices.

220. Further, of the failures that occurred, only about half of them required replacement of a device or component. The other half were addressed by actions such as calibrating the device, cleaning electrical contacts, rebooting or reloading software, changing the device settings, or updating the device firmware.<sup>213</sup> None of the SCADA failures resulted in an outage to a transmission facility. By their nature, failure of SCADA devices generally only cause AltaLink’s control centre to lose visibility of field devices.<sup>214</sup> While AltaLink must comply with SCADA availability and mean time to repair requirements established in Independent System Operator (ISO) Rule 502.8,<sup>215</sup> AltaLink did not provide evidence to demonstrate that it has not met, or is expected to have difficulty meeting, these targets.

221. With respect to the RTU whose support has been discontinued by the manufacturer, the Commission does not find that AltaLink has provided a sufficient explanation as to how this discontinuation translated into the replacements forecast in the test period. When asked to provide an analysis, AltaLink referred the Commission to a general description of how it determined its proposed SCADA replacements.<sup>216</sup> It is unclear how AltaLink specifically accounted for relevant factors such as available spares and expected failure rates to determine its replacement plan for this RTU.

222. Regarding the replacement of the HMIs at the HVDC converter stations, the Commission acknowledges a project to address the noted issues may be warranted, but finds AltaLink has not provided sufficient detail to support a conclusion that the proposed expenditures are reasonable.

223. Replacement of these HMIs was proposed because the operating system they run on is no longer supported by the manufacturer, and the industrial PCs they utilize are reaching end of life.<sup>217</sup> AltaLink forecast the replacement of these HMIs as two Large SCADA site upgrades in 2023,<sup>218</sup> suggesting unit costs of approximately \$0.79 million each,<sup>219</sup> and noting the expenditures are only to “initiate” the upgrade of these HMIs.<sup>220</sup> AltaLink based its estimates on preliminary scope reviews with the equipment manufacturer.

224. The Commission finds the magnitude of these expenditures to be concerning given the HMIs were installed in 2014,<sup>221</sup> and it is not clear to the Commission what the total costs of the project will be. Accordingly, the Commission finds additional justification is needed for the proposed expenditures on the HVDC HMI upgrades, including details regarding the projects’ scope of work, total costs, alternatives explored and how AltaLink will mitigate against these HMIs needing frequent and costly replacement in the future.

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<sup>212</sup> Calculated as:  $650/5 = 130$ .

<sup>213</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-027(c), PDF page 105.

<sup>214</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-027(c), PDF page 105.

<sup>215</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF pages 147-148, paragraph 34.

<sup>216</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-027(g) (iv), PDF page 110.

<sup>217</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 146, paragraph 27.

<sup>218</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 141, paragraph 7.

<sup>219</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 140, Table 1-1.

<sup>220</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 141, paragraph 7.

<sup>221</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF page 146, paragraph 27.

225. Respecting the other SCADA upgrades proposed in the test period, the Commission finds that there is insufficient evidence to justify the specific upgrades proposed. AltaLink provided quantities, but did not identify which SCADA system it plans to upgrade in the test period. AltaLink listed numerous technical drivers<sup>222</sup> for SCADA upgrades; however, the Commission does not find these helpful, because it is not apparent whether, and how, they apply to the specific projects proposed in the test period. These technical drivers are essentially a list of some of the issues that can be present in certain older types of SCADA equipment, and a description of what upgrades AltaLink makes to rectify the issues. The listed security, reliability and economic drivers<sup>223</sup> are similarly not sufficiently specific.

226. Based on the foregoing, the Commission finds SCADA expenditures in each of 2022 and 2023 of \$3.8 million per year, the same as AltaLink's expected expenditures in 2021, to be reasonable. The Commission directs AltaLink, in its compliance filing, to revise its 2022 and 2023 forecast capital expenditures for the SCADA Equipment Program to total its 2021 management update capital expenditure amount of \$3.8 million for each year in the test period.

#### **10.1.6 Telecommunication Equipment Program**

227. AltaLink requested approval of forecast capital expenditures of \$9.56 million in 2022 and \$9.58 million in 2023 for its Telecommunication Equipment Program.<sup>224</sup> Under this program, AltaLink proposed to upgrade and repair, replace and/or add components to its existing telecommunication facilities.<sup>225</sup> AltaLink relies on its telecommunication network to communicate with its substations, and for communication between substations.

228. While the Commission approves the other telecommunication equipment projects within this program, for the reasons that follow, the Commission denies AltaLink's forecast capital expenditures in the test period for Low Capacity Radio Hops projects.

#### **Telecom pole replacements**

229. AltaLink requested approval of forecast capital expenditures of \$0.40 million in 2022 and \$0.47 million in 2023 for telecom pole replacement projects at two locations within its system.<sup>226</sup>

230. Wood poles are used to support telecom equipment such as antennas or radios at some substations. Over time, the condition of these poles deteriorates, resulting in twisting and tilting of the pole, causing antennas to become misaligned.<sup>227</sup>

231. In the test period, AltaLink proposed to replace wood pole telecommunication towers with self supported steel towers at two locations: 445S Elk River and 99S St. Albert.<sup>228</sup>

232. N. Tauh, on behalf of the CCA, submitted that the proposed capital expenditure for steel towers was unreasonable when compared to the cost of replacing the poles with another wood pole. Alternatively, the CCA suggested that composite poles could be used, as these have been

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<sup>222</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF pages 144-146, paragraphs 17-25.

<sup>223</sup> Exhibit 26509-X0026, Appendix 13-A09, PDF pages 147-148, paragraphs 28-38.

<sup>224</sup> Exhibit 26509-X0026, Appendix 13-A10, PDF page 153, Table 1-1.

<sup>225</sup> Exhibit 26509-X0026, Appendix 13-A10, PDF page 152, paragraph 1.

<sup>226</sup> Exhibit 26509-X0026, Appendix 13-A10, PDF page 153, Table 1-1, row "Pole Replacements."

<sup>227</sup> Exhibit 26509-X0026, Appendix 13-A10, PDF page 158, paragraphs 22-23.

<sup>228</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 78, paragraph 362.

employed by other distribution and transmission utilities.<sup>229</sup> Based on the CCA's estimated pole installation cost, it recommended capital expenditures be reduced to \$0.27 million for each location.<sup>230 231</sup>

233. AltaLink proposed to replace these wood poles with steel lattice towers because, based on its engineering judgment, in these circumstances, wood poles would not be sufficient to support radio equipment causing it to deflect and lose functionality.<sup>232</sup> It further indicated that microwave radio links have very limited tolerance to deflections and movements of the structure.<sup>233</sup> Additionally, due to site-specific space constraints at the 445S Elk River and 99S St. Albert locations, AltaLink determined that guyed steel towers were not suitable.<sup>234</sup> Given these site-specific requirements, the Commission considers it reasonable for the wood poles to be replaced with steel lattice towers, and is therefore not persuaded by the CCA's argument.

234. The Commission observes that a commercial telecom tower is directly adjacent to the 99S St. Albert Substation.<sup>235</sup> AltaLink did not explain whether it attempted to negotiate a joint-use agreement with the owner of this tower, which could allow AltaLink to place its radios on the tower. Given the expenditures necessary to install a new structure, the Commission directs AltaLink to provide evidence that it has explored this option when applying for its opening rate base in its next GTA.

### **Low capacity radio hops**

235. AltaLink requested approval of forecast capital expenditures of \$1.18 million in 2022 and \$1.26 million in 2023 for low capacity radio hop replacement projects.<sup>236</sup> Under these projects, AltaLink would replace satellite, ultra-high frequency, and dial-up connections with an ethernet radio solution.<sup>237 238</sup> AltaLink cited reliability and security concerns, as well as cost-effectiveness, as support for the proposed low capacity radio hop projects.

236. AltaLink indicated that replacing the low capacity connections at these sites will provide remote access to the devices at these substations, which is not possible with the existing radios. Additionally, the new connections will have voice and metering access channels, which will eliminate the need for a conventional telephone line to the substation and the monthly phone charges at these sites.<sup>239</sup> The savings associated with these benefits were not quantified by AltaLink.

237. The CCA submitted that there is little risk in not undertaking these projects because AltaLink supplied no evidence of performance deficiencies. The CCA stated that AltaLink

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<sup>229</sup> For example, EPCOR Distribution & Transmission Inc.

<sup>230</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF pages 26-27, paragraphs 75-77.

<sup>231</sup> Exhibit 26509-X0293, CCA-AUC-2021SEP24-038(b), PDF page 22.

<sup>232</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 78, paragraph 360.

<sup>233</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 78, paragraph 360.

<sup>234</sup> Exhibit 26509-X0144, AML-ADC-2021JUN25-012(a), PDF page 52.

<sup>235</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 78, Figure 4-2.

<sup>236</sup> Exhibit 26509-X0026, Appendix 13-A10, PDF page 153, Table 1-1.

<sup>237</sup> Exhibit 26509-X0026, Appendix 13-A10, PDF page 156, paragraph 6.

<sup>238</sup> Exhibit 26509-X0026, Appendix 13-A10, PDF page 159, paragraph 29.

<sup>239</sup> Exhibit 26509-X0026, Appendix 13-A10, PDF page 159, paragraph 29.

would have sufficient spares on hand to continue using existing units and recommended that the projects be denied in their entirety.<sup>240</sup>

238. In response, AltaLink explained that availability of spare components is not an issue and that the projects are driven by “updating less reliable telecommunication functionality with more cost effective and sustainable design solutions ...”<sup>241</sup> AltaLink stated that it is the technology that requires replacement.<sup>242</sup>

239. AltaLink has not demonstrated that the reliability of these connections is unacceptable or hindering its ability to safely operate its transmission system. Rather, AltaLink merely stated that existing connections are unreliable. Further, AltaLink did not explain how its proposed solutions are more cost-effective other than an unquantified reference to the elimination of monthly phone charges. Accordingly, the Commission is not persuaded that the projects are justified on the basis of maintaining or improving reliability of AltaLink’s system, nor that the projects are justified on the basis of economic benefits.

240. Regarding potential security issues with the current technologies, AltaLink stated that they were implemented decades ago when modern cyber threats were not present, but did not elaborate further on the security risks associated with the current connections.<sup>243</sup> AltaLink has not persuaded the Commission that the existing technology is inherently unsecure.

241. The Commission is also concerned that AltaLink has not contemplated alternative solutions to upgrade the connections in a more cost-effective manner. From the information provided, it appears AltaLink is transitioning connections that currently rely on public networks and facilities to its own telecom network. AltaLink submitted that the AESO’s long-term plan recommends that utilities only rely on utility telecom networks for power system operations.<sup>244</sup> AltaLink cited the following section of the AESO’s long-term plan in support of this recommendation:

### **5.3.2 Private utility data communications**

SCADA information is critical for the monitoring, situational awareness, and control of the AIES [Alberta Interconnected Electric System]. Improving SCADA information exchange to the AESO and between the major transmission control and operation centers is being investigated. The utility telecommunication network, over which the utilities have monitoring and restoration control, can be further leveraged for this purpose. Key generation control and operation centers could be also included to improve overall system reliability and emergency preparedness.<sup>245</sup>

242. While the Commission considers that the referenced section of the AESO’s long-term plan contemplates additional information being exchanged between the AESO and major transmission control centres, and leveraging private utility networks to do this, it does not appear to contain a recommendation for utilities to rely only on their telecom networks for system

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<sup>240</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 29, paragraphs 84-85.

<sup>241</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 80-81, paragraph 372.

<sup>242</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 80-81, paragraph 372.

<sup>243</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 81, paragraph 373.

<sup>244</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 81, paragraph 376.

<sup>245</sup> <https://www.aeso.ca/assets/downloads/AESO-2020-Telecommunication-LTP-Final.pdf>, PDF page 12.

operations. As such, AltaLink has not provided sufficient support for its connections to no longer utilize available public utility networks.

243. AltaLink did not provide an analysis of alternatives in support of the project. The Commission considers that additional analysis of alternative options to upgrade these connections needs to be undertaken and provided to support the reasonability of continued expenditures on these projects.

244. For the reasons set out above, the Commission denies AltaLink's forecast capital expenditures for the low capacity radio hop projects in the 2022-2023 test period. AltaLink is directed to remove its forecast capital expenditures of \$1.18 million in 2022 and \$1.26 million in 2023 in its compliance filing.

#### **10.1.7 Substation Major Equipment Program**

245. AltaLink requested approval of forecast capital expenditures of \$16.57 million in 2022 and \$17.53 million in 2023 for its Substation Major Equipment Program.<sup>246</sup> Under this program, AltaLink proposed to replace breakers, regulators, capacitor banks, and instrument transformers, upgrade its HVDC converter stations, and complete a customer reliability improvement project. The proposed projects were grouped into 13 different categories within AltaLink's Substation Major Equipment Program.

246. While the Commission approves the other substation major equipment project categories within this program, for the reasons that follow, the Commission:

- (i) denies AltaLink's forecast capital expenditures in the test period for transformer and regulator replacements at the East Airdrie Substation and the North East Lacombe Substation; and
- (ii) denies a portion of AltaLink's forecast capital expenditures in the test period for the high voltage breaker replacements.

#### **Risk assessment methodology**

247. AltaLink utilized its risk assessment methodology, in part, to determine which breaker and transformer replacements to undertake in the test period.<sup>247</sup> In general, AltaLink's risk assessment methodology involves computing a consequence score and a probability score for each asset.

248. The consequence score is a measure of the impact of the asset failing. In calculating the consequence score, AltaLink considers a number of different factors such as safety impacts, load loss, potential environmental effects, criticality to the bulk system, and the cost of urgent repair.<sup>248</sup> <sup>249</sup> Within each of these factors, AltaLink has developed a weighted scoring criteria. For example, within the environmental factor in the transformer risk assessment, the scoring is

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<sup>246</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 174, Table 1-1.

<sup>247</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 86, paragraph 401.

<sup>248</sup> Exhibit 26509-X0237, AML-AUC-2021AUG20-028 Attachment 1, Transformer Risk Assessment Framework.

<sup>249</sup> Exhibit 26509-X0238, AML-AUC-2021AUG20-028 Attachment 2, Circuit Breaker Risk Assessment Framework.

determined based on the transformer's proximity to a water body. It is scored a one if it is closer than 100 metres to a water body or a zero if it is not.<sup>250</sup>

249. The probability score measures the probability of an asset failure. AltaLink considers a number of different factors such as asset condition, duty, historical performance, and equipment design when calculating this score.<sup>251</sup> <sup>252</sup> Similar to the consequence score, weighted scoring criteria have been developed within each factor.

250. Combining the consequence and probability scores together results in the asset's total risk score.

251. The Commission supports AltaLink developing approaches to asset management that are less subjective and more transparent. In its current form, the Commission does not find the information (e.g., probability and consequence rankings) provided by AltaLink's risk assessment methodology to be helpful in assessing the reasonableness of the expenditures associated with AltaLink's proposed breaker and transformer replacements. For example, AltaLink's probability of failure score is meant to assess the probability of a failure; however, stating that an asset has a score in the top 10 per cent of all assets of the same type does not provide meaningful information. AltaLink's methodology ranks the probability of failure among all assets of the same type but it does not confer any information about how likely an asset is to actually fail over a particular time period.

252. For breakers, AltaLink admitted that the probability scores do not determine a failure rate. Instead, they indicate which breakers are more likely to fail than others. AltaLink has not evaluated whether the model it developed correlates to historical failures observed.<sup>253</sup> AltaLink explained that it can compare the relative risk scores produced by its model of in-service assets to those which have failed.<sup>254</sup> However, it did not provide any evidence on the record of this proceeding that it has in fact done so, or any evidence about the results of the comparison. Even if AltaLink had provided the scores rather than simply stating the breakers are in the top 10 per cent, the Commission does not consider the scores by themselves would be helpful in assessing how likely a breaker is to fail in the near term, and whether replacement in the test period, and the costs associated with such replacement, are reasonable.

253. For transformers, AltaLink uses a third-party developed tool to assess the probability of failure. This tool appears to be able to provide failure probabilities, which AltaLink has used to assess whether the total number of failures predicted by the tool correlates with the historical numbers of failures.<sup>255</sup> However, AltaLink did not provide predicted failure probabilities, and similar to breakers, AltaLink only stated that the transformers proposed for replacement are "in the top 10%" of relative probability. The Commission is unable to understand how likely the

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<sup>250</sup> Exhibit 26509-X0237, AML-AUC-2021AUG20-028 Attachment 1, Transformer Risk Assessment Framework, PDF page 4.

<sup>251</sup> Exhibit 26509-X0237, AML-AUC-2021AUG20-028 Attachment 1, Transformer Risk Assessment Framework.

<sup>252</sup> Exhibit 26509-X0238, AML-AUC-2021AUG20-028 Attachment 2, Circuit Breaker Risk Assessment Framework.

<sup>253</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-028(f), PDF pages 117-118.

<sup>254</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 95, paragraph 450.

<sup>255</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-028(f), PDF pages 116-118.

transformers proposed for replacement are to fail in the near term, and correspondingly, whether replacement in the test period and the costs associated with such replacement are reasonable.

254. Similarly, the Commission does not find AltaLink's consequence rankings to be helpful in understanding and quantifying what the likely impacts will be if an asset fails. As the CCA has suggested, it would be helpful if the consequence scores were expressed in equivalent dollar terms.<sup>256</sup> If this was done, it would allow for more straightforward comparisons between the expected reduction in risk from asset replacement and the costs of replacement of the asset (or savings from delaying the replacement).

255. Based on the foregoing, the Commission does not find AltaLink's risk assessments for transformers or breakers to sufficiently support the costs of proposed replacements in the test period. The Commission therefore provides the following findings in determining the reasonableness of the proposed expenditures associated with breaker and transformer replacements.

### **Transformers and regulators**

256. AltaLink requested approval of forecast capital expenditures of \$5.69 million in 2022 and \$5.39 million in 2023 for the replacement of seven transformers<sup>257</sup> and a number of associated voltage regulators as part of the Substation Major Equipment Program. In addition to these seven transformers, AltaLink also forecast to replace two additional transformers as part of its Substation Refurbishment Program,<sup>258</sup> and to remove two additional transformers in the test period as part of its Facility Modification Program.<sup>259</sup>

257. In the 2019-2021 test period, AltaLink replaced approximately three transformers per year,<sup>260</sup> including one transformer replacement that was deferred to 2022 due to outage scheduling.<sup>261</sup> AltaLink indicated that replacement of three to four transformers per year would be an appropriate rate for this test period.<sup>262</sup>

258. To align with the historical rate, the CCA recommended that AltaLink reduce the number of transformer replacements from seven to six in this test period.<sup>263</sup>

259. As noted above, AltaLink's risk assessments do not provide sufficient information to assess the reasonableness of AltaLink's forecast replacements. After its risk assessment process, AltaLink stated that it uses a team of subject matter experts to conduct a review of which

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<sup>256</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 11, paragraph 27.

<sup>257</sup> AltaLink's submissions on the number of transformers to be replaced in the test period are inconsistent. Table 1-5 (Exhibit 26509-X0026, Appendix 13-A12, PDF pages 180-181) shows seven transformer replacements, one regulator being replaced by a transformer, in addition to two transformer replacements (at Spring Coulee) under AltaLink's Substation Refurbishment Program, and two being removed (at Wabamun) under AltaLink's Transmission Facility Modification Program. In rebuttal evidence (Exhibit 26509-X0309, AML Rebuttal Evidence, PDF page 89, paragraph 417) AltaLink stated that it is replacing six transformers which is inconsistent with Table 1-5 in the business case.

<sup>258</sup> Exhibit 26509-X0026, Appendix 13-A14, PDF page 214, Table 1-3.

<sup>259</sup> Exhibit 26509-X0026, Appendix 13-A34, PDF page 445, Table 1-3.

<sup>260</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 175, Table 1-2.

<sup>261</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 176, paragraph 6.

<sup>262</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 244, paragraphs 795-796.

<sup>263</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 34, paragraph 109.

transformers should be prioritized for replacement<sup>264</sup> by performing detailed condition assessments<sup>265</sup> that use a variety of data sources (such as inspection and test results, maintenance records, failure analysis data and others) to determine the most reasonable maintenance action.<sup>266</sup> AltaLink did not file these condition assessments on the record of this proceeding, and the mere fact that AltaLink conducted a review, without the record of such review, is not helpful in assessing whether AltaLink's proposed transformer replacements are reasonable.

260. The justification for the specific transformer replacements proposed by AltaLink in the test period predominately resides in Table 1-5 of AltaLink's business case.<sup>267</sup> In general, the justifications provided by AltaLink for the specific transformer replacements are overly brief. Nonetheless, the Commission notes many of the transformers proposed for replacement contain PCBs. The replacement of these transformers is reasonably required to comply with a legal requirement.<sup>268</sup> Many of the transformers also have other specific observed issues, such as oil leaks, rising dissolved gas levels and multiple close-in faults.

261. Upon review of the record, the justification provided for transformer and regulator replacements at the East Airdrie and North East Lacombe substations (199S T1 and 212S T1) are unsubstantiated. AltaLink only stated that these transformers were nearing end of life due to deteriorating conditions and identified some factors that may contribute to failure of these transformers having a high impact, should it occur. However, AltaLink did not describe what conditions were deteriorating in these transformers nor how those conditions would make the transformer likely to fail in the near term.

262. The Commission denies AltaLink's forecast capital expenditures for the transformer and regulator replacements at the East Airdrie Substation and the North East Lacombe Substation in the 2022-2023 test period. A breakdown of the costs was not provided by AltaLink for this cost category. As such, AltaLink is directed to remove its forecast capital expenditures for the replacement of the East Airdrie and North East Lacombe substations (199S T1 and 212S T1) in 2022 and in 2023 in its compliance filing.

263. The Commission expects that future requests for expenditures for transformer replacements will be supported with an analysis, including associated data, of the specific issues with the transformers proposed for replacement and why they need to be addressed in the test period. The condition assessments AltaLink already conducts may be helpful to the Commission to understand the issues, and their associated severity, including any estimated probabilities of failure. As these assessments are already being conducted, it should not be overly burdensome for AltaLink to provide them.<sup>269</sup>

### **High voltage breakers**

264. AltaLink requested approval of forecast capital expenditures of \$3.58 million in 2022 and \$3.24 million in 2023 to collectively replace 20 high voltage breakers, which are breakers that

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<sup>264</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 86, paragraph 402.

<sup>265</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 95, paragraph 451

<sup>266</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 86, paragraphs 402-403.

<sup>267</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF pages 180-181, Table 1-5.

<sup>268</sup> *PCB Regulations*, s. 16.

<sup>269</sup> As an example of the information AltaLink may wish to include in future business cases refer to Proceeding 24798, Exhibit 24798-X0029, Appendix E-1-T-CBC-09, PDF pages 171-183, paragraphs 42-79.

are 69 kV and up, as part of the Substation Major Equipment Program.<sup>270</sup> High voltage breaker replacements were grouped into three different categories of projects: (i) 69 kV breakers; (ii) 138 kV breakers; and (iii) 240 kV breakers.

265. AltaLink also forecast to replace one additional high voltage breaker in the test period as part of the Substation Refurbishment Program.<sup>271</sup>

266. In addition to its risk assessment, AltaLink also conducted an analysis to ascertain how its average annual breaker replacement rate over the next several years would impact the number of breakers in its system that are older than the average service life of 47 years. AltaLink determined that a replacement rate of 10 breakers per year up to the year 2030 would manage the number of breakers older than the average service life, and result in the number of breakers older than the average service life in 2031 being the same as 2022.<sup>272</sup> For 69 kV breakers, the number of replacements proposed in the test period, was primarily driven by PCB regulation requirements.<sup>273</sup> For 138 kV and 240 kV breakers, AltaLink provided some additional information in rebuttal evidence, suggesting that most of the breakers proposed for replacement are minimal oil breakers, which AltaLink considers a legacy technology. AltaLink explained that this type of breaker has a number of drawbacks, and may use grading capacitors containing PCBs. Additionally one breaker was proposed for replacement due to a broken insulator.<sup>274</sup>

267. The CCA viewed that AltaLink's replacement rate implied that it was employing a bucketed approach to breaker replacement, by proposing to replace the 20 worst breakers in the test period.<sup>275</sup>

268. Overall, for the reasons that follow, the Commission finds that AltaLink's proposed high voltage breaker replacements are not adequately supported by the evidence that was provided.

269. First, as noted above, AltaLink's risk assessments do not provide sufficient information for the Commission to assess the reasonableness of AltaLink's forecast replacements.

270. Second, the Commission is not persuaded that AltaLink's strategy, to manage the number of breakers in AltaLink's system that are above a certain age, appropriately considers and balances, cost, safety and reliability.

271. Third, it appears that AltaLink is targeting to replace 20 high voltage breakers per year. The Commission notes, that AltaLink similarly replaced an average of 10 high voltage breakers per year in the last test period. The Commission agrees with the CCA, that the number of breakers AltaLink has proposed to replace in this test period, and also replaced in the last test period, suggest it is just targeting the quantity from its analysis.

272. Fourth, AltaLink did not provide sufficient information to support its business case. Similar to transformers, the expert reviews<sup>276</sup> that AltaLink used in determining its breaker

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<sup>270</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 175, Table 1-2.

<sup>271</sup> Exhibit 26509-X0026, Appendix 13-A14, PDF page 214, Table 1-3.

<sup>272</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 244, paragraph 797.

<sup>273</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 214, paragraph 11.

<sup>274</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 96, paragraph 453.

<sup>275</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF pages 37-38, paragraph 119

<sup>276</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 95-96, paragraph 451.

replacements were not filed on the record and cannot support whether AltaLink's proposed breaker replacements are reasonable.

273. Fifth, like the information filed to support transformer replacements, AltaLink's business case provided very little information to support why specific breakers were proposed for replacement in the test period. The business case listed generic drivers that could influence the need to replace certain breakers.<sup>277</sup> In this regard, the Commission agrees with the CCA's position that it is difficult to assess AltaLink's claims regarding the condition of these breakers without evidence of performance deterioration or failed maintenance tests.<sup>278</sup>

274. Finally, the Commission does not have evidence on the record that it is reasonable to replace minimal oil breakers, absent other compelling factors. The Commission recognizes that this technology may have drawbacks, however it is not persuaded that the technology alone is sufficient support for the replacement of the proposed breakers. Replacement of these breakers with newer breakers can provide cost savings;<sup>279</sup> however, AltaLink did not provide a cost-benefit analysis that would support replacing these breakers. Additionally, AltaLink has a grading capacitor replacement project under its Substation Components Program to address the PCB issues present in breaker grading capacitors.<sup>280</sup>

275. The CCA recommended a reduction in the number of 138 kV and 240 kV breaker replacements to two per year of each type,<sup>281</sup> or approximately half of what AltaLink proposed. The CCA did not propose a reduction to 69 kV breaker replacements.

276. The Commission considers AltaLink's forecast capital expenditures for 69 kV breakers to be reasonable given the need to comply with PCB regulations. Given the lack of evidentiary support for AltaLink's proposed 138 kV and 240 kV breaker replacements, the Commission considers a value at the mid-point of AltaLink's requested number of replacements the CCA's recommendation to be reasonable. This would result in a reduction of one 240 kV and one 138 kV breaker replacement per year. Accordingly, the Commission considers a forecast capital expenditure for high voltage breaker replacements of \$2.85 million in 2022 and \$2.49 million in 2023 to be reasonable, and denies \$0.73 million in 2022 and \$0.75 million in 2023 for these two breaker categories. AltaLink is directed to revise its forecast capital expenditures in 2022 and 2023 in its compliance filing.

277. For future reporting, the Commission would find it beneficial for AltaLink to revise the structure of its business cases. For example, the business cases for AltaLink's CRU programs, such as the Substation Major Equipment Program discussed in this section, often contain a number of different project types or categories. The Commission considers that a review of these business cases could be conducted more efficiently if all the information specific to a project type or category was organized together within the business case, as opposed to being dispersed throughout the business case and intermingled with information on other project types.

278. Furthermore, where practical, the identification of the specific individual projects (or replacements/upgrades) proposed in the test period, including a high-level scope of work, the

<sup>277</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 183, paragraphs 28-29.

<sup>278</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 37, paragraph 119.

<sup>279</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 191, paragraph 55.

<sup>280</sup> Exhibit 26509-X0026, Appendix 13-A07, PDF page 120, paragraph 32.

<sup>281</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 38, paragraph 121.

start and completion year of the project, total project cost, and justification as to why specific projects need to be completed in the test period, would be beneficial. For example, where replacements are proposed, specific sites/assets should be identified, and information specific to those sites/assets should be provided to support the proposed replacements.

### **Customer reliability upgrades**

279. AltaLink forecast capital expenditures of \$0.40 million in 2022 and \$2.0 million in 2023 for one customer reliability improvement project.<sup>282</sup> For this project, AltaLink proposed to install additional breakers at the T.M.P.L Niton 228S Substation to improve reliability for the customers connected to that substation as well as the customers connected to the Paddle River 106S Substation.

280. The Niton and Paddle River substations are connected to the transmission system through a single transmission line, 744L, which has an outage rate 3.5 times higher than AltaLink's system average.<sup>283</sup> When an outage occurs on 744L, both the Niton 228S and Paddle River 106S substations are disconnected from the transmission system. AltaLink proposed to add two breakers to the Niton 228S Substation to convert the connection of transmission 744L to an in-and-out configuration. Once this is completed, an outage on transmission 744L will no longer result in the Niton 228S Substation being disconnected, and the Paddle River 106S Substation is expected to experience 26 per cent fewer outages.<sup>284</sup>

281. As an alternative to the proposed project, AltaLink considered installing an overhead shield wire on transmission line 744L. However, this approach would reduce outages by a lesser amount than the proposed solution and would cost seven to eight times as much.<sup>285</sup>

282. The CCA was of the view that the project would not provide sufficient benefits to justify its costs given the historical number of sustained outages that have been experienced. Further, the CCA viewed that there is likely minimal load in the area to justify the upgrades, and as such, recommended a denial of the project.<sup>286</sup>

283. In rebuttal evidence, AltaLink clarified that seven sustained outages have been experienced at Niton 228S and five at Paddle River 106S over the last five years. Further, it indicated that a recent outage lasted over 11 hours. AltaLink also provided details regarding load growth that has occurred in the area over the years.<sup>287</sup> Given this information, the Commission does not consider the CCA's arguments to be persuasive.

284. The Commission considers the proposed expenditures associated with this customer reliability project to be reasonable. AltaLink has demonstrated that these facilities, and the customers connected to them, have been experiencing reliability levels that are materially below average, and proposed a cost-effective method to make a meaningful improvement to the reliability of these facilities. Accordingly, the Commission approves AltaLink's forecast capital expenditures for Customer Reliability Upgrades as filed.

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<sup>282</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 174, Table 1-1.

<sup>283</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 187, paragraph 45.

<sup>284</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 187, paragraph 46.

<sup>285</sup> Exhibit 26509-X0026, Appendix 13-A12, PDF page 188, paragraph 47.

<sup>286</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF pages 35-36, paragraphs 113-115.

<sup>287</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 90, paragraph 429.

### 10.1.8 Protection and Control Equipment Program

285. AltaLink requested approval of forecast capital expenditures of \$8.22 million in 2022 and \$6.87 million in 2023 for its Protection and Control Equipment Program.<sup>288</sup> Under this program, AltaLink proposed to replace six different types of protection relays,<sup>289</sup> replace cables, and complete area coordination studies and reliability improvement projects.

286. While the Commission approves the other protection and control equipment project categories within this program, for the reasons that follow, the Commission:

- (a) denies a portion of AltaLink's forecast capital expenditures for six protection replacements project categories: (i) transmission line protection; (ii) distribution feeder protection; (iii) bus protection; (iv) transformer protection; (v) breaker fail protection; and (vi) capacitor protection and retrofits; and
- (b) denies AltaLink's forecast capital expenditures in the test period for area coordination studies.

#### Protection replacements

287. AltaLink requested approval of forecast capital expenditures of \$6.57 million in 2022 and \$6.33 million in 2023, for protection replacements.<sup>290</sup>

288. The Commission observes that AltaLink's requested forecast capital expenditures for these six project categories is approximately 18 per cent<sup>291</sup> higher in 2022 and 14 per cent<sup>292</sup> higher in 2023 compared to AltaLink's expected expenditures in its 2021 management update. AltaLink explained that the increases are due to a greater number of relays requiring replacement because of risk assessments, opportunities to combine the replacements with other planned capital work at a site, and differences in unit costs.<sup>293</sup>

289. The Commission does not consider the increased capital expenditures for protection replacements is supported by the evidence provided by AltaLink.

290. First, the Commission does not find that there is an increasing trend in protection and control notifications and does not find notifications to be a helpful metric to determine whether to replace protection and control relays.

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<sup>288</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF page 223, paragraph 12, Table 1-1.

<sup>289</sup> The types of protection relays to be replaced under this program are: (i) Transmission Line Protection Replacements, (ii) Distribution Feeder Protection and Auto-Recloser Retrofits/ Replacements, (iii) Bus Protection Replacements, (iv) Transformer Protection Replacements, (v) Breaker Fail Protection and Breaker Control Replacements and (vi) Capacitor Protection And Retrofits: See Table 1-1 Exhibit 26509-X0026, Appendix 13-A15, PDF page 223, paragraph 12.

<sup>290</sup> The six categories of projects consist of the top six rows of Table 1-1 found in Exhibit 26509-X0026, Appendix 13-A15, PDF page 223, paragraph 12.

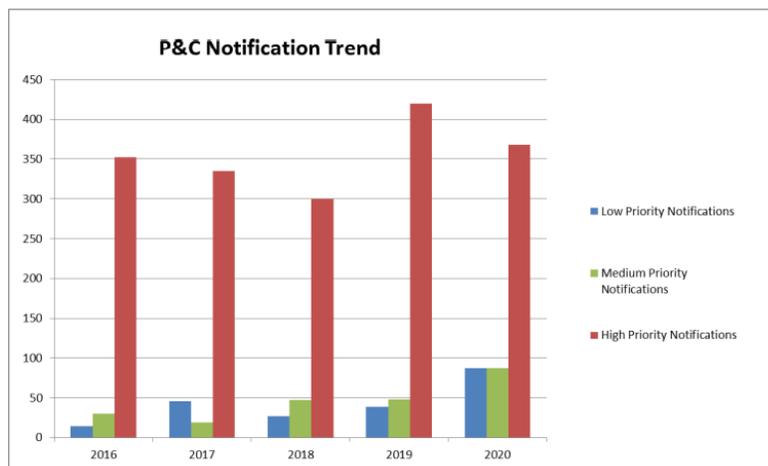
<sup>291</sup> Based on Table 1-1 of its business case in Appendix 13-A15, the Commission calculates this as \$6.57 million/\$5.56 million -1 = 18 per cent.

<sup>292</sup> From Appendix 13-A15, the Commission calculates this as \$6.33 million/\$5.56 million -1 = 14 per cent.

<sup>293</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF pages 225-226, paragraphs 14, 15 and 17.

291. In support of the need for protection replacements, AltaLink cited an increasing and sustained trend in high-priority notifications for protection and control devices.<sup>294 295</sup> The chart below shows the five-year trend for protection and control notifications:

**Figure 5. AltaLink's protection and control notifications**



Source: Exhibit 26509-X0002.01, 2022-2023 GTA, PDF page 240, Figure 10.3.7-4.

292. This evidence does not show an increasing trend in protection and control notifications. These notifications decrease from 2016 to 2018, then increase in 2019 and start decreasing again in 2020. In the absence of an increasing trend, the Commission does not find that the notifications support a need for increased expenditures on protection replacements.

293. The Commission's views regarding the helpfulness of the information AltaLink provided regarding these notifications are similar to its views expressed with respect to SCADA notifications, which are detailed in Section 10.1.5 of this decision.

294. It is unclear to the Commission what impact replacing the relays would have on the number of notifications. For example, AltaLink generates high-priority maintenance notifications through coordination reviews. These notifications may not require replacement of a relay and instead may be solved through settings changes.<sup>296</sup> As such, these notifications may be unrelated to the condition of the relay, and replacing the relays is unlikely to affect the number of these notifications.

295. Second, AltaLink also relied on its risk assessment methodology to determine the replacements proposed in this test period.<sup>297</sup> The Commission's views regarding AltaLink's risk assessment methodology for relays are similar to its views on AltaLink's risk assessment methodology for transformers and breakers, which are detailed in Section 10.1.7 of this decision. In short, the Commission does not find the relay risk assessments provide reliable information to determine which relays require replacement in the near term.

<sup>294</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF page 227, paragraph 24.

<sup>295</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 240, paragraph 787.

<sup>296</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-030(g), PDF page 130.

<sup>297</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF page 225, paragraph 28.

296. Third, the Commission does not view that the failure rate currently experienced for relays supports increased capital expenditures on relay replacement. AltaLink has approximately 9,000 relays in service.<sup>298</sup> The average age of these relays is 19 years. In 2019 and 2020, AltaLink experienced approximately 118 relay failures,<sup>299</sup> only eight of which (or approximately seven per cent) resulted in an outage to a transmission facility.<sup>300</sup> These failures correlate to a failure rate of approximately 0.65 per cent per year.<sup>301</sup>

297. Based on AltaLink's failure rate curves,<sup>302</sup> the Commission notes that on aggregate, AltaLink's relay population has a failure rate similar to that of a four-year-old microprocessor relay.<sup>303</sup> Even if AltaLink were to immediately replace all of its relays, its total failure rate would be expected to decrease to between 0.4 per cent to 0.5 per cent.<sup>304</sup> This would equate to approximately 72<sup>305</sup> to 90<sup>306</sup> failures every two years, or approximately one less outage per year;<sup>307</sup> a minor reliability improvement when balanced against to the costs required to replace all of AltaLink's relays.

298. Fourth, AltaLink also forecast a number of relay replacements to add redundancy and/or improve selectivity. Selectivity is the ability of the protection system to determine where a fault is and to isolate the components necessary to clear the fault. As one example, AltaLink proposed several projects to add second, redundant, bus protection relays to be used when the primary bus protection relay is out of service.<sup>308</sup> As the CCA noted, these are intended to respond to what appear to be very low probability events and would only decrease the impact of an outage, rather than reducing it to zero.<sup>309</sup> Given the Commission's findings regarding AltaLink's current reliability in Section 10.1.1 of this decision, the Commission is not persuaded that, in general, expenditures associated with protection replacements to further improve reliability are reasonable.

299. Fifth, the pre-emptive replacement of in-service components on a planned basis before they fail is often said to be lower in cost than replacing a component in an unplanned (i.e., emergency) situation. However, this does not appear to be the case for AltaLink's relay replacements. When AltaLink replaces relays in a planned manner, it replaces the entire protection package, rather than just one failed component. As a result, AltaLink's planned relay replacements are often more expensive than unplanned relay replacements.<sup>310</sup>

300. Based on the foregoing, the Commission finds it reasonable for AltaLink's annual forecast capital expenditures for protection replacements in these six project categories to be

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<sup>298</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF page 222, paragraph 1.

<sup>299</sup> Exhibit 26509-X0248, AML-AUC-2021AUG20-030, Attachment 2, Relay Failure List.

<sup>300</sup> Exhibit 26509-X0284, CCA-AUC-2021SEP24-043, PDF page 43, Preamble.

<sup>301</sup> Calculated as:  $118/2/9000 = 0.0065$ .

<sup>302</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-030(e), PDF page 127, Figure 1.

<sup>303</sup> Based on the approximate equipment age in which the fitted exponential curve passes through 0.65%, from Exhibit 26509-X0223, AML-AUC-2021AUG20-030(e), PDF page 127, Figure 1.

<sup>304</sup> Based on the approximate failure rate of the fitted exponential curve at age 0, from Exhibit 26509-X0223, AML-AUC-2021AUG20-030(e), PDF page 126, Figure 1.

<sup>305</sup> Calculated as:  $9000*0.004*2 = 72$ .

<sup>306</sup> Calculated as:  $9000*0.005*2 = 90$ .

<sup>307</sup>  $(1-0.0045/0.0065)*8/2$ .

<sup>308</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF page 230, paragraph 41.

<sup>309</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 41, paragraphs 132-133.

<sup>310</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-030(d), PDF page 126.

reduced to \$5.56 million in each of 2022 and 2023 to match the level of capital expenditures in AltaLink's 2021 management update. The Commission considers this to be reasonable for AltaLink to address protection systems in need of imminent replacement.

301. The Commission directs AltaLink, in its compliance filing, to revise its 2022 and 2023 forecast capital expenditures for six project categories for its protection replacements to total its 2021 management update capital expenditure amount of \$5.56 million for each test period.

### **Area coordination studies**

302. AltaLink requested approval of forecast capital expenditures of \$0.4 million in each of 2022 and 2023 to complete area coordination studies.<sup>311</sup> AltaLink undertakes these studies to assess the sufficiency of its protection systems.

303. AltaLink identified two components of its area coordination studies.

304. The first component is the model update of AltaLink's protection systems which are used for O&M activities, as well as in the design of protection systems and settings for new projects.<sup>312</sup>

305. The second component is the review and identification of instances where protection systems are mis-coordinated and/or are likely to mis-operate. Reviews are conducted on approximately one-sixth of AltaLink's power system each year to ensure that changes in the power system interconnections are being accounted for; operational, settings and mis-coordination deficiencies are prioritized; and protection equipment that is no longer compliant with industry or internal standards is identified.<sup>313</sup>

306. The CCA submitted that AltaLink's area coordination studies should be considered O&M expenses and, therefore, neither would qualify as a capital expenditure.<sup>314</sup>

307. It is the Commission's view that the costs AltaLink incurs to undertake the above-noted components of area coordination studies may be either an O&M expense or a capital expenditure depending on what is driving the costs.

308. If AltaLink's protection models need to be updated due to a change in system configuration caused by a capital project, the Commission expects that these costs are appropriately captured under the costs for the relevant capital projects that cause the changes.

309. However, if AltaLink's models need to be updated due to changes not caused by a capital project, such as to account for changes in load, generation or facilities of another TFO, the Commission considers this to be an O&M expense. The Commission does not consider the fact that these models may be used by capital projects to be sufficient justification for capitalizing costs related to these models. By this logic, the production of any sort of information that may be used by or related to AltaLink's capital investment could be capitalizable.

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<sup>311</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF page 223, Table 1-1.

<sup>312</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 104, paragraph 497.

<sup>313</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF page 228, paragraphs 26-27.

<sup>314</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 42, paragraph 136.

310. Likewise, the Commission does not consider reviews of protection systems to be a capitalizable expense. AltaLink proposes to continuously review one-sixth of its system every year, and as such, the activity is similar to a regular maintenance program. From a capitalization perspective, the Commission does not consider these reviews to be different from a periodic facility inspection. Both are checks to ascertain that AltaLink's current facilities remain fit for purpose. If a deficiency is identified that results in a capitalizable expenditure, the inspection/review that noted the deficiency is not a capitalizable expense.

311. Based on the foregoing, the Commission denies AltaLink's forecast capital expenditures for the area coordination studies in the 2022-2023 test period as the Commission views that such costs are not capital related and should, accordingly, be removed from AltaLink's forecast. AltaLink is directed in its compliance filing to remove forecast capital expenditures of \$0.4 million in 2022 and \$0.4 million in 2023.

### **Customer reliability improvement control system upgrade projects**

312. AltaLink requested approval of forecast capital expenditures of \$1.1 million in 2022 for two customer reliability improvement control system upgrade projects.<sup>315</sup> AltaLink proposed to install a remote-controlled line switch on transmission lines 526L/6L126 and an automatic bus restoration scheme at the Ghost 20S Substation. These projects were proposed to improve reliability and outage performance for customers.

313. For the remote-controlled line switch on transmission lines 526L/6L126, the CCA contended that AltaLink must conduct an impact assessment, based on megawatt hours of unsupplied load, to ascertain whether the benefits of the project exceed the costs.<sup>316</sup> For the project at the Ghost 20S Substation, the CCA viewed that the probability of the outage event described by AltaLink in the Canmore, Banff and Lake Louise areas occurring in the absence of the automatic bus restoration scheme to be low, and recommended a denial of this project.<sup>317</sup>

314. The Commission disagrees with the CCA. The Commission considers that AltaLink's proposed solutions are a cost-effective way to achieve a meaningful improvement in reliability for these sites

315. For transmission lines 526L/6L126, AltaLink demonstrated that the six substations connected to the line are experiencing reliability that is materially lower than other sites.<sup>318</sup> The installation of a remote-controlled line switch has the potential to make a material improvement to reliability.

316. For the Ghost 20S Substation Bus Auto-Restoration Project, there are five 138 kV transmission lines that terminate at the Ghost 20S Substation. Because there is no breaker on the high voltage side of transformer T1, if a fault were to occur on this transformer, the Ghost 20S Substation would need to be disconnected from all five 138 kV transmission lines to de-energize the transformer and stop the fault. Also, if this fault were to occur when transmission lines 3L or 777L/887L are already out of service, there could be equipment overloads to which AltaLink can

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<sup>315</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF page 223, Table 1-1.

<sup>316</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF pages 42-43, paragraphs 138-139.

<sup>317</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 43, paragraphs 140-142.

<sup>318</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF page 234, figures 1-4 and 1-5.

not manually respond quickly enough.<sup>319</sup> The Commission recognizes that the probability of such an event occurring is low as noted by the CCA;<sup>320</sup> however, the impact of the event is relatively high.

317. Accordingly, the Commission approves AltaLink's forecast capital expenditures for the 526L Line Switch Remote Control Project in 2022, and for the Ghost 20S Substation Bus Auto-Restoration Project in 2022 as filed.

318. The Commission finds that AltaLink has proposed a cost-effective approach to mitigate the identified risks<sup>321</sup> and approves AltaLink's forecast capital expenditures, as filed.

### 10.1.9 Protection and Control Major Equipment Program

319. AltaLink requested approval of forecast capital expenditures of \$10.14 million in 2022 and \$10.60 million in 2023 for its Protection and Control Major Equipment Program.<sup>322</sup> Under this program, AltaLink proposed to replace the control buildings and associated equipment within the buildings, such as protection and control, SCADA and telecommunication devices, at seven substations, and to replace the static var compensator (SVC) control system at one substation.

320. While the Commission approves the other protection and control equipment major equipment projects within this program, for the reasons that follow, the Commission denies AltaLink's forecast capital expenditures in the test period for the North Calder 37S Substation and the Taber 83S Substation projects.

#### North Calder 37S

321. AltaLink requested approval of forecast capital expenditures of \$2.31 million in 2022 and \$1.66 million in 2023 to replace the control buildings and associated equipment at the North Calder 37S Substation.<sup>323 324</sup>

322. The North Calder 37S Substation has two control buildings, which were constructed in the 1980s.<sup>325</sup> Building 1 is a smaller building, and building 2 is a larger building.<sup>326</sup> AltaLink cited a number of issues with these buildings that it said justify their replacement concurrent with addressing the risks associated with protection and control equipment<sup>327</sup> contained within the buildings. For example, (i) the presence of asbestos; (ii) rodent infestations; (iii) rotten floorboards and beams; (iv) water pooling in the in-floor cable trays; (v) physical security standards; and (vi) insufficient space within the buildings.<sup>328</sup>

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<sup>319</sup> Exhibit 26509-X0026, Appendix 13-A15, PDF page 235, paragraphs 64-67.

<sup>320</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 43, paragraph 140.

<sup>321</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 106, paragraph 505.

<sup>322</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF pages 244-245, paragraphs 1 and 4, Table 1-1.

<sup>323</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF page 245, Table 1-1.

<sup>324</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF page 247, paragraph 18.

<sup>325</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF page 247, paragraph 17.

<sup>326</sup> Exhibit 26509-X0250, AML-AUC-2021AUG20-031 Attachment 2 (Substation Building Condition Pictures), PDF page 3, See Figures 6 – 37S North Calder (building 1) and Figure 7 37S North Calder (building 2).

<sup>327</sup> AltaLink identified that 43 per cent of the relays at North Calder Substation require replacement, Exhibit 26509-X0309, AML rebuttal evidence, PDF page 108, paragraph 512, Table 4-2.

<sup>328</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-031(b), PDF page 134.

323. AltaLink indicated that repair of the buildings is not feasible. As such, it did not complete a net present value (NPV) analysis to compare the options of repairing versus replacing the buildings.<sup>329</sup>

324. For the following reasons, the Commission is not persuaded that the proposed expenditures associated with the replacement of the control buildings and associated equipment at the North Calder 37S Substation are reasonable.

325. With respect to asbestos, based on the evidence provided by AltaLink, the Commission is not persuaded that removal of the asbestos is an unreasonable option. A hazardous building assessment determined that asbestos exists in the caulking on the interior and exterior walls of both buildings as well as the floor tiles in building 2.<sup>330</sup> The hazardous materials report noted that some of the floor tiles have already been removed,<sup>331</sup> and there is no evidence to suggest the caulking cannot be safely removed or replaced if required.

326. In regard to the rodent infestations, the Commission agrees with the observations of the CCA that most rural buildings will have issues with mice that simply need to be managed with appropriate practices.<sup>332</sup>

327. With respect to rotting floorboards and floor beams, the Commission observes these floorboards appear removable, and thus can be replaced,<sup>333</sup> and finds AltaLink's observation of rust at the base of the metal exterior of building<sup>334</sup> to be insufficient to ascertain the condition of the floor beams.

328. The severity of the water pooling issues is also unclear from AltaLink's evidence. AltaLink provided pictures of the in-floor cable trays, but no standing water is visible in the pictures,<sup>335</sup> which does not aid the Commission in understanding the severity of the water issues, and what effect they may have on the cables in the tray, some of which appear to be outdoor cables that would be water resistant.

329. The Commission does not accept AltaLink's submission that to remedy the problems the existing cable trays would need to be filled with concrete, and all the exterior cables would need to be rerouted to enter the building above ground. This scope of work appears excessive to resolve the stated problems based on the evidence AltaLink provided.

330. With respect to the buildings not meeting physical security standards, the Commission is not persuaded that the current buildings cannot be brought into compliance with these standards.

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<sup>329</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-031(b), PDF page 134.

<sup>330</sup> Exhibit 26509-X0249, AML-AUC-2021AUG20-031 Attachment 1, 37S Hazardous Building Materials Survey, PDF page 5.

<sup>331</sup> Exhibit 26509-X0249, AML-AUC-2021AUG20-031 Attachment 1, 37S Hazardous Building Materials Survey, PDF page 5.

<sup>332</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 48, paragraph 158.

<sup>333</sup> See figures 8 and 9, Exhibit 26509-X0250, AML-AUC-2021AUG20-031 Attachment 2 (Substation Building Condition Pictures), PDF page 4.

<sup>334</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-031(b), PDF page 134.

<sup>335</sup> Exhibit 26509-X0250, AML-AUC-2021AUG20-031 Attachment 2 (Substation Building Condition Pictures), Figure 9, PDF page 4.

331. For the space constraints identified by AltaLink, the Commission notes that there are a minimal number of relays and panels currently remaining in building 1.<sup>336</sup> It may be possible to relocate the relays in building 1 to building 2, alleviating the space constraints between the panels and the battery bank.

332. Accordingly, the Commission is not persuaded by the evidence provided by AltaLink on the physical condition of the buildings that replacement is required, and finds that AltaLink did not sufficiently examine options to repair the buildings, an option that appears to be feasible based on the record of this proceeding. Further, because AltaLink did not perform an NPV of revenue requirement analysis to compare whether it was more cost-effective to replace or repair the buildings, the Commission is unable to conclude that the costs associated with AltaLink's proposal to replace the buildings, including costs to replace the associated equipment within the buildings, are reasonable. The Commission denies AltaLink's forecast capital expenditures for the replacement of the control buildings and associated equipment at the North Calder 37S Substation in the 2022-2023 test period. AltaLink is directed to remove its forecast capital expenditures of \$2.31 million in 2022 and \$1.66 million in 2023 in its compliance filing.

### **Taber 83S**

333. AltaLink requested approval of forecast capital expenditures of \$1.54 million in 2023 to replace the control buildings and associated equipment at the Taber 83S Substation.<sup>337 338</sup>

334. The Taber 83S Substation has three control buildings, which were constructed in the 1970s and 1980s.<sup>339</sup> AltaLink cited several issues with these buildings that it said justify their replacement<sup>340</sup> concurrent with addressing the risks associated with the protection and control equipment<sup>341</sup> contained within the buildings. The primary justification was that two of the joined buildings have leaky roofs where the roofs meet. These buildings are situated under an energized 25 kV bus with minimal clearance between the roof and the 25 kV bus. As such, to ensure worker safety, repairing the roof would require an outage to this bus, resulting in customer outages.<sup>342 343</sup>

335. In this regard, the Commission notes that avoiding one planned outage is not a sufficient justification to undertake a significant project. AltaLink did not quantify the effects of this outage.

336. AltaLink also did not complete an NPV analysis of revenue requirement to determine whether repairing the roofs or replacing the buildings would be more cost-effective.

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<sup>336</sup> This picture shows approximately four panels. The closest appears to only contain three control switches, while the relays that used to be in the panel have been removed (evidenced by the empty cut-outs). The second closest panel appears to contain three control switches and two smaller devices. It cannot be discerned what is in the other two panels. Exhibit 26509-X0249, AML-AUC-2021AUG20-031 Attachment 1, 37S Hazardous Building Materials Survey, PDF page 11, photograph 2.

<sup>337</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF page 245, Table 1-1.

<sup>338</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF page 248, paragraph 20.

<sup>339</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF page 247, paragraph 19.

<sup>340</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF page 247, paragraph 19.

<sup>341</sup> AltaLink identified that 31% of the relays at Taber 83S Substation require replacement, Exhibit 26509-X0309, AML rebuttal evidence, PDF page 108, paragraph 512, Table 4-2.

<sup>342</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-031(b), PDF page 135.

<sup>343</sup> Exhibit 26509-X0144, AML-ADC-2021JUN25-017(d)(iii.), PDF page 67.

337. Given that AltaLink did not provide a sufficient analysis of alternatives, the Commission is not persuaded that replacement of the control buildings is reasonable to resolve the roof leak issues. While the design of the roofs may not be ideal, AltaLink and its predecessor(s) have managed to operate with this design since at least the 1980s. The Commission does not accept that just because any fixes to the roof might be temporary<sup>344</sup> they should not be considered, and there is nothing in AltaLink's evidence that indicates that it cannot continue to effectively manage any roof issues.

338. AltaLink cited a number of other issues with the buildings such as a degrading door, rodent infestation, the use of wooden beams and space constraints.<sup>345</sup> The Commission agrees with N. Tauh, on behalf of the CCA, that the evidence does not suggest these issues are dire, and AltaLink has avenues to manage them without replacing the buildings.<sup>346</sup> As such, the Commission does not find the evidence to be sufficiently compelling to justify the costs of replacing the buildings.

339. Accordingly, the Commission is not persuaded by the evidence provided by AltaLink on the physical condition of the buildings that replacement is required. Further, because AltaLink did not perform an NPV of revenue requirement analysis to compare whether it was more cost-effective to replace or repair the buildings, the Commission is unable to conclude that the costs associated with AltaLink's proposal to replace the buildings, including costs to replace the associated equipment within the buildings, are reasonable. The Commission denies AltaLink's forecast capital expenditures for the replacement of the control buildings and associated equipment at the Taber 83S Substation in the 2023 test period. AltaLink is directed to remove its forecast capital expenditures of \$1.54 million in 2023 in its compliance filing.

### **Sherwood Park 746S**

340. AltaLink requested approval of forecast capital expenditures of \$1.35 million in 2022 and \$1.54 million in 2023 to replace the control building and associated equipment at the Sherwood Park 746S Substation.<sup>347</sup> AltaLink expected this project to start in 2022 and to be completed in 2024.<sup>348</sup>

341. For the reasons that follow, the Commission finds AltaLink's proposed replacement of the control building and associated equipment of the Sherwood Park 746S Substation to be reasonable, and approves the forecast capital expenditures as filed.

342. The Sherwood Park 746S Substation currently has one control building. The primary issue necessitating the replacement of this building is space constraints. Specifically, there is minimal work space between the battery bank and relay panels, which makes servicing this equipment difficult, and requires the use of modified work plans.<sup>349</sup>

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<sup>344</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 111, paragraph 521.

<sup>345</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 110-111, paragraph 520.

<sup>346</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 49, paragraphs 161-162.

<sup>347</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF page 245, Table 1-1.

<sup>348</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF page 249, paragraph 28.

<sup>349</sup> Exhibit 26509-X0026, Appendix 13-A16, PDF page 249, paragraph 27

343. N. Tauh, on behalf of the CCA, was of the opinion that AltaLink should not replace this building at this time.<sup>350</sup>

344. The Commission is not persuaded by the CCA's position. From the evidence, including photos provided by AltaLink, the Commission observes that severe space constraints exist in this building.<sup>351</sup> Specifically, there is minimal space between the battery bank and the open backed relay panels to allow a worker to access the batteries without risk of disturbing connections in the relay panel. Given this risk, and the other noted deficiencies with the building, and protection and control equipment contained within it,<sup>352</sup> the Commission finds AltaLink's proposed building replacement to be reasonable.

345. The Commission notes that the replacement of an entire control building, which may include costs to replace all relays, and the rewiring of field devices, is an extensive project. Where AltaLink proposes, in the future, to replace a control building, the Commission expects AltaLink to include a description of all alternatives it analyzed to address the identified risks. For example, if space constraints exist due to a battery bank, relocation of the battery bank to another building or enclosure could be examined and compared to the costs and benefits of replacing the control building.

#### **10.1.10 Pipeline Electrical Interference Mitigation Program**

346. AltaLink requested approval of forecast capital expenditures of \$4.5 million in 2022 and \$3.4 million in 2023 for its Pipeline Electrical Interference Mitigation Program.<sup>353</sup> Under this program, AltaLink proposed to assess and mitigate the effects its assets impose through AC electrical interference on the safety of pipeline personnel and the general public and the integrity of pipeline equipment.<sup>354</sup>

347. For the reasons that follow, the Commission denies AltaLink's forecast capital expenditures in the test period for the Pipeline Electrical Interference Mitigation Program.<sup>355</sup>

348. AltaLink explained that induction effects from transmission lines on nearby pipelines can pose risks to pipeline operation and safety, including shock hazards, accelerated corrosion damage, and damage to pipeline coatings during fault conditions.<sup>356</sup>

349. Normally, the last facility added into an area must pay to mitigate the interference. This was referred to by AltaLink as the "last-in" principle. AltaLink explained that in such circumstances, if AltaLink was the last facility to be added, it would capitalize the costs for pipeline mitigation within the new transmission development.<sup>357</sup> However, this CRU program focuses on existing facilities. In 2013, the standard distance between a pipeline and transmission line for which electrical interference mitigation was required to be studied in CSA C22.3 No. 6

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<sup>350</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF pages 48-49 paragraphs 159-160.

<sup>351</sup> Exhibit 26509-X0250, AML-AUC-2021AUG20-031 Attachment 2, Figure 14, PDF page 13

<sup>352</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 109, paragraph 516.

<sup>353</sup> Exhibit 26509-X0026, Appendix 13-A17, PDF page 268, paragraph 6, Table 1-1.

<sup>354</sup> Exhibit 26509-X0026, Appendix 13-A17, PDF page 267, paragraph 1.

<sup>355</sup> Exhibit 26509-X0026, Appendix 13-A17, PDF page 268, paragraph 6, Table 1-1.

<sup>356</sup> Exhibit 26509-X0026, Appendix 13-A17, PDF page 267, paragraph 2.

<sup>357</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-022(c), PDF pages 69-70.

changed from 100 metres to 300 metres. This 300 metre standard was included in the Alberta Electrical Utility Code (AEUC) in 2016.<sup>358</sup>

350. When any change to a standard occurs, Section 0 of the AEUC affords legacy treatment to facilities built under old standards, except as might be required for safety reasons by the authority having jurisdiction.<sup>359</sup>

351. AltaLink stated that as the authority having jurisdiction, it considers it necessary to re-evaluate the safety of its existing facilities and pipeline mitigation measures to the latest standards.<sup>360</sup> The Commission does not agree with AltaLink's assessment that studying and/or mitigation is required for all the proposed transmission lines for the following reasons.

352. The Commission finds that AltaLink has not provided enough detail to show how it chose what facilities ought to be studied. AltaLink stated that, of 1,650 events in its review of this program, 650 were in need of further study to determine the mitigation requirement.<sup>361</sup> The Commission finds that AltaLink's submissions in this regard do not provide enough detail to describe what an event is, nor how an event is prioritized so that it requires further study or eventual mitigation. A large portion of the requested capital expenditures in the current test period appear to be related to studies, and the Commission does not have an evidentiary basis to assess whether these costs are reasonable.<sup>362</sup>

353. The Commission does not have enough information related to the effects of shock hazards, economic effects of corrosion damage, or risk to pipeline coatings in relation to the pipelines to be studied. Shock hazards, increased corrosion damage, and risk to pipeline coatings may be studied by AltaLink and the pipeline owner, but may be uneconomic to mitigate. This is covered by the CSA standard, Section 6.1.1, which states:<sup>363</sup>

The mitigation techniques as specific shall be applied as required in order to eliminate **or reduce to acceptable levels** interference effects on pipelines. The power company shall conduct a joint study with the pipeline company in order to evaluate the interference effects on the pipeline. [emphasis added]

354. Across each of the three main concerns: shock hazards, economic effects of corrosion damage, and risk to pipeline coatings, AltaLink has not provided sufficient evidence to describe and justify the mitigation techniques it employs. The Commission finds that AltaLink has not identified whether the elimination of pipeline interference effects, or reduction to an acceptable level, is required for each transmission line.

355. Accordingly, the Commission denies the forecast capital expenditures for this program. Given this, the Commission finds that it is unnecessary to address the CCA's recommended cost-saving measures related to choosing an alternate power flow methodology. AltaLink is directed to remove its forecast capital expenditures of \$4.5 million in 2022 and \$3.4 million in 2023 for

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<sup>358</sup> Exhibit 26509-X0026, Appendix 13-A17, PDF page 274, paragraph 20.

<sup>359</sup> Alberta Electric Utility Code, Section 0 – Object, Scope, and Definitions.

<sup>360</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-022(a), PDF pages 67-69.

<sup>361</sup> Exhibit 26509-X0026, Appendix 13-A17, PDF page 275, paragraph 27.

<sup>362</sup> Exhibit 26509-X0026, Appendix 13-A17, PDF page 268, paragraph 6, Table 1-1.

<sup>363</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-022(a), PDF pages 67-69.

this program in its compliance filing. If, in a future test period, AltaLink seeks approval of this program, then AltaLink is directed to provide the following:

- Information regarding what subset of costs in the program are for studying crossings and what costs are for mitigation, as well as the ownership of any equipment used to put in place the mitigation measures identified in its business case.<sup>364</sup>
- A detailed description of what an event is for the purposes of this business case and how AltaLink ranks events and ultimately determines whether an event is in need of further study.

### 10.1.11 Telecommunication Major Upgrades Program

356. AltaLink requested approval of forecast capital expenditures of \$2.61 million in 2022 and \$2.57 million in 2023 for its Telecommunication Major Upgrades Program.<sup>365</sup> Under this program, AltaLink proposed to complete two sub-programs, consisting of five individual projects. Two of these are projects to complete a fibre backbone ring and three are telecommunication reliability improvements.

357. For the reasons that follow, the Commission approves AltaLink's forecast capital expenditures in the test period for the Telecommunication Major Upgrades Program.

### Fibre Backbone Ring Completion Program

358. AltaLink requested approval of forecast capital expenditures of \$1.31 million in 2022 and \$0.90 million in 2023 to complete the Fibre Backbone Ring Completion Program.<sup>366</sup> Under the program, AltaLink proposed to complete the East Fibre Backbone Conversion Project and the South Fibre Backbone Ring Closure Project, which together would establish a ring topology for its existing fibre backbone link.

359. The existing fibre telecommunication path from the Heartland Substation to the Lethbridge Substation is a fibre backbone link that covers the west side of AltaLink's service area. When this link fails, telecommunication traffic is rerouted through alternate microwave radio paths. In this situation, these microwave paths do not have the capacity to carry all the rerouted traffic, and the traffic is reprioritized. High-priority operational control traffic is maintained while services such as voice and security camera traffic are disrupted.<sup>367</sup>

360. N. Tauh, on behalf of the CCA, contended that additional analysis of reliability risks in the existing network is necessary and recommended that the project not proceed.<sup>368</sup>

361. The Commission disagrees with the CCA and has decided to approve the capital expenditures for the East Fibre Backbone Conversion Project and the South Fibre Backbone

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<sup>364</sup> Exhibit 26509-X0026, Appendix 13-A17, PDF page 275, paragraph 30: "Examples of measures include:  
• installation of discrete grounding connected to pipeline facilities at identified locations along the pipelines;  
• installation and/or expansion of gradient grid conductors and gravel at exposed portions of pipeline facilities;  
• installation of solid state (DC) de-couplers across isolating devices on pipelines; • installation of monitoring stations and upgrades of test posts; and • replacement of metallic pipe with non-metallic (plastic) pipe."

<sup>365</sup> Exhibit 26509-X0026, Appendix 13-A19, PDF page 281, Table 1-1.

<sup>366</sup> Exhibit 26509-X0026, Appendix 13-A19, PDF page 281, Table 1-1.

<sup>367</sup> Exhibit 26509-X0026, Appendix 13-A19, PDF page 285, paragraphs 20-21.

<sup>368</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF page 31, paragraphs 96-97.

Ring Closure Project as filed. A failure of the fibre link occurred in 2019, resulting in 280 SCADA circuits failing, and AltaLink's control centre losing visibility of 280 substations for several hours.<sup>369</sup> AltaLink's proposed projects would prevent this situation from reoccurring. The Commission finds this incident to be a sufficient justification for the proposed projects. Moreover, the Commission finds that AltaLink's approach of utilizing available infrastructure<sup>370</sup> to complete these projects results in solutions that are cost-effective.<sup>371</sup>

### **Reliability improvement projects**

362. AltaLink requested approval of forecast capital expenditures of \$1.31 million in 2022 and \$1.67 million in 2023 for the Telecom Reliability Improvement Program.<sup>372</sup> AltaLink proposed to undertake three reliability improvement projects: the North West Alberta Telecom Network Reliability Improvement Project, the Pigeon Lake to Hansman Lake Reliability Improvement Project, and the 5S East Calgary Telecom Reliability Improvement Project.

363. Generally, each of these projects would address instances where single (non-looped) radio links exist. At these locations if a radio link fails, communication can be simultaneously lost to multiple substations. Under each project, AltaLink proposed solutions to upgrade the telecommunications networks with redundant paths, so that failure of a single link would not result in loss of communication to multiple substations.

364. The Commission finds that AltaLink's evidence establishes a need for the projects. AltaLink provided details regarding the communication failures it has experienced over the last five years that would be mitigated by the proposed projects.<sup>373</sup> The listed failures show that multiple communication failures have occurred in recent years, and that the failures can routinely impact numerous sites. Moreover, the Commission finds that AltaLink's approach of utilizing available infrastructure to complete these projects results in solutions that are cost-effective.<sup>374</sup>

365. The Commission is not persuaded by the CCA's assertion that AltaLink could mitigate the risks by manning important substations when communication failures occur. AltaLink's evidence demonstrates these failures occur regularly, and can impact numerous substations, which suggests manning them may not be practical.<sup>375</sup> Further, the Commission is not persuaded by the CCA's assertion that additional quantification of the benefits and improvements are required in this case.<sup>376</sup>

366. Accordingly, the Commission finds AltaLink has reasonably demonstrated the need for the reliability improvement projects and that its proposed projects are a cost-effective solution to address the risks present. As such, the Commission approves AltaLink's forecast capital expenditures for these projects in the test period, as filed.

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<sup>369</sup> Exhibit 26509-X0026, Appendix 13-A19, PDF page 285, paragraph 22.

<sup>370</sup> Exhibit 26509-X0026, Appendix 13-A19, PDF page 286, paragraph 27.

<sup>371</sup> Exhibit 26509-X0026, Appendix 13-A19, PDF page 287, paragraph 35.

<sup>372</sup> Exhibit 26509-X0026, Appendix 13-A19, PDF page 281, Table 1-1.

<sup>373</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-032(b), PDF page 141.

<sup>374</sup> Exhibit 26509-X0026, Appendix 13-A19, PDF pages 289-290, paragraphs 53 and 59.

<sup>375</sup> Exhibit 26509-X0293, CCA-AUC-2021SEP24-040, PDF page 26.

<sup>376</sup> Exhibit 26509-X0277, CCA evidence of Bema, PDF pages 32-33, paragraphs 99-100.

### 10.1.12 Line Clearance Mitigation Program

367. AltaLink requested approval of forecast capital expenditures of \$3.98 million in 2022 and \$4.20 million in 2023 for its Line Clearance Mitigation Program.<sup>377</sup> Under this program, AltaLink proposed to address transmission line clearance deficiencies identified through its aerial mapping and thermal engineering studies.<sup>378</sup> AltaLink divides the program into two major project categories: Aerial Mapping and Attributes, and Line Clearance Mitigation (line spans).

368. The Line Clearance Mitigation (line spans) category is further separated into the following three categories: Category 1, which is the highest risk category and includes high-priority under-build deficiencies with a risk of flashover; Category 2, which includes high-priority under-build deficiencies; and Category 3, which comprises the remaining under-build deficiencies.

369. While the Commission approves the other line clearance mitigation project categories for this program, for the reasons that follow, the Commission:

- (i) denies AltaLink's forecast capital expenditures in the test period for Aerial Mapping and Attributes; and
- (ii) denies AltaLink's forecast capital expenditures in the test period for Line Clearance Mitigation (line spans) under Category 3 - remaining under-build deficiencies.

#### Aerial mapping and attributes

370. AltaLink requested approval of forecast capital expenditures of \$0.35 million in each of 2022 and 2023 to undertake additional aerial mapping activities by obtaining a combination of Light Detection and Ranging (LiDAR) survey data and aerial photo imagery technology of its transmission line spans to determine if line clearance deficiencies exist.<sup>379</sup>

371. In the current test period, AltaLink requested forecast capital expenditures to reassess 300 km of line, or two per cent of its system, per year.<sup>380</sup> AltaLink maintained that additional funding is necessary to investigate encroachment requests that are anticipated to arise from upcoming line inspections and to reassess new transmission lines or transmission line modifications from other landowner activities that may have arisen since its last aerial mapping was completed.<sup>381 382</sup>

372. In Decision 23848-D01-2020, the Commission approved AltaLink's system-wide, one-effort approach to LiDAR surveying to mitigate line clearance deficiencies across all of AltaLink's 13,385 km of transmission system.<sup>383</sup> Prior to this system-wide effort, AltaLink

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<sup>377</sup> Exhibit 26509-X0026, Appendix 13-A32, PDF pages 340-341, paragraph 13, Table 1-2.

<sup>378</sup> Exhibit 26509-X0026, Appendix 13-A32, PDF page 338, paragraph 1.

<sup>379</sup> Exhibit 26509-X0026, Appendix 13-A32, PDF pages 338-339, paragraph 3.

<sup>380</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-023(a), PDF page 73.

<sup>381</sup> Exhibit 26509-X0026, Appendix 13-A32, PDF page 344, paragraph 17.

<sup>382</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 18, paragraph 60.

<sup>383</sup> Decision 23848-D01-2020, PDF pages 46 and 56, paragraphs 201 and 239.

historically used an incremental approach and surveyed and assessed<sup>384</sup> approximately 1,100 km of transmission lines per year.<sup>385</sup>

373. For the following reasons, the Commission is not persuaded that AltaLink's forecast capital expenditures for its aerial mapping of 300 km of transmission line are reasonable.

374. The Commission is not persuaded that it is necessary for AltaLink to update its aerial mapping data in this test period. First, AltaLink has just recently completed a full aerial mapping of its system. Second, AltaLink did not indicate that aerial mapping would continue under the system-wide option when it conducted its NPV analysis included in its application, which compared the cost-effectiveness of its system-wide approach to its historic incremental approach.<sup>386</sup>

375. The Commission notes that AltaLink's justification for undertaking a system-wide approach to LiDAR surveying in the 2019-2021 test period was to reduce the overall costs for survey work and to get a holistic view of AltaLink's entire system. AltaLink argued that under a system-wide approach, significant cost savings would result from collecting data in a single effort, in contrast to AltaLink's previous segmented and incremental approach to LiDAR.<sup>387</sup> To this end, AltaLink indicated that the system-wide approach cost \$576 per km whereas its historical incremental approach cost \$1,137 per km.<sup>388</sup>

376. AltaLink's proposal to complete an additional 300 km of aerial mapping per year,<sup>389</sup> after a system-wide approach was so recently adopted and completed, effectively recommences AltaLink's historical incremental approach to aerial mapping on a per unit basis of \$1,167 per km.<sup>390</sup> In other words, one of the benefits associated with using a system-wide approach, i.e., lower per unit costs for aerial mapping, would be lost.

377. Accordingly, the Commission directs AltaLink to remove its forecast capital expenditures of \$0.35 million in 2022 and in 2023 for its aerial mapping and attributes in its compliance filing.

### **Line Clearance Mitigation (line spans) under Category 3 – remaining under-build deficiencies**

378. AltaLink requested approval of forecast capital expenditures of \$1.28 million in 2022 and \$1.80 million in 2023 to undertake line clearance mitigation work for its remaining Category 3 deficiencies. Within this program, AltaLink performed an engineering analysis that divided the type of clearance deficiencies into the three categories of mitigation described above.<sup>391</sup> AltaLink

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<sup>384</sup> Exhibit 26509-X0026, Appendix 13-A32, PDF page 347, paragraph 31.

<sup>385</sup> Decision 23848-D01-2020, PDF page 55, paragraph 236.

<sup>386</sup> Exhibit 26509-X0026, Appendix 13-A32, Table 1-11, PDF page 352.

<sup>387</sup> Decision 23848-D01-2020, PDF page 47, paragraph 202.

<sup>388</sup> Exhibit 26509-X0026, Appendix 13-A33, PDF page 347, paragraph 31.

<sup>389</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-023(a), PDF page 73: AltaLink stated that it is required to map the additional 300 km per year to assess ground profile changes (land development, soil erosion, etc.) or changes in landowner activities, including access roads, pipeline construction, or changes in land use.

<sup>390</sup> The Commission has calculated this unit amount:  $\$350k / 300 \text{ km} = \$1,167 \text{ per km}$ , which is an approximate unit cost similar to the unit cost of its historic incremental methodology, which cost \$1,137 per km.

<sup>391</sup> This detail is summarized best within Proceeding 25627, the compliance filing to AltaLink's previous GTA considered under Proceeding 23848. See: Proceeding 25627, Exhibit 25627-X0003.01, PDF page 33, Table 1.

stated that the under-build deficiencies in Category 3 occur less frequently and/or during periods of contingency loading.<sup>392</sup>

379. The CCA contended that the probability of these events is “rare and short-lived,”<sup>393</sup> and recommended the Commission strike the Category 3 portion of AltaLink’s program.

380. The Commission agrees with the submissions of the CCA that the probability of events that AltaLink is attempting to mitigate with these expenditures are rare and short-lived. AltaLink described the spans in Category 3 as occurring during periods of above-average system-normal loading and off-normal or peak loading conditions, or only occurring at times of peak loading and for short durations.<sup>394</sup> These expenditures are an example of what the Commission noted earlier in this decision in Section 10.1.1, as expenditures that fail to consider whether the incremental reliability or other benefits to be gained by the expenditures are worth the cost to incur them.

381. As part of its supporting business case, AltaLink performed a risk assessment and described Category 3 work as low priority. While AltaLink proposed to spend \$3.08 million in the test period on low priority Category 3 work, there would remain \$27.5 million in future additional low priority under-build work if the Commission approves these expenditures in the test period.<sup>395</sup> The Commission finds that AltaLink has not sufficiently justified the forecast costs proposed to be incurred relative to the low priority work to mitigate low-risk outcomes. For these reasons, AltaLink’s 2022-2023 forecast capital expenditures on this project are denied.

382. In Section 9.1 of this decision, the Commission has approved the 2022 opening rate base amounts for AltaLink’s CRU programs, which included the approval of actual capital additions related to Category 3 work for this program.<sup>396</sup> The Commission considers that there can be efficiencies in undertaking Category 3 work, when it is completed simultaneous with additional Category 1 or Category 2 work.<sup>397</sup>

383. The Commission directs AltaLink to remove its forecast capital expenditures of \$1.28 million in 2022 and \$1.80 million in 2023 for Category 3: remaining under-build deficiencies in its compliance filing.

### **10.1.13 Control Centre Relocation Project**

384. AltaLink requested approval of forecast capital expenditures of \$3.5 million in 2022 and \$6.5 million in 2023 for its Control Centre Relocation Project.<sup>398</sup> AltaLink’s stated objective for this relocation project is to mitigate existing physical security risks, ensure compliance with ARS and improve working conditions related to AltaLink’s primary control centre.<sup>399</sup>

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<sup>392</sup> Proceeding 25627, Exhibit 25627-X0003.01, PDF page 36, bullet three.

<sup>393</sup> Transcript, Volume 2, page 262, line 17.

<sup>394</sup> Exhibit 26509-X0026, Appendix 13-A32, PDF page 345, paragraph 23.

<sup>395</sup> Exhibit 26509-X0031, Appendix 13-A32 Attachment 3 Updated Deficiencies Table, Table 3 Low Priority Underbuild, filtered for Column F “Future”.

<sup>396</sup> Exhibit 26509-X0026, Appendix A-32, PDF page 345-346, paragraph 25, Figure 1-1, “C3 Addressed 2019-2021”.

<sup>397</sup> Exhibit 26509-X0026, Appendix A-32, PDF page 346, paragraph 27.

<sup>398</sup> Exhibit 26509-X0026, Appendix 13-A33, PDF page 434, paragraph 36, Table 1-3.

<sup>399</sup> Exhibit 26509-X0026, Appendix 13-A33, PDF page 428, paragraph 1.

385. The Commission denies AltaLink's forecast capital expenditures in the test period for the Control Centre Relocation Project. As detailed in the reasons that follow, AltaLink has not substantiated the asserted system reliability, security and safety risks confronting the current control centre. It also has not adequately explored and assessed all options to mitigate or eliminate these risks, other than the relocation option.

386. AltaLink has two control centres: a primary and a backup, which are critical to the operation and control of AltaLink's transmission facilities and telecommunications network. AltaLink stated that its primary control centre was built in 2008 in compliance with all industry requirements at the time. However, AltaLink stated that its control centre is now subject to increased risks, and there are more security requirements that apply to it.

387. AltaLink identified five interrelated technical and business drivers in support of relocating its primary control centre: reliability related to extreme weather events, physical security under ARS CIP-014-AB-2, safety, compliance, and economic factors.<sup>400</sup> Each driver is discussed below.

388. First, reliability risks were cited by AltaLink as one of the main reasons for proposing to relocate its primary control centre.<sup>401</sup> The Commission is not persuaded that AltaLink adequately considered the role and benefit of its backup control centre on reliability. AltaLink did not assess whether having ready access to a backup control centre could address any reliability risks connected with its current control centre.

389. The weather and security events identified by AltaLink in its application, responses to IRs, and rebuttal evidence are, in the Commission's assessment, low probability, high-impact events. These are events that are not likely to occur, but may have significant consequences if they do. AltaLink identified events such as tornados and terrorist attacks<sup>402</sup> as the types of risks that would be mitigated or eliminated by relocating its control centre.

390. The Commission finds that AltaLink's current backup control centre may mitigate, if not eliminate, the risk and repercussions of a prolonged system outage that could arise from the weather and security events referred to in AltaLink's application. The Commission considers that if such a weather or security event were to disable AltaLink's primary control centre, then AltaLink's backup control centre, which is located in the AESO's primary control centre, would likely be available to monitor, operate and control AltaLink's transmission system.

391. The Commission agrees with the argument of H. Mahmudov and J. Crozier, on behalf of the UCA, that AltaLink has not adequately considered the role of its backup control centre when considering the reliability driver for the control centre relocation.<sup>403</sup> In the Commission's view, any assessment of proposed reliability benefits connected with relocating AltaLink's primary control centre must include a detailed assessment of reliability benefits that are already conferred by AltaLink's backup facility.

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<sup>400</sup> Exhibit 26509-X0026, Appendix 13-A33, PDF page 429, Table 1-1 – ACC Gap Assessment.

<sup>401</sup> Exhibit 26509-X0026, Appendix 13-A33, PDF page 435, paragraph 44.

<sup>402</sup> Exhibit 26509-X0026, Appendix 13-A33, PDF page 429, Table 1-1 – ACC Gap Assessment; and Exhibit 26509-X0026, Appendix 13-A33, PDF page 431, paragraph 12.

<sup>403</sup> Transcript, Volume 1, page 155, lines 20-25, and page 156, lines 1-3.

392. Based on the foregoing, the Commission is not persuaded that any incremental system reliability that might be gained by relocating AltaLink’s control centre would be worth the cost incurred to do so. AltaLink’s backup control centre, and its contribution to system reliability, must be sufficiently considered in determining whether it is reasonable for AltaLink to relocate its primary control centre.

393. Second, the Commission finds that AltaLink has not adequately considered alternative measures that may reduce, but not eliminate, the physical security risks it cites in support of the proposed control centre relocation. As noted by the UCA,<sup>404</sup> AltaLink did not properly consider how much residual security risk it can and should bear.

394. In its rebuttal evidence,<sup>405</sup> AltaLink indicated that the relocation project itself evidences that its existing control centre exceeds AltaLink’s threshold for residual risk. However, AltaLink did not describe what that threshold is, nor did it provide any analysis on the record to assist the Commission in determining whether AltaLink’s threshold for residual risk is reasonable. Moreover, and notwithstanding its statements to the contrary, it appears to the Commission that the relocation of the control centre was designed to eliminate all risks to AltaLink, or mitigate them to the greatest extent possible, irrespective of the cost.

395. As a result, AltaLink did not properly assess whether security improvements could be made to its existing control centre to sufficiently mitigate, but not eliminate the physical security risks identified. AltaLink has not assessed whether it is reasonable for it to bear any remaining risks that would exist after such mitigation measures were implemented. The Commission notes that AltaLink’s rebuttal evidence identified primary control centres for a limited number of other jurisdictions, without an evaluation of what risks were mitigated or eliminated by measures at their respective primary control centres or any available backup centres.<sup>406</sup>

396. AltaLink has also not persuaded the Commission that its control centre relocation is required to comply with CIP-014-AB-2. The evidence supplied by AltaLink did not adequately support relocation as a way to mitigate physical security risks. In its response to an IR, AltaLink confirmed that the North American Transmission Forum practices document for “NERC Reliability Standard CIP-014-2 does not suggest that relocating a facility is a possible approach to manage a threat.”<sup>407</sup> In response to another Commission IR, AltaLink advised that it had conferred with a third party as to whether measures other than relocating the control centre would be sufficient to manage the identified threats. AltaLink ultimately did not provide any recommendations contained in the report, nor did it file the report itself, which it could have done on a confidential basis.<sup>408</sup>

397. In evaluating the risk to physical security, the Commission is concerned that AltaLink has not filed sufficient evidence to show what, if any, measures it has undertaken to protect and continually improve the physical security at its current control centre. Furthermore, in the evidence filed assessing risks of a physical attack, AltaLink disclosed many details about the location of its primary control centre, which the Commission finds to be inconsistent with

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<sup>404</sup> Exhibit 26509-X0276, UCA evidence of H. Mahmudov and J. Crozier, PDF page 40.

<sup>405</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 29, paragraph 123.

<sup>406</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 24-25, paragraphs 93-94.

<sup>407</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-033(d), PDF page 145.

<sup>408</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-033(f), PDF page 146.

AltaLink's stated concern for maintaining physical security even if those details may be available elsewhere in the public domain.

398. Third, the Commission is not persuaded that the existing COVID-19 pandemic justifies relocating the control centre. AltaLink claimed that the COVID-19 pandemic created a safety issue because its system operators were at increased risk of potential virus transfer within the building. It indicated that a safety risk to its operators creates a potential safety risk to its field staff and the general public.<sup>409</sup>

399. Throughout the pandemic, AltaLink mitigated the risk of virus transfer to its control centre operators by implementing various protocols and procedures. The Commission understands that these protocols have maintained a safe working environment for AltaLink's control centre operators, consistent with AltaLink's legislated duty to maintain a safe and healthy work environment. The Commission finds that AltaLink understated the effectiveness of its existing pandemic protocols and procedures when assessing threats associated with pandemics as a driver for the need to relocate the control centre. Furthermore, there is no assurance that the new primary control centre would be operational within the current pandemic to mitigate COVID risks even though a new control centre might mitigate risks connected with a subsequent pandemic.

400. Fourth, from an economic standpoint, the Commission is not persuaded that AltaLink's business case is sufficiently supported. It is not clear how AltaLink intends to incur capital expenditures to relocate its control centre. AltaLink's requested approval of \$10 million is subject to a  $\pm 50$  per cent cost variance. In the Commission's view, AltaLink's justification for its range of cost variability indicates that AltaLink has not sufficiently examined several significant details (i.e., detailed engineering, siting, and construction activities) affecting the project's scope when preparing its business case.<sup>410</sup>

401. Lastly, AltaLink's current control centre is approximately 415 square metres (or 4,500 square feet).<sup>411</sup> AltaLink stated that based on the recommended area per working position and the need to allow for future expansion while optimizing control centre space, it is proposing that a new control centre be closer to 10,000 square feet. The Commission finds that allowance for future expansion is at odds with AltaLink's objective to return to an operations-based company. Rather, it needs to determine the optimal amount of space needed to operate the transmission facilities currently in service. AltaLink has not justified the proposal to double the size of its control centre.<sup>412</sup>

402. Accordingly, the Commission denies AltaLink's forecast capital expenditures for AltaLink's Control Centre Relocation Project in this test period. The Commission directs AltaLink to remove its forecast capital expenditures of \$3.5 million in 2022 and \$6.5 million in 2023 for this project in its compliance filing.

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<sup>409</sup> Exhibit 26509-X0026, Appendix 13-A33, PDF page 436, paragraphs 52-53.

<sup>410</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 29, paragraphs 125-126.

<sup>411</sup> Exhibit 26509-X0026, Appendix 13-A33, PDF pages 432-433, paragraph 25.

<sup>412</sup> Exhibit 26509-X0026, Appendix 13-A33, PDF page 434-435, paragraph 39.

## 10.2 WMP capital expenditure forecast for the 2022 to 2023 test period

403. AltaLink’s Wildfire Mitigation Plan (WMP) is comprised of four individual program categories: wildfire situational awareness, targeted component and structure replacements in HRFAs, line rebuilds in HRFAs, and transmission line right-of-way upgrades in HRFAs.

404. As illustrated in the table below, AltaLink requested approval of forecast capital expenditures of \$11.9 million in 2022 and \$12.2 million in 2023 for the WMP:

**Table 18. WMP forecast capital expenditures in 2022 and 2023**

	2022 Forecast	2023 Forecast
	(\$ million)	
Wildfire Situational Awareness	0.5	0.5
Targeted Component And Structure Replacements in HRFAs	4.2	4.2
Line Rebuilds In HRFAs	3.4	3.7
Transmission Line ROW Upgrades In HRFAs	3.8	3.8
<b>Total</b>	<b>11.9</b>	<b>12.2</b>

Source: Exhibit 26509-X0046, Appendix 22, PDF page 8, paragraph 20, Table 2.

405. The CCA recommended that the Commission not approve AltaLink’s forecast capital expenditures for its Targeted Component and Structure Replacements in HRFAs Program in the amount of \$8.4 million in this test period and its Line Rebuilds in HRFAs Program in the amount \$7.1 million in this test period.<sup>413 414</sup>

406. The Commission finds the forecast WMP expenditures to be reasonable with the exception of the projects noted below.

### 10.2.1 Wildfire Situational Awareness Program

407. AltaLink requested approval of forecast capital expenditures of \$0.5 million in each of 2022 and 2023 for its Wildfire Situational Awareness Program.<sup>415</sup> Under this program, AltaLink proposed to install 12 additional weather stations and cameras in HRFAs to improve visibility of high-risk fire conditions and real-time decision-making by its operators.<sup>416</sup> The Commission finds the forecast capital expenditures for the Wildfire Situational Awareness Program to be reasonable, and approves them as filed.

408. In Decision 23848-D01-2020, the Commission found that integrating weather specific data from public weather stations would assist in weather monitoring and AltaLink’s overall wildfire situational awareness.<sup>417</sup> However, the Commission observes that AltaLink did not propose to integrate any weather-specific data from public weather stations during the 2022-2023 test period.<sup>418</sup>

<sup>413</sup> Exhibit 26509-X0279, CCA evidence of Bema, paragraphs 27-46, 221-223 and 252. The CCA recommendation at paragraph 249 pertain to rate base additions, which is discussed in Section 9.5 of this decision.

<sup>414</sup> Exhibit 26509-X0330, CCA Undertaking 1 at Transcript, Volume 2, PDF pages 11-22.

<sup>415</sup> See Exhibit 26509-X0046, Appendix 22, PDF page 11, paragraph 29.

<sup>416</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-050(e), PDF page 218, AltaLink stated that it installs the weather station and camera at the same site as one integrated site; therefore, there is only a combined unit cost.

<sup>417</sup> Decision 23848-D01-2020, PDF page 42, paragraph 180.

<sup>418</sup> See Exhibit 26509- X0046, Appendix 22-A2, PDF page 21, paragraph 7, Table 4.

409. AltaLink stated that upon further review of its previous position, it determined that weather-specific data from publicly available weather stations does not provide the right type or frequency of data from locations close enough to AltaLink’s transmission lines and HRFAs to be of significant value. Therefore, AltaLink considered that its own deployed weather stations and cameras are sufficient to assist its power system operations and provide information about fire conditions, which can then help guide other wildfire mitigation measures.<sup>419</sup>

410. Notwithstanding AltaLink’s position, the Commission is cognizant that the WMP program is relatively new. Further, in light of AltaLink’s previous commitment to work with fire experts to assess and define whether any other alternatives in support of its wildfire situational awareness can be provided, the Commission remains interested in any benefit that can be obtained from publicly available weather data sources. AltaLink is therefore directed to provide (i) an update in its next GTA as to whether any additional integration of publicly available weather data can be accommodated within its Wildfire Situational Awareness Program; and (ii) analysis of the potential benefit of incorporating such data.

### 10.2.2 Targeted Component and Structure Replacements in HRFAs Program

411. AltaLink requested approval of forecast capital expenditures of \$4.2 million in each of 2022 and 2023 for the Targeted Component and Structure Replacements in HRFAs Program. Under this program, AltaLink proposed to replace components and structures located in identified HRFAs that have maintenance notifications, in order to reduce the risk of fire ignitions. As shown in the table below, AltaLink proposes to resolve 350 units, or notifications, based on anticipated results of planned line inspections and patrols, as well as completed annual line inspections.<sup>420</sup>

**Table 19. Forecast capital expenditures for targeted component and structure replacements in HRFAs for 2022 and 2023**

Description	2022 Forecast			2023 Forecast		
	Units	Average cost (\$000)	Total cost (\$000)	Units	Average cost (\$000)	Total cost (\$000)
Component replacements	131	10	1,300	131	10	1,300
Structure replacements	44	70	2,900	44	70	2,900
<b>Total</b>			<b>4,200</b>			<b>4,200</b>

Source: Exhibit 26509-X0046, Appendix 22-A2, PDF page 31, paragraph 7, Table 1-1.

412. The Commission approves the forecast capital expenditures of \$4.2 million in each of 2022 and 2023 under AltaLink’s Targeted Component and Structure Replacements in HRFAs Program identified under the WMP.

413. Notwithstanding this approval, the Commission provides a direction to AltaLink regarding its notification and validation process and future reporting for this program in the reasons below.

414. AltaLink identified the standard notification and validation process that it follows.<sup>421</sup> Examples of maintenance notifications include damaged or degraded structures, damaged or

<sup>419</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-050(b) and (d), PDF pages 216 and 218.

<sup>420</sup> Exhibit 26509- X0046, Appendix 22-A2, PDF page 42, paragraph 46.

<sup>421</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-051(c), PDF page 223, and Exhibit 26509-X0261.

missing insulators, damaged hardware, broken cross-arms and disconnected ground wires, storm and wildlife damage and environmental or industrial contamination.<sup>422</sup> AltaLink confirmed that each notification identified passed the criteria for repair and/or replacement in an HRFA.<sup>423</sup>

415. In Decision 25627-D01-2020, the Commission approved forecast costs associated with the resolution of 1,758 notifications.<sup>424</sup> Of these, 952 were completed at the end of 2020, representing 60 per cent of the total notifications that were forecast to be mitigated over the 2019-2020 period. In 2021, AltaLink plans to resolve the remaining 730 notifications.<sup>425</sup> The Commission notes that AltaLink's proposal to resolve 350 notifications for 2022-2023 represents a significant decrease compared to 2019-2021. The Commission expects that as AltaLink progresses on its WMP, notifications will continue to decline.

416. In other areas of this decision, the Commission raised a concern that AltaLink's notifications are vague and lack context. With respect to the WMP, AltaLink provided a spreadsheet of the deficiency type and notification source in response to an IR.<sup>426</sup> This is helpful to the extent that AltaLink is recording notifications by type and quantity in the WMP; however, what is lacking is whether each component or structure needs to be replaced, what a "deficiency" is, and how the deficiency met AltaLink's replacement criteria to reduce the risk of a fire ignition event.

417. With respect to future reporting of component and structure replacements in HRFAs, the Commission finds that the status of AltaLink's progress towards addressing notifications is required to determine where there is support for related future capital investments. Accordingly, the Commission directs AltaLink to provide a breakdown of its notifications, in a more granular level of detail, that were resolved in a prior test period or are forecast to be resolved in the next test period as a result of ongoing inspections and line patrols. In addition, the Commission would find it helpful if AltaLink's business case included the total line length (km), total line length in HRFAs (km), the percentage of its line lengths located in each HRFA, the number of component and structure replacements, and the total fire-related notifications by component and structure. Similarly, AltaLink should provide evidence outlining the type, cause and why the deficiency addressed on each component and structure by line number and HRFA has to be replaced, as opposed to relying on a generic statement that "Insulator x 1 or Mechanical Hardware x 1" has to be replaced.<sup>427</sup> The Commission finds that this generic statement does not explain what a deficiency is, and instead just indicates what component or structure AltaLink is replacing.

418. The Commission reminds AltaLink that any forecast costs for this program will be reviewed as part of the Commission's review of AltaLink's next opening rate base when actuals are known and can be assessed for prudence. As a part of its prudence review, the Commission

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<sup>422</sup> Exhibit 26509-X0046, Appendix 22-A2, PDF page 2, paragraph 30.

<sup>423</sup> Exhibit 26509-X0046, Appendix 22-A2, PDF page 30, paragraph 5, identified AltaLink's replacement criteria, and Exhibit 26509-X00223, AML-AUC-2021AUG20-051(d). PDF page 232.

<sup>424</sup> Decision 25627-D01-2020: AltaLink Management Ltd., 2019-2021 Transmission Facility Owner General Tariff Application Compliance Filing to Decision 23848-D01-2020, Proceeding 25627, July 21, 2020, PDF page 7, paragraph 17, Table 1.

<sup>425</sup> Exhibit 26509-X0046, Appendix 22-A2, PDF page 33, paragraph 15, Table 1-6.

<sup>426</sup> Exhibit 26509-X0261.

<sup>427</sup> As an example, similar to what was provided in Exhibit 26509-X0223, AML-AUC-2021AUG20-051(c), PDF page 223 and its attachment of the notifications filed in Exhibit 26509-X0261, AML-AUC-2021AUG20-051 Attachment 1 (Table 1-12 Update for Part C and D).

will consider the age and condition of the components and structures replaced; whether the criteria for replacement were met; the average service life of the assets; any changes in the criteria for replacement; evidence showing that assets were not prematurely retired; and, explanations of any differences between forecast and actual costs of these replacements.

### 10.2.3 Line Rebuilds in HRFAs Program

419. AltaLink requested approval of forecast capital expenditures of \$3.4 million in 2022 and \$3.7 million in 2023 for line rebuilds in HRFAs.<sup>428</sup> Under this program, AltaLink proposed to replace line segments or rebuild transmission lines where lines are confirmed to be running through HRFAs, to reduce the risk of fire ignitions.

420. Although AltaLink initially proposed to rebuild 10 km of line in 2022, consisting of work that was deferred for transmission lines 879L, 616L and 164L, the Commission observes that a total of 9.6 km was forecast to be constructed in relation to these three line rebuild projects. Similarly, AltaLink also proposed to rebuild 11 km of line for transmission lines 185L and 412L in 2023; however, the Commission observes that AltaLink revised this amount to 11.5 km.<sup>429</sup> This is reflected in the table below:

**Table 20. Forecast capital expenditures for line rebuilds in HRFAs for 2022 and 2023**

Description	2022 Forecast			2023 Forecast		
	km	Average cost	Total cost	km	Average cost	Total cost
		(\$000)			(\$000)	
<b>Total line rebuilds</b>	9.6	340	<b>3,360</b>	11.5	330	<b>3,680</b>

Source: a combination of Exhibit 26509-X0046, Appendix 22-A3, PDF page 54, paragraph 4, Table 1-2, and Exhibit 26509-X0223, AML-AUC-2021AUG20-053(d), Table 1-8 (Updated).

421. While the Commission approves the rebuilds for transmission line 879L, 616L and 164L within this program, for the reasons that follow, the Commission denies the 2023 forecast capital expenditures of \$3.68 million to rebuild transmission lines 185L and 412L.

#### 185L and 412L

422. AltaLink requested approval of forecast capital expenditures of \$1.75 million and \$1.85 million, respectively, to rebuild 5 km of transmission line 185L, and 5.5 km of transmission line 412L in 2023.<sup>430</sup> AltaLink stated that because a portion of transmission line 185L is parallel to transmission line 412L, it intends to combine the circuits onto double circuit structures to upgrade both transmission lines.<sup>431</sup>

423. For the following reasons, the Commission denies the forecast capital expenditures related to the line rebuilds for transmission lines 185L and 412L for the 2023 test period.

<sup>428</sup> Exhibit 26509-X0046, Appendix 22-A3, PDF page 54, paragraph 4, Table 1-1.

<sup>429</sup> The Commission observes that AltaLink's Table 1-2 of Appendix 22-A3 identifies 10 km in 2022 and 11 km in 2023; however, AltaLink then provided an updated Table 1-8 showing 9.6 km in 2022 and 11.5 km in 2023 in Exhibit 26509-X0223, AML-AUC-2021AUG20-053(d), PDF page 240. The Commission has amended the information accordingly.

<sup>430</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-053(d), Table 1-8 (updated), PDF page 240.

<sup>431</sup> Exhibit 26509-X0046, Appendix 22-A3, PDF page 60, paragraph 27.

424. In support of AltaLink's forecast capital expenditures for these transmission lines, AltaLink provided a one-paragraph explanation that lacks sufficient detail to justify these expenditures in the 2023 test period.<sup>432</sup> In particular, AltaLink does not indicate whether facility applications will be required or whether there are potential outstanding landowner concerns associated with this rebuild. As a result, the Commission considers that there is too much uncertainty around the timing of these line rebuilds and insufficient information to justify these expenditures in this test period.

425. Accordingly, AltaLink is directed to remove the forecast capital expenditures of \$1.75 million for transmission line 185L, and \$1.85 million for transmission line 412L in its compliance filing.

#### 10.2.4 Wildfire risk mapping and modelling

426. Joanne Phillips, on behalf of the CCA, raised several concerns with AltaLink's WMP, including the overall need for the program and work undertaken to date. The CCA also rejected the mapping and modelling parameters used by AltaLink's consultant, Forsite Consultants Ltd. (Forsite), to develop six HRFA maps, which are planned to be used in the future to report on the overall effectiveness of the WMP.

427. Specific to the issue of wildfire risk mapping and modelling, the CCA recommended that the Commission revisit the need for additional WMP-related forecast capital expenditures in the 2022-2023 test period. The CCA also requested that AltaLink be directed to revise its mapping and modelling approach for all HRFAs in the WMP to incorporate the CCA's proposed suggestions raised in its evidence. The CCA proposed that AltaLink's wildfire risk mapping and modelling approach should be inspected by an independent third-party auditor.<sup>433</sup>

428. For the reasons that follow, the Commission is not persuaded by the CCA's evidence and will not require AltaLink to revise its mapping and modelling approach or require a third party to inspect the mapping and modelling.

429. In Decision 23848-D01-2020, the Commission accepted the need for AltaLink to undertake additional measures to mitigate the risk of fire ignitions caused by its transmission system operation within its HRFAs identified in the WMP. This program focused on reducing the risk of a wildfire event occurring in Alberta caused by a powerline ignition. AltaLink is required by law to operate its assets in a safe and reliable manner, and the Commission continues to be of the view that it is reasonable for AltaLink to mitigate potential ignition risks caused by AltaLink's transmission assets.<sup>434</sup>

430. The Commission disagrees with the CCA that an additional independent third-party assessment of AltaLink's wildfire risk mapping and modelling needs to be conducted at this time. AltaLink retained Forsite to provide independent expertise and judgment in developing AltaLink's wildfire risk maps for powerline-caused fires in its service territory. The HRFA maps prepared by Forsite are integral to the work being undertaken under the WMP and were accepted

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<sup>432</sup> Exhibit 26509-X0046, Appendix 22-A4, PDF page 60, paragraph 27.

<sup>433</sup> Exhibit 26509-X0279, CCA evidence of Bema, PDF page 11, paragraph 28, and Exhibit 26509-X0330, CCA Undertaking 1 at Transcript, Volume 2, PDF pages 13 and 15.

<sup>434</sup> Decision 23848-D01-2020, PDF page 31, paragraph 124.

by the Commission in Decision 23848-D01-2020<sup>435</sup> and in Decision 25627-D01-2020.<sup>436</sup> Forsite is also the same expert consultant retained by the Government of Alberta (Alberta Wildfire) in the development of the Calgary Wildfire Risk Management Plan (CWRMP). Accordingly, the Commission continues to be satisfied that AltaLink's retention of Forsite and its HRFA wildfire risk mapping and modelling work remains reasonable.

431. The CCA challenged several indexes or parameters that were used by Forsite in developing AltaLink's wildfire risk model.<sup>437</sup> The CCA also asserted that AltaLink provided directions to Forsite in key areas of its wildfire modelling set-up and parameter input that contributed to conclusions indicating a higher wildfire threat. Some examples are noted below.

432. The CCA raised an issue with the Fire Weather Index (FWI) value. FWI values are used to determine if fire weather conditions are suitable to support a "fire spread day" as reflected by an FWI value greater than 19 (consistent with the 95th to 99th percentile), versus a "non-fire spread day," which is represented by FWI values less than 19.<sup>438</sup> The CCA contended that the FWI values in Forsite's modelling were well above the normally employed standard fire spread day threshold FWI value used in Alberta Wildfire's CWRMP.<sup>439</sup> The CCA alleged that AltaLink directed Forsite to use higher FWI values when developing the HRFAs for the WMP, which resulted in an FWI value greater than 19 and an elevated hazard and wildfire potential.<sup>440</sup> Forsite indicated that it did not receive instruction from AltaLink to select any specific FWI thresholds for the fire growth modelling inputs, and maintained that using FWI values less than 19 is inappropriate since the objective is to model fires that spread rapidly under high wind and dry conditions, as was the objective of this fire growth modelling analysis, and to improve the understanding of the associated wildfire risk from powerlines.<sup>441</sup> Although the CCA did not identify a specific FWI value, it recommended that AltaLink repeat its wildfire threat mapping using the FWI value assigned to the 90th percentile, which is the same percentile used in the CWRMP.<sup>442</sup>

433. The Wildland Urban Interface (WUI) index<sup>443</sup> was also of concern to the CCA, based on its belief that this industry standard metric was not used in Forsite's modelling at AltaLink's direction. The CCA contended that the WUI should be an integral part of any modelling and mapping work and its omission resulted in an artificially increased wildfire risk.<sup>444</sup> Forsite disagreed with the CCA's conclusion stating that while on its own accord, it did not explicitly reference the WUI, Forsite did implicitly include the concepts and impacts related to the WUI,<sup>445</sup> thereby making its work more robust.<sup>446</sup>

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<sup>435</sup> Decision 23848-D01-2020, PDF page 27, paragraph 105.

<sup>436</sup> Decision 25627-D01-2020, PDF page 8, paragraph 19.

<sup>437</sup> Exhibit 26509-X0293, AML-CCA-2021SEP24-048, PDF pages 58-60.

<sup>438</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 203, paragraph 946.

<sup>439</sup> Exhibit 26509-X0293, AML-CCA-2021SEP24-048, PDF pages 58-60.

<sup>440</sup> Exhibit 26509-X0306, Forsite rebuttal evidence, PDF pages 4-7.

<sup>441</sup> Exhibit 26509-X0306, Forsite rebuttal evidence, PDF page 5.

<sup>442</sup> Exhibit 26509-X0330, CCA Undertaking 1 at Transcript, Volume 2, PDF page 13.

<sup>443</sup> AltaLink explained that the WUI is the area where urban development and wildland with vegetive fuels meet.

<sup>444</sup> Exhibit 26509-X0293, CCA-AUC-2021SEP24-047, PDF pages 53.

<sup>445</sup> As an example, Forsite's assessment completed for AltaLink includes the identification of structures and infrastructure across the landscape, including at wildland interfaces, as well as their potential exposure to wildfire.

<sup>446</sup> Exhibit 26509-X0306, Forsite rebuttal evidence, PDF pages 4, 5 and 7.

434. The CCA was also critical of the absence of any assumed effective fire suppression activities in AltaLink's wildfire risk model and alleged that AltaLink instructed Forsite to omit such inputs.<sup>447</sup> Again, Forsite stated that it did not receive instruction from AltaLink to disregard fire suppression potential during the fire growth modelling work. Instead, Forsite explained why its fire growth model used in this analysis assumed fire growth in the absence of fire suppression activities.<sup>448</sup> Specifically, Forsite integrated the Canadian Fire Behaviour Prediction system ("free burning and unaffected by suppression activities") into the fire growth model developed for AltaLink. The exclusion of fire suppression from the modelling of both the green zone and white zone was based on Forsite's understanding that these areas often have limited fire response capabilities.<sup>449</sup>

435. The Commission is not persuaded that AltaLink instructed Forsite to select specific FWI thresholds for fire growth modeling inputs, to omit WUI data in its wildfire risk calculations and analysis, or to disregard fire suppression potential during its fire growth modeling work. The Commission accepts Forsite's submissions in this regard and is satisfied that in undertaking HRFA wildfire risk mapping and modeling work, Forsite did so independently, using its expertise and judgment as a wildfire mapping consultant.<sup>450</sup>

436. The Commission also considers that unlike the consultants retained by the CCA to address this issue, Forsite has specific expertise in the field of wildfire behaviour modelling including specialized knowledge, training, skills and experience. While the CCA's consultants possess some knowledge of wildfire behaviour and expertise in research more generally,<sup>451</sup> this is insufficient to provide the type of specialized knowledge and expertise necessary to address this issue. Accordingly, the Commission prefers the evidence prepared by Forsite.

437. Based on the foregoing, the Commission is not persuaded that AltaLink's HRFA wildfire risk mapping and modelling requires revision at this time. The mapping and modelling employed by Forsite to develop the HRFAs was recently assessed by the Commission in Decision 23848-D01-2020 and in Decision 25627-D01-2020 and continues to be reasonable. The Commission acknowledges AltaLink's statement that it anticipates it will need to update its HRFA maps beyond the 2022-2023 test period.<sup>452</sup>

### 10.2.5 Further reporting of the WMP

438. The CCA raised several concerns with AltaLink's reporting of the WMP.

439. For the reasons that follow, the Commission agrees that further reporting is required for the WMP. The WMP is a relatively new capital program with, as yet, unproven benefits and therefore the quality of AltaLink's detailed reporting is critical for determining the efficacy of the WMP.

440. AltaLink maintained that overall, it considers it to be too early in the implementation of the WMP to assess its effectiveness.<sup>453</sup> AltaLink provided a table of metrics showing the various

<sup>447</sup> Exhibit 26509-X0293, AML-CCA-2021SEP24-048, PDF pages 58-60.

<sup>448</sup> Exhibit 26509-X0306, Forsite rebuttal evidence, PDF pages 5, 8-9.

<sup>449</sup> Exhibit 26509-X0306, Forsite rebuttal evidence, PDF page 8.

<sup>450</sup> Exhibit 26509-X0306, Forsite rebuttal evidence, PDF page 5.

<sup>451</sup> Exhibit 26509-X0301, CCA-AML-2021SEP24-001, PDF pages 1-4.

<sup>452</sup> Exhibit 26509-X0046, Appendix 22, PDF page 8, paragraph 25.

<sup>453</sup> Exhibit 26509-X0215, AML-IPCAA-2021JUN25-005(c), PDF page 5.

performance indicators it uses to assess the progress and the overall effectiveness of four individual WMP sub-programs.<sup>454</sup> These metrics include yearly reporting of the number of fire incidents, wires down events, incremental vegetation management inspections, fire training sessions, and customer outreach sessions.

441. Specific details of the metrics and related performance indicators are provided in [Appendix 6](#) to this decision.<sup>455</sup>

442. The Commission considers that several processes and procedures should be established to monitor the progress of the WMP, especially given the capital investment undertaken to date. The Commission understands that tracking the progress of the WMP will be a long-term endeavour for AltaLink. Notwithstanding that AltaLink has accelerated the WMP work to focus on notifications in HRFAs that could otherwise result in a power line initiated fire if not addressed, the Commission expects that in the long term, the WMP will be migrated back to be a component of AltaLink's CRU program.

443. Guided by the metrics table provided in Appendix 6, AltaLink is directed to update its WMP business case to include the quantitative metrics and show the performance indicators it will use to assess the progress and the overall effectiveness of its WMP commencing with 2019. AltaLink is also directed, in its next GTA filing, to provide more detailed descriptions in the table, including more specific definitions of what it means by Class I, II and III wildfire incidents. As an added metric, it would be beneficial for AltaLink to include any identified deficiencies, concerns, degrading hardware, structures and/or vegetation risks noted during the execution of its WMP and to identify the steps AltaLink will undertake to address these matters.

444. The Commission supports AltaLink's commitment to assess the effectiveness of its WMP by adding or removing metrics as needed, or, as improved metrics are identified through ongoing industry practice.<sup>456</sup> Furthermore, the Commission would find it effective for AltaLink to track any changes made to the metrics used, and indicate what prompted such a change to occur.

445. The Commission acknowledges AltaLink's commitment to provide an update in its next GTA explaining how it has further developed its internal expertise, and how it has consulted with other utilities and weather and fire specialists. As AltaLink incorporates feedback through discussion with industry peers, the Commission expects AltaLink to take any corrective actions and adjust its program as required.<sup>457</sup> If adjustments to the WMP are required resulting from these discussions, AltaLink is directed to provide all pertinent information in this regard, in a WMP update to be filed at the time of its next GTA.

446. With respect to the 88 ignition events AltaLink has experienced across its facilities over the eight years between 2013 and 2020,<sup>458</sup> the Commission finds that further predictive tracking is required. Given that AltaLink stated that it does not carry out predictive analysis on how ignition events transform into wildfires, the Commission agrees with the CCA's position that AltaLink should more thoroughly track and report all details relating to wildfire incidents

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<sup>454</sup> Exhibit 26509-X0215, AML-IPCAA-2021JUN25-005(c), PDF pages 6-8.

<sup>455</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 217, paragraph 1024.

<sup>456</sup> Exhibit 26509-X0215, AML-IPCAA-2021JUN25-005(c), PDF page 5.

<sup>457</sup> Exhibit 26509-X0151, AML-IPCAA-2021JUN25-005(c), PDF page 23.

<sup>458</sup> Exhibit 26509-X0151, AML-IPCAA-2021JUN25-004(a), PDF page 15.

resulting from its transmission facilities.<sup>459</sup> This information may eventually be used for predictive wildfire analysis.

447. Accordingly, AltaLink is directed to continue to track and provide quantitative analysis as part of its future reporting of transmission outage statistics system and SAP records<sup>460</sup> and to include all ignition events that are connected to its transmission facilities. The information should incorporate the location, date, severity and impact of the fire, the component(s) or structure(s) that caused the ignition event, any outages that occurred as a result of the event, what preventative mitigation measures were employed, and the effectiveness of the mitigation measures.<sup>461</sup>

### 10.3 IT capital expenditure forecast for the 2022 to 2023 test period

448. AltaLink’s IT program has four categories: (i) security compliance; (ii) process improvements; (iii) lifecycle sustainment; and (iv) regulatory and legislative compliance. The IT program consists of 26 individual project or program categories.<sup>462</sup>

449. AltaLink’s security compliance projects address new, increasing and evolving threats to AltaLink’s corporate IT, EMS and operating technology networks, as well as the replacement, upgrade and enhancement of security systems at AltaLink’s substations.

450. AltaLink’s lifecycle sustainment projects address the replacement of hardware, security or IT assets, and software that is at end of life, inoperable or that may be out of vendor support.

451. AltaLink’s process improvement projects address new customer and/or business requirements, including increased operational workload.

452. AltaLink’s regulatory and legislative compliance projects address new regulatory and/or legislative requirements.<sup>463</sup>

453. As illustrated in the table below, AltaLink requested approval of forecast capital expenditures of \$37.7 million in 2022 and \$38.4 million in 2023 for its IT program:

**Table 21. IT forecast capital expenditures for 2022 and 2023**

	2022 Forecast	2023 Forecast
	(\$000)	
Security Compliance	13.1	12.9
Process Improvement	3.6	2.1
Lifecycle Sustainment	20.1	22.6
Regulatory and Legislative Compliance	0.9	0.8
<b>Total</b>	<b>37.7</b>	<b>38.4</b>

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 261, Table 10.4.2-1.

<sup>459</sup> Exhibit 26509-X0293, CCA-AUC-2021SEP24-052, PDF page 73.

<sup>460</sup> Exhibit 26509-X0152.01.

<sup>461</sup> Exhibit 26509-X0293, CCA-AUC-2021SEP24-052, PDF page 73.

<sup>462</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 278, Table 10.4.7-1.

<sup>463</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 259-260, paragraph 823.

454. The Commission finds the forecast IT capital expenditures to be reasonable with the exception of the projects noted below.

### 10.3.1 Smart Key Implementation Project

455. AltaLink requested approval of forecast capital expenditures of \$1.72 million in 2022, and \$1.92 million in 2023 for its Smart Key Implementation Project.<sup>464</sup> Under this project, AltaLink proposes to replace the existing mechanical locks on its substation fences, buildings and filing cabinets with electronic locks. Authorized users would then be provided an electronic key (also referred to as a smart key) to use with the new locks.<sup>465</sup> AltaLink argued the project is required to comply with standards,<sup>466</sup> would result in costs savings<sup>467</sup> and would provide other qualitative benefits to AltaLink.<sup>468</sup>

456. D. Madsen, on behalf of the CCA, recommended a denial of the program on the basis that AltaLink's existing standards are already AEUC compliant; other alternatives, such as cultural and training efforts, could address the existing risks; evidence confirming existing risks was not provided; and AltaLink had not demonstrated the proposed project would deliver benefits to justify its costs.<sup>469</sup>

457. The Commission is not persuaded by the CCA's submission.

458. With regard to compliance with the AEUC, the Commission acknowledges AltaLink's existing standards are already compliant with the code; however, it notes that the Smart Key Implementation Project will simplify and improve its ability to comply with the AEUC.

459. Regarding other alternatives suggested by the CCA, the Commission is not persuaded they would deliver similar benefits to the proposed project. AltaLink is required to ensure the safety of its employees and its contractors who have access to its facilities, which include more than 300 substations, 80 telecommunication sites and its control centres.<sup>470</sup> Over 50 different third-party contracting companies may need access to these sites and AltaLink does not manage, from an employment perspective, the employees of these contractors.<sup>471</sup> Cultural and training efforts, as suggested by the CCA, would not be as effective as AltaLink's proposed project. Further, the smart keys and locks may be used by AltaLink to achieve compliance with the CIP-004<sup>472</sup> standard, and would result in cost savings. These benefits are sufficient to justify the project costs.

460. AltaLink has experienced numerous instances of keys being lost in transit upon their return or stolen out of vehicles. There have also been instances of contractor terminations where AltaLink has not been notified. Because smart keys have the ability to program termination dates

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<sup>464</sup> Exhibit 26509-X0033, Appendix 13-B1-03, PDF page 25, paragraph 35, Table-1-1.

<sup>465</sup> Exhibit 26509-X0033, Appendix 13-B1-03, PDF page 19, paragraph 4.

<sup>466</sup> Exhibit 26509-X0033, Appendix 13-B1-03, PDF page 20, paragraph 9.

<sup>467</sup> Exhibit 26509-X0033, Appendix 13-B1-03, PDF page 23, paragraph 28, and PDF page 25, paragraph 37.

<sup>468</sup> Exhibit 26509-X0033, Appendix 13-B1-03, PDF pages 23-24, paragraphs 225-229

<sup>469</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 61-67, paragraphs 171-189.

<sup>470</sup> Exhibit 26509-X0233, AML-AUC-2021AUG20-037(a), PDF page 165.

<sup>471</sup> Exhibit 26509-X0233, AML-AUC-2021AUG20-037(b), PDF page 166.

in advance, the Commission finds they will be more secure than AltaLink tracking any outstanding keys that have not been returned from terminated employees or contractors.<sup>473</sup>

461. Should loss of power to the substation or loss of network connectivity occur, AltaLink maintained that the ability to access a substation will not be compromised because of the smart key. Although a specific manufacturer has not been chosen at this time, the Commission understands that any solution chosen will ensure that authorized access to a transmission facility is not compromised in the event of loss of power or loss of network connectivity.<sup>474</sup>

462. Based on the foregoing, the Commission approves AltaLink's forecast capital expenditures for the Smart Key Implementation Project in the 2022-2023 test period.

### 10.3.2 CIP-014 Physical Security Enhancements Project

463. AltaLink requested approval of forecast capital expenditures of \$0.17 million in 2022 and \$1.09 million in 2023 for its CIP-014 Physical Security Enhancements Project.<sup>475</sup> Under this project, AltaLink proposed to enhance its physical security measures for eight substations and its current control centre, to achieve compliance with the AESO's CIP-014-AB-2 standard that became effective on July 1, 2020.<sup>476 477</sup>

464. The Commission approves AltaLink's forecast capital expenditures for this project, conditional on AltaLink providing further details in respect of the project in its compliance filing.

465. The Commission finds that AltaLink has justified that it needs to incur capital expenditures to implement enhanced physical security measures to comply with CIP-014-AB-2. However, AltaLink has not provided a sufficient project breakdown in its business case that sets out the capital expenditures for each component of this project. Moreover, AltaLink applied for approval of this project on the basis that the Commission would approve costs associated with AltaLink's control centre relocation. The Commission has denied these costs in Section 10.1.13 of this decision. AltaLink did not include this alternative scenario in its business case. Accordingly, the Commission directs AltaLink, in its compliance filing, to provide an updated project breakdown (in terms of project scope and costs) for each of the eight identified substations and for AltaLink's current control centre location.

### 10.3.3 Physical Security System Program

466. AltaLink requested approval of forecast capital expenditures of \$1.75 million in 2022 and \$0.88 million in 2023 for its Physical Security System Program.<sup>478</sup> Under this program, AltaLink proposed to review, upgrade and improve its physical defence systems and technologies. The project components were grouped into four categories, consisting of: (i) software

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<sup>473</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 146, paragraphs 699-700.

<sup>474</sup> Exhibit 26509-X0233, AML-AUC-2021AUG20-037(e), PDF pages 166-167.

<sup>475</sup> Exhibit 26509-X0033, Appendix 13-B1-04, PDF page 32, paragraph 26, Table 1.

<sup>476</sup> Specifically, security enhancements required by the Alberta Reliability Standards (ARS) Critical Infrastructure Protection (CIP) standards CIP-014-AB-212 to protect the reliability of the AIES.

<sup>477</sup> Exhibit 26509-X0033, Appendix 13-B1-04, PDF page 32, paragraph 27.

<sup>478</sup> Exhibit 26509-X0033, Appendix 13-B1-06, PDF pages 41-42, paragraph 6.

implementations and process improvements; (ii) end-of-life security hardware replacements; (iii) proposed physical improvements at corporate offices; and (iv) security replacements.

467. While the Commission approves the other physical security system project categories for this program, the Commission denies AltaLink's forecast capital expenditures in the test period for the software implementations and process improvements category.

468. AltaLink requested approval of forecast capital expenditures of \$0.93 million in 2022 and \$0.425 million in 2023 for software implementations and improvements.<sup>479</sup> Of these amounts, AltaLink proposed to expend \$0.50 million in 2022 and \$0.33 million in 2023<sup>480</sup> to implement a new threat management system<sup>481</sup> to track, identify, assess and investigate physical security events and threats.<sup>482</sup>

469. AltaLink explained that it does not currently have a consistent approach and methodology across its organization to identify emerging threats, or a centralized system to manage and track security and threat information with care and confidentiality. AltaLink expressed concern that without a centralized tool for tracking threats and investigations, employees could be entering high-risk situations without first being made aware of mitigative measures and procedures.<sup>483</sup> The threat management system project proposed by AltaLink included capital expenditures to gather requirements, purchase, implement, configure, test, and integrate threat management software in the test period.<sup>484</sup>

470. D. Madsen, on behalf of the CCA, was of the view that the proposed threat management system was still at a conceptual stage, and that evidence should be first obtained by AltaLink to support the need for the capital expenditures. The CCA also recommended that AltaLink identify the lowest cost solution before capital expenditures for this project are approved.<sup>485</sup>

471. The Commission finds AltaLink's proposed project and the requested capital expenditures are premature. There was minimal support provided to conclude that AltaLink's forecast expenditures are required, will address the threats identified, and are therefore reasonable. AltaLink has not determined its requirements for the project, nor did it identify or compare available alternatives to the project, consistent with the requirements of Bulletin 2006-25. AltaLink has only considered whether to execute the Physical Security System Program or to "do nothing."<sup>486</sup> Because a suitable comparison of alternatives has not been completed, the Commission is not persuaded that AltaLink's proposed solution, which includes the procurement and implementation of a new software tool, is necessary for AltaLink to reasonably manage its physical security events and threats.

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<sup>479</sup> Exhibit 26509-X0033, Appendix 13-B1-06, PDF pages 41-42, paragraph 6.

<sup>480</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-039(e), PDF page 173.

<sup>481</sup> Exhibit 26509-X0033, Appendix 13-B1-06, PDF page 43, paragraph 13.

<sup>482</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-039(c), PDF page 172.

<sup>483</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-039(b), PDF page 172.

<sup>484</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-039(e), PDF page 173.

<sup>485</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 75, paragraph 211.

<sup>486</sup> Exhibit 26509-X0033, Appendix 13-B1-06, PDF page 45, paragraphs 2-3.

472. AltaLink also proposed capital expenditures of \$0.43 million in 2022<sup>487</sup> and \$0.1 million in 2023<sup>488</sup> within the software implementations and improvements project category to review a new solution to track its physical security devices.<sup>489</sup> AltaLink explained that it presently tracks its physical security devices in spreadsheets, and under this project it would review interim solutions to track these devices in advance of any potential change to its current ERP software.<sup>490</sup> AltaLink did not explain why its current practices cannot be continued, or provide evidence to show that, over the useful period of the project, sufficient benefits will be achieved from implementing a new tracking solution to justify the project costs.

473. Based on the foregoing, the Commission denies AltaLink's forecast capital expenditures in the test period for its software implementations and process improvements. Accordingly, AltaLink is directed to remove forecast capital expenditures of \$0.93 million in 2022 and \$0.425 million in 2023 in its compliance filing.

474. The Commission's observation that AltaLink's Physical Security System Program business case in its IT program did not include adequate alternatives similarly applies to many of AltaLink's business cases included in its CRU and Facilities programs. There were instances where AltaLink's business cases lacked the supporting detail needed to justify AltaLink's forecast capital programs or projects and their associated expenditures. The onus is on AltaLink to provide specific and relevant information in support of requested revenue requirement amounts in its application. As discussed in Section 4.1, providing this information in the application leads to more efficient regulatory outcomes.

475. To that end, in its future reporting, the Commission requires AltaLink to include in all of its capital business cases, full descriptions of each alternative considered by AltaLink, including what work is contemplated under each alternative consistent with the requirements of Bulletin 2006-25. This includes detailed cost breakdowns, by year, of all estimated costs (including costs expected to be incurred after the test period, where applicable) associated with each alternative, including all assumptions and sources used for estimation.

476. Furthermore, when AltaLink refers to specific systems or processes (for example, specific software systems), the Commission considers that sufficient background information should also be included to provide a general understanding of the system or process.

#### **10.3.4 Alberta Reliability Standards Critical Infrastructure Protection Compliance Program**

477. AltaLink requested approval of forecast capital expenditures of \$3.36 million in 2022 and \$3.10 million in 2023 for its ARS CIP Compliance Program. Under this program, AltaLink proposed to remediate contraventions identified through the AESO's CIP standards audit conducted in 2021, to incorporate any new ARS CIP standards in its existing program, to ensure

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<sup>487</sup> Calculated as: Total 2022 expenditures in software implementations and improvements of \$0.93 million minus the 2022 expenditures on the threat management program of \$0.5 million.

<sup>488</sup> Calculated as: Total 2023 expenditures in software implementations and improvements of \$0.425 million minus the 2023 expenditures on the threat management program of \$0.325 million.

<sup>489</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-039(d), PDF page 173.

<sup>490</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-039(d), PDF page 173.

compliance with existing CIP requirements that were not completed in the previous GTA period, and lastly, to implement a new compliance management system.<sup>491</sup>

478. H. Mahmudov and J. Crozier, on behalf of the UCA, recommended a reduction to the program based on an annual average level of work undertaken in the 2019-2021 test period.<sup>492</sup>

479. The Commission is not persuaded by the UCA's argument that a reduction to the capital expenditures forecast should be made for this program. As discussed below, the Commission is satisfied that AltaLink's forecast capital expenditures are necessary to ensure that it can meet the AESO's regulatory requirements pertaining to ARS and CIP.

480. First, as a TFO, AltaLink has been legally required to comply with the ARS CIP version 5 since October 1, 2017. The CIP requirements constitute 154 of 319 ARS requirements.<sup>493</sup> In addition, the Market Surveillance Administrator (MSA) has implemented a compliance process to fulfill its mandate under the *Alberta Utilities Commission Act*, which includes a requirement that market participants, such as AltaLink, self-report suspected non-compliance with the ARS. AltaLink stated that it has filed 145 self-reports on 233 suspected non-compliance contraventions of the AESO standards.<sup>494</sup>

481. Second, AltaLink has identified new activities in this test period that are distinct from, and incremental to, those undertaken during the 2019-2021 test period.

482. AltaLink recently completed its triannual AESO audit of the CIP standards covering the period October 2017 to June 2020. The AESO CIP audit took place between November 2020 and June 2021. As the AESO audit is now complete, AltaLink is required to engage in the compliance process outlined by the MSA. AltaLink has submitted mitigation plans for findings identified in the AESO CIP audit where mitigation plans are required to remediate any contraventions related to the CIP standards. These mitigation activities are incremental to AltaLink's ARS projects undertaken in the 2019-2021 test period and will be addressed in this test period.<sup>495</sup>

483. AltaLink stated that it is currently in the process of preparing mitigation plans for findings identified in the AESO CIP audit, including several that it said may have been avoided with a compliance management system such as the one proposed by AltaLink in the current application. The compliance management system is new in scope and was not included in the previous GTA. Of the total \$6.5 million forecast for 2022-2023 for its ARS CIP Compliance Program, AltaLink has forecast \$1.7 million to fully implement its compliance management system.

484. The Commission finds that the compliance management system will assist AltaLink with meeting its CIP compliance under the AESO's requirements, and is reasonably required to reduce the overlap, repetition and duplication of evidence, documentation and effort of AltaLink employees for compliance management activities. The Commission therefore approves capital

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<sup>491</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-041(a), PDF page 178.

<sup>492</sup> Exhibit 26509-X0276, UCA evidence of H. Mahmudov and J. Crozier, PDF pages 22-23.

<sup>493</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-041(b), PDF page 179.

<sup>494</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 137, paragraphs 655-656.

<sup>495</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 137, paragraph 657.

expenditures of \$3.36 million in 2022 and \$3.10 million in 2023 for AltaLink's ARS CIP Compliance Program.

### 10.3.5 Robotic Process Automation Program

485. AltaLink requested approval of forecast capital expenditures of \$1.09 million in 2022 and \$1.09 million in 2023 for its Robotic Process Automation (RPA) Program.<sup>496</sup> Under this program, AltaLink proposed to automate monotonous and repetitive tasks currently done by its employees.<sup>497</sup>

486. AltaLink estimated that projects done under the RPA Program in 2022 and 2023 would result in 23,000 hours saved per year.<sup>498</sup> AltaLink estimated the NPV of revenue requirement for the project as negative \$13.5 million<sup>499</sup> (i.e., the savings from the project would exceed the revenue requirement to undertake the project).

487. H. Mahmudov and J. Crozier, on behalf of the UCA, recommended denial of the program on the basis that the savings from the program (from both forecast and past projects) did not appear to be materializing in AltaLink's cost forecasts.<sup>500</sup> D. Madsen, on behalf of the CCA, recommended approval of the business case, subject to reductions in AltaLink's applied-for revenue requirement to reflect savings resulting from the program.<sup>501</sup>

488. The Commission considers the expected savings from the RPA Program are sufficiently persuasive for the Commission to approve the forecast capital expenditures in this test period. Accordingly, the Commission approves AltaLink's forecast capital expenditures for the RPA Program in the 2022-2023 test period. The Commission's determinations with respect to the incorporation of savings arising from AltaLink's capital projects are provided in Section 10.3.11 of this decision. Those determinations are intended to ensure that the savings arising from this project and others will be incorporated in AltaLink's future forecast costs and revenue requirements.

### 10.3.6 Voice System Replacement Project

489. AltaLink requested approval of forecast capital expenditures of \$1.02 million in 2022 and \$1.42 million in 2023 for its Voice System Replacement Project.<sup>502</sup> Under this project, AltaLink proposed to replace its existing hardware and upgrade its existing voice system.<sup>503</sup>

490. AltaLink's voice system is the primary emergency and backup voice service, including critical coordination activities, for the AESO and others to contact key market participants in the event the public switched telephone network is unavailable.<sup>504</sup> AltaLink's current voice system is a hybrid, using two different protocols,<sup>505</sup> and the new voice system will be a single system,

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<sup>496</sup> Exhibit 26509-X0033, Appendix 13-B2-02, PDF page 80, Table 1-3.

<sup>497</sup> Exhibit 26509-X0033, Appendix 13-B2-02, PDF page 76, paragraph 2.

<sup>498</sup> Exhibit 26509-X0033, Appendix 13-B2-02, PDF page 80, paragraph 19.

<sup>499</sup> Exhibit 26509-X0033, Appendix 13-B2-02, PDF page 80, Table 1-4.

<sup>500</sup> Exhibit 26509-X0276, UCA evidence of H. Mahmudov and J. Crozier, PDF page 25.

<sup>501</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 60, paragraph 170.

<sup>502</sup> Exhibit 26509-X0033, Appendix 13-B3-04, PDF pages 127 and 130, paragraph 27, Table-1-1.

<sup>503</sup> Exhibit 26509-X0033, Appendix 13-B3-04, PDF pages 125-128.

<sup>504</sup> Exhibit 26509-X0033, Appendix 13-B3-04, PDF page 126, paragraph 8.

<sup>505</sup> Exhibit 26509-X0033, Appendix 13-B3-04, PDF page 125, paragraph 4.

standardized on one platform.<sup>506</sup> The project is intended, among other things, to meet the needs of key market participants as directed under draft ISO Rule 502.17. The AESO directed AltaLink to meet the requirements set out in the April 21, 2021, functional specification.<sup>507</sup>

491. AltaLink also submitted that the project is required because the current voice system components had reached the end of their 10-year lifespan,<sup>508</sup> and would reduce maintenance and support risks.

492. The CCA recommended that the business case for the voice system replacement be denied. It argued that the existing phone infrastructure, while older, continues to be compliant and that absent “compelling evidence of a degradation of the existing phone system to a point where the system no longer functions,”<sup>509</sup> imminent replacement was unnecessary. It advocated for a progressive replacement of the most worn or damaged components of the system and the consideration of backup options. It also indicated that AltaLink should defer the project until ISO Rule 502.17 is finalized and approved.<sup>510</sup>

493. The Commission is not persuaded by the CCA’s submissions. Given the age of AltaLink’s voice system and related hardware and the fact that the current draft of ISO Rule 502.17 formalizes AltaLink as the primary emergency telephony provider for key market participants,<sup>511</sup> the Commission finds that the expenditures associated with this project are reasonable.

494. The Commission notes that replacement of AltaLink’s existing handsets represents the largest part of the proposed expenditures.<sup>512 513</sup> However, as explained by AltaLink, a large number of its employees have been primarily working remotely, and have thus made no, or little, use of their handsets.<sup>514</sup> AltaLink indicated that part of its voice system modernization is related to mobility solutions to enable remote workforce telephony, which the COVID-19 pandemic has accelerated.<sup>515</sup> AltaLink also indicated that it is currently testing a software-based phone system that could be used for employees who do not specifically require a handset for operational purposes or pursuant to a legal requirement.<sup>516</sup> The Commission expects that the results of its analysis, which may indicate that some of the proposed handset replacements are not required, will be incorporated into the project AltaLink executes during the test period.

495. Based on the foregoing, the Commission approves AltaLink’s forecast capital expenditures for the Voice System Replacement Project in the 2022-2023 test period.

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<sup>506</sup> Exhibit 26509-X0033, Appendix 13-B3-04, PDF page 126, paragraph 9.

<sup>507</sup> Exhibit 26509-X0312, AESO Functional Spec GOWAN Voice .

<sup>508</sup> Exhibit 26509-X0033, Appendix 13-B3-04, PDF pages 127, paragraph 12.

<sup>509</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 70, paragraph 195.

<sup>510</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 67-70, paragraphs 190-196.

<sup>511</sup> Exhibit 26509-X0033, Appendix 13-B3-04, PDF page 127, paragraph 14.

<sup>512</sup> Exhibit 26509-X0033, Appendix 13-B3-04, PDF page 125, paragraph 6.

<sup>513</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-045(a), PDF pages 203-204.

<sup>514</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-045(b), PDF page 204.

<sup>515</sup> Exhibit 26509-X0033, Appendix 13-B3-04, PDF page 125, paragraph 7.

<sup>516</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-045(c), PDF page 204.

### 10.3.7 Data Storage Program

496. AltaLink requested approval of forecast capital expenditures of \$1.59 million in 2022 and \$1.16 million in 2023 for its Data Storage Program.<sup>517</sup> Under this program, AltaLink proposed to add additional data storage capacity, and to replace storage that is at “end of life.”<sup>518</sup>

497. For the reasons that follow, the Commission denies AltaLink’s forecast capital expenditures in the test period for the Data Storage Program.

498. The Commission observes that AltaLink’s data storage requirements have recently grown at a rapid pace, increasing by approximately 39 per cent from Q4 2019 to Q4 2020.<sup>519</sup> AltaLink attributes the cause of this growth to transaction volumes and other traditional data types such as databases, photos, videos and other file-based data such as new types of high-definition video data from unmanned aerial vehicles (UAVs) and drones, as well as LiDAR 3D modelling data.<sup>520</sup>

499. Increased data storage comes at an expense to ratepayers because continued expenditures are necessary to increase AltaLink’s storage capacity as well as to maintain the existing storage. The Commission considers that for any increases in storage expenditures to be prudent, AltaLink must be able to demonstrate it has made reasonable efforts to reduce and minimize the growth in its data storage needs.

500. AltaLink provided a table showing the initiatives it has undertaken in recent years to reduce its storage use.<sup>521</sup> These initiatives resulted in a 343 TB or 17.8 per cent reduction of storage. In argument AltaLink also stated that it has improved its data retention policy to ensure efficient storage on an ongoing basis.<sup>522</sup>

501. The Commission is not persuaded that this information demonstrates that AltaLink explored all reasonable avenues to reduce its data storage needs. Reducing data storage needs would negate the need for, or extent of, AltaLink’s proposed expenditures. The information provided by AltaLink with respect to its initiatives did not include any details on the scope of each listed activity for each initiative, and the listed descriptions of the initiatives were vague or overly technical such that they were unhelpful. In addition, AltaLink did not provide any specifics about its improved data retention policy. Overall, the information provided by AltaLink demonstrates that AltaLink has taken some actions to reduce its data storage use, but does not demonstrate that all reasonable avenues have been exhausted.

502. Based on the evidence provided, the Commission notes two specific areas where AltaLink’s evidence suggests additional efforts could be reasonably undertaken to reduce data storage use.

503. The first area is employees’ personal storage. AltaLink’s employee personal storage (i.e., files that are not shared and accessible by multiple employees but are stored on the network) equated to an average of 243 GB per employee.<sup>523</sup> AltaLink did not provide any

<sup>517</sup> Exhibit 26509-X0033, Appendix 13-B1-06, PDF page 143, paragraph 26, Table 1-3.

<sup>518</sup> Exhibit 26509-X0033, Appendix 13-B1-06, PDF page 139, paragraph 5.

<sup>519</sup> Exhibit 26509-X0033, Appendix 13-B1-06, PDF page 138, paragraph 3, Table 1-1.

<sup>520</sup> Exhibit 26509-X0033, Appendix 13-B1-06, PDF page 139, paragraph 9.

<sup>521</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-046(b), PDF page 206.

<sup>522</sup> Transcript, Volume 1, page 84, lines 6-7.

<sup>523</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-046(a), PDF pages 205-206.

information to justify why the average employee requires such a significant amount of personal file storage. Accordingly, the Commission is persuaded that AltaLink can employ additional efforts to reduce storage usage in this area.

504. The second area is in respect to the storage of LiDAR files and UAV drone footage. AltaLink has recently captured LiDAR data for all of its transmission lines,<sup>524</sup> and as mentioned in AltaLink's business case, this type of data has been driving its increased storage needs. The Commission asked AltaLink whether this data could be kept offline to reduce its storage needs. AltaLink submitted that offline storage does not meet its requirements because it is not backed up, is not secure and does not allow for the information to be accessed by multiple users at the same time.<sup>525 526</sup>

505. The Commission is not persuaded by these arguments and finds that AltaLink has not fully and reasonably assessed the alternatives for the cost-effective management and storage of these large files, for three reasons.

506. First, storing data offline does not necessarily equate to unsecure storage or to storage that is not backed up. Data that is stored offline can be both backed up and stored securely.

507. Second, the Commission is not persuaded that simultaneous work justifies storing LiDAR and UAV drone files online. If AltaLink requires multiple users to simultaneously access this data, the data can be uploaded to AltaLink's network as needed and removed later when collaboration on the data is no longer necessary.

508. Third, it may be cost-effective to employ a cloud-based solution to store LiDAR, UAV drone, and other large files. The Commission recognizes that AltaLink indicated that a cloud-based solution for all of its data would require substantial additional system development costs;<sup>527</sup> however, AltaLink did not evaluate the use of cloud-based storage for only LiDAR, UAV drone data and other large files on the record of this proceeding. In rebuttal evidence, AltaLink did submit some analysis regarding the monthly costs to back up all of its data in cloud storage.<sup>528</sup> However, limited context was provided to support this analysis, and the costs computed were only compared to the costs of the applied-for Data Storage Program,<sup>529</sup> which does not fully account for all the costs AltaLink will incur for data storage during the test period.

509. Finally, within this project, AltaLink's forecast capital expenditures also included costs associated with replacing its existing elastic cloud storage and VNX storage. AltaLink justified these replacements on the basis that both are at "end of life."<sup>530</sup> No explanation was provided regarding what caused the storage to be at "end of life" and sufficient details were not provided to support the conclusion that replacement is required. As such, the Commission finds that AltaLink has not met its onus to demonstrate that this data storage requires replacement in the 2022-2023 test period.

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<sup>524</sup> Exhibit 26509-X0026, Appendix 13-A32, PDF page 347, paragraph 31.

<sup>525</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-046(c), PDF page 206.

<sup>526</sup> Transcript, Volume 1, page 83, lines 23-25.

<sup>527</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 153, paragraph 724.

<sup>528</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 154, paragraph 726, Table 9-1.

<sup>529</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 154, paragraph 728, Table 9-1.

<sup>530</sup> Exhibit 26509-X0033, Appendix 13-B1-06, PDF page 139, paragraph 5.

510. Based on the foregoing, the Commission denies AltaLink's forecast capital expenditures for the Data Storage Program in the 2022-2023 test period. AltaLink is directed to remove its forecast capital expenditures in the amount of \$1.59 million in 2022 and \$1.16 million in 2023 for this program in its compliance filing.

511. To the extent that AltaLink forecasts costs for data storage in future GTAs, the Commission directs AltaLink to provide details of its strategy to minimize costs associated with data storage requirements.

### 10.3.8 Outage Management Replacement Project

512. AltaLink requested approval of forecast capital expenditures of \$3.0 million in 2022 for the Outage Management Replacement Project.<sup>531</sup> No capital expenditures beyond 2022 were forecast. Under this project, AltaLink proposed to replace a number of applications that collectively serve as its outage management system (OMS). AltaLink uses its OMS to support planning and execution of outages on its transmission system. AltaLink argued the project was required to mitigate the risk of incidents and non-compliance with AESO rules and to improve efficiency and reliability.<sup>532</sup>

513. For the reasons that follow, the Commission denies AltaLink's forecast capital expenditures in 2022 for the Outage Management Replacement Project.

514. AltaLink submitted that a number of recent incidents exemplify the need to replace its OMS. AltaLink indicated that three times between 2017 and 2019, it self-reported non-conformance with ISO Rule 306.4. These three non-conformances occurred due to the failure to schedule two outages (a telecom outage and a revenue meter outage), and failure to cancel an already scheduled outage. Additionally, AltaLink noted that a near-miss incident occurred in 2019, as a result of an incorrect switching order being used. This was due to human error in integrating outage information across a number of systems. AltaLink viewed that a more user-friendly, better functioning OMS would help mitigate against the risk of future non-conformances.<sup>533</sup>

515. The Commission does not find these examples to be sufficiently persuasive to warrant the costs associated with the replacement of AltaLink's OMS. The details for the underlying causes of these incidents appear to arise primarily from user error, rather than failure or incorrect operation of AltaLink's OMS. As such, additional training of the employees responsible for scheduling outages, and enhanced review and quality assurance measures, or other alternatives, which AltaLink did not explore in its evidence, may be sufficient to decrease the incidence of these errors. Additionally, despite these incidents, AltaLink has planned and executed numerous outages over this time period (using its existing OMS) in compliance with ISO rules.

516. AltaLink's current OMS is comprised of a number of applications, one of which is its system operations outage management (SOOM) system. The SOOM system is based on SAP technology and was deployed in 2016.<sup>534</sup> As explained in Section 10.3.9, AltaLink is planning to upgrade its ERP/EAM (which is currently a SAP ERP) in the near term. Because there is

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<sup>531</sup> Exhibit 26509-X0033, Appendix 13-B3-10, PDF page 173, Table 1-1.

<sup>532</sup> Exhibit 26509-X0033, Appendix 13-B3-10, PDF pages 170-171, paragraphs 11-16.

<sup>533</sup> Exhibit 26509-X0033, Appendix 13-B3-10, PDF page 168, paragraphs 5-6.

<sup>534</sup> Exhibit 26509-X0033, Appendix 13-B3-10, PDF page 168, paragraph 7.

currently integration between AltaLink's OMS and its ERP/EAM, the Commission considers that there could be future integration between these systems. Further, there are technical and financial risks if AltaLink's OMS is replaced in advance of its ERP/EAM upgrade. The Commission has denied expenditures for AltaLink's proposed ERP project and notes that AltaLink indicated that it does not currently intend to use Oracle's OMS.<sup>535</sup> If AltaLink were to proceed with a new OMS, it may have to incur expenditures to integrate the new OMS with its current ERP/EAM and then do so again after the ERP/EAM is upgraded. Also, AltaLink's choice of ERP/EAM may have a bearing on its choice of OMS.

517. AltaLink submitted SOOM is difficult and expensive to customize and configure, which has resulted in the need to use additional spreadsheets to plan outages.<sup>536</sup> The Commission notes that implementation of SOOM was forecast in AltaLink's 2015-2016 GTA, and was expected to cost \$1.9 million.<sup>537</sup> At the time, AltaLink described the benefits of the system as: improved data accuracy and reduced errors from increased automation, optimized plans to coordinate all planned outages, reduction in outage coordination delays, and a reduction in the number of outages.<sup>538</sup> Based on the issues AltaLink now raises with its current OMS, the implementation of SOOM has been unable to achieve all the benefits AltaLink originally intended. The Commission finds it concerning that after only five years, AltaLink already intends to replace this system with a completely different product. While SOOM may be fully depreciated,<sup>539</sup> this does not necessarily mean that it is an appropriate time to replace it.

518. AltaLink considered two alternatives for the project. Alternative 1 was the replacement of its OMS and alternative 2 was to continue to enhance and use its current OMS tools.<sup>540</sup> AltaLink completed an NPV analysis of the two alternatives it examined which estimated that alternative 1 has an NPV of revenue requirement of \$2.57 million and alternative 2 has an NPV of revenue requirement of \$2.80 million.<sup>541</sup> As such, from an economic perspective, alternative 1 is favourable. However, AltaLink did not provide any explanation as to the basis for its estimated costs in future years for each alternative. The Commission notes AltaLink forecast capital expenditures of \$0.3 million per year, in each year from 2024 to 2031, to continue with its current OMS, whereas AltaLink forecast zero capital expenditures for alternative 1 after the year 2023.<sup>542</sup> No supporting details were provided for these assumptions. The Commission considers it unlikely that if this project is completed, AltaLink will incur zero capital expenditures on its OMS over the next 10 years. Accordingly the Commission does not find the NPV analysis to be sufficiently supported and is thus not persuaded that AltaLink's proposed OMS project will be more economical than continuing to use its existing tools.

519. One potentially significant benefit from AltaLink's OMS replacement is a reduction in planned outages due to improved coordination of outages. AltaLink currently averages two outages per facility per year. AltaLink expects that with its OMS replacement it can reduce that

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<sup>535</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-047(a), PDF page 208.

<sup>536</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-047(b), PDF page 208.

<sup>537</sup> Proceeding 3524, Exhibit 0003.00.AML-3524, Appendix 13-B3.03, Table 2, PDF page 2676.

<sup>538</sup> Proceeding 3524, Exhibit 0003.00.AML-3524, Appendix 13-B3.03, Section 5. Project Benefits, PDF page 2679.

<sup>539</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-047(b), PDF page 208.

<sup>540</sup> Exhibit 26509-X0033, Appendix 13-B3-10, PDF page 173, paragraphs 22-23.

<sup>541</sup> Exhibit 26509-X0259, AML-AUC-2021AUG20-047 Attachment (NPV Outage Management), tab 'Revenue Requirement.'

<sup>542</sup> Exhibit 26509-X0259, AML-AUC-2021AUG20-047 Attachment (NPV Outage Management), tab 'Inputs.'

number to one.<sup>543</sup> The Commission considers that if this is achievable, it could be a compelling reason to implement the OMS replacement; however, AltaLink did not quantify any savings associated with outage reductions. In its NPV analysis, AltaLink included savings of \$0.17 million per year for alternative 1,<sup>544</sup> which could be due to this reduction in planned outages, but as mentioned above, AltaLink did not provide any explanation for the cost assumptions in the NPV analysis. Regardless, as discussed above, the Commission does not find the results of the NPV analysis to be sufficiently supported.

520. AltaLink is directed to remove its forecast capital expenditures of \$3.0 million in 2022 for the Outage Management Replacement Project in its compliance filing.

### **10.3.9 Enterprise Resource Planning Replacement Program and Enterprise Asset Management Replacement Program**

521. AltaLink requested approval of forecast capital expenditures of \$5.11 million in 2022 and \$7.27 million in 2023 for its Enterprise Resource Planning (ERP) Replacement Program.<sup>545</sup> Under this program, AltaLink proposed to replace its current ERP software with one from a different vendor over a period of four years. AltaLink utilizes its ERP to support a number of critical business functions.

522. In conjunction with its ERP replacement, AltaLink also requested approval of forecast capital expenditures of \$1.50 million in 2022 and \$6.00 million in 2023 for its Enterprise Asset Management (EAM) Replacement Project.<sup>546</sup> Under this project AltaLink proposed to implement a stand-alone EAM system over a period of four years.

523. The Commission denies AltaLink's forecast capital expenditures in the test period for the ERP Replacement Program and the EAM Replacement Project because:

- (i) AltaLink did not consider suitable alternatives that may be more cost-effective.
- (ii) The cost information AltaLink used to compare alternatives was unsupported and unreliable.
- (iii) The Commission is not persuaded it is necessary for AltaLink to begin work to upgrade its ERP in the test period.

524. Currently AltaLink uses SAP's ERP 6.0 system to support a number of critical business functions such as Finance, Treasury, Asset Management, Maintenance, Projects, Materials and Warehouse Management, Human Resources, and others.<sup>547</sup> AltaLink's SAP ERP is an on-premise implementation, meaning that the SAP software runs, and data resides, locally on AltaLink's own servers. This is different from a cloud implementation, where the software and data is hosted by a third party and is provided as a service.

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<sup>543</sup> Exhibit 26509-X0033, Appendix 13-B3-10, PDF page 170, paragraph 14.

<sup>544</sup> Exhibit 26509-X0259, AML-AUC-2021AUG20-047 Attachment (NPV Outage Management), tab 'Inputs,' Excel row 22.

<sup>545</sup> Exhibit 26509-X0033, Appendix 13-B3-03, PDF page 120, paragraph 54, Table 1-1.

<sup>546</sup> Exhibit 26509-X0033, Appendix 13-B3-11, PDF page 183, paragraph 51, Table 1-2.

<sup>547</sup> Exhibit 26509-X0033, Appendix 13-B3-03, PDF page 111, paragraph 2.

525. SAP has announced that mainstream vendor support for its ERP 6.0 system will cease at the end of 2027.<sup>548</sup> AltaLink indicated that it requires mainstream support to ensure certification with new versions of vendor software. Without the upgrades, product fixes and security patches that come with mainstream support, AltaLink is concerned its business operations may be disrupted, which would impact overall availability, reliability and protection against security vulnerabilities.<sup>549</sup> As such, AltaLink has begun planning to replace or upgrade its ERP.

526. SAP’s successor product to AltaLink’s current ERP system is SAP S4/HANA. If AltaLink were to continue to use an ERP from SAP, then AltaLink would need a system upgrade. However, AltaLink has proposed to replace its ERP with one from a different vendor; specifically, a cloud implementation of Oracle Fusion.

527. AltaLink is a wholly owned subsidiary of Berkshire Hathaway Energy (BHE). BHE owns a number of other companies engaged in providing various types of utility services. A number of these affiliates are replacing or upgrading their ERP systems in the near or medium term. Some of these affiliates currently use a SAP ERP, while others use an Oracle or Peoplesoft ERP.<sup>550</sup>

528. In 2020, BHE commenced negotiations with two ERP providers: SAP and Oracle, for a BHE-wide shared ERP solution. This process resulted in BHE negotiating a contract with Oracle for the implementation, support and licensing costs for a BHE-wide shared Oracle cloud system for its subsidiaries.<sup>551</sup> AltaLink expressed its view that participating in this shared system would be more cost-effective than proceeding with its own ERP upgrade and has thus proposed to upgrade its ERP to a cloud implementation of Oracle Fusion.<sup>552</sup>

529. AltaLink also currently uses its ERP for asset management functions.<sup>553</sup> In conjunction with the planned replacement of its ERP, AltaLink also proposed to implement IBM’s Maximo EAM. AltaLink noted that other BHE affiliates are also implementing IBM Maximo, and like Oracle, it intends to implement a Maximo system that is shared with other BHE utilities.<sup>554</sup>

530. AltaLink examined three alternatives for replacement of its ERP/EAM, which are summarized in the table below:

**Table 22. AltaLink’s three alternatives for the replacement of its ERP/EAM**

Alternative	ERP	EAM
1	Oracle Fusion (BHE-wide shared service) – Cloud	Maximo – On premise
2	SAP S4/HANA (BHE-wide shared service) – Cloud	Maximo – On premise
3	SAP S4/HANA – Cloud/On premise (i.e., hybrid)	

Source: Exhibit 26509-X0033, Appendix 13-B3-03, PDF pages 121-122, paragraphs 59-61.

531. AltaLink explained that due to the storage of Bulk Electric System Cyber System Information (BCSI), each option requires an on-premise solution to store asset information. In AltaLink’s view, it would be unable to meet requirements of ARS CIP-004 and CIP-011 if BCSI

<sup>548</sup> Exhibit 26509-X0033, Appendix 13-B3-03, PDF page 112, paragraph 13.

<sup>549</sup> Exhibit 26509-X0033, Appendix 13-B3-03, PDF page 112, paragraph 14.

<sup>550</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(l), PDF page 201.

<sup>551</sup> Exhibit 26509-X0033, Appendix 13-B3-03, PDF pages 112-113, paragraphs 16-18.

<sup>552</sup> Exhibit 26509-X0033, Appendix 13-B3-03, PDF page 111, paragraph 5.

<sup>553</sup> Exhibit 26509-X0033, Appendix 13-B3-11, PDF page 175, paragraph 4.

<sup>554</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(c), PDF page 198.

was stored in the cloud.<sup>555</sup> As such, the Oracle Fusion – Cloud and SAP S4/HANA – Cloud alternatives include an on-premise implementation of Maximo, and the hybrid SAP S4/HANA alternative includes an on-premise implementation of SAP.

532. The Commission finds that AltaLink has neglected to consider all available reasonable alternatives for its on-premise ERP/EAM requirements. Specifically, AltaLink has not sufficiently analyzed an on-premise implementation of SAP S4/HANA.

533. The Commission asked AltaLink why it did not consider an on-premise SAP S4/HANA alternative in its analysis. AltaLink submitted that Solvera, a third-party SAP systems integrator that AltaLink engaged to assess different ERP options, did not recommend this alternative. Instead, Solvera recommended the hybrid alternative, which is what AltaLink examined in its analysis.<sup>556</sup>

534. AltaLink filed a report that details Solvera’s assessment.<sup>557</sup> The Commission notes that the Solvera report estimated that a SAP on-premise upgrade (labelled in the report as Option 1 - System Conversion) would have the lowest implementation cost of the options considered by Solvera.<sup>558</sup> Further, the only difference between the “pros” and “cons” that Solvera identified for this alternative, and the one AltaLink analyzed, is that the cloud/on-premise hybrid alternative would enable the use of “Intelligent SAP Solutions (SAC) to enhance business decisions,” whereas the purely on-premise alternative would not.<sup>559</sup> AltaLink did not quantify the value of the “Intelligent SAP Solutions” feature, or explain why it is required.

535. AltaLink also stated that an on-premise SAP S4/HANA alternative was not analyzed because the costs of implementing new on-premise SAP S4/HANA hardware were perceived to be higher than pursuing a cloud alternative. However, AltaLink did not provide any supporting evidence for this assertion.<sup>560</sup> As such, the Commission is not persuaded that AltaLink sufficiently evaluated all reasonable options for its ERP system. AltaLink unnecessarily ruled out an upgrade to SAP S4/HANA on-premise as an alternative, even though that option had the lowest implementation costs according to the Solvera report.

536. With respect to Maximo, the evidence leads the Commission to conclude that AltaLink’s decision to adopt Maximo was primarily driven by its affiliation with other BHE entities that were adopting Maximo. AltaLink did not provide an analysis of alternatives to Maximo for use as its EAM (if AltaLink upgraded to Oracle Fusion – Cloud, or SAP S4/HANA - Cloud). The Commission is not persuaded that it is reasonable for AltaLink to adopt Maximo simply because its affiliates are doing so. The Commission expects AltaLink’s management to carry out its responsibilities, such as an IT system procurement decision, independently from the decision-making of AltaLink’s parent company or its affiliates. This expectation is consistent with the obligation of AltaLink and its management under the AltaLink Inter-Affiliate Code of Conduct

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<sup>555</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(a), PDF pages 196-197.

<sup>556</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(b), PDF pages 197-198.

<sup>557</sup> Exhibit 26509-X0154, AML-IPCAA-2021JUN25-011 Attachment, Solvera AML SAP S4 Transition Assessment.

<sup>558</sup> Exhibit 26509-X0154, AML-IPCAA-2021JUN25-011 Attachment, Solvera AML SAP S4 Transition Assessment, PDF page 7.

<sup>559</sup> Exhibit 26509-X0154, AML-IPCAA-2021JUN25-011 Attachment, Solvera AML SAP S4 Transition Assessment, PDF pages 5-6.

<sup>560</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(b), PDF pages 197-198.

and compliance plan.<sup>561</sup> Without more specific evidence, the Commission is unable to conclude that Maximo is the most suitable alternative for AltaLink’s EAM project on a stand-alone basis, and that other, potentially lower cost, solutions are not preferable.

537. Accordingly, the Commission finds that AltaLink has failed to reasonably consider suitable alternatives to both Oracle Fusion – Cloud and Maximo that may be more cost-effective.

538. The Commission will now consider whether AltaLink’s cost comparators are reliable and supported.

539. AltaLink selected the Oracle Fusion – Cloud alternative because it claimed that this solution was the lowest cost alternative examined. The results of the cost analysis conducted by AltaLink, which were filed in evidence, are provided in the following table:

**Table 23. Cost analysis of ERP alternatives**

Alternative		Total costs over a 10-year period (1)	NPV of revenue requirement (2)
		(\$ million)	
1	Oracle cloud (BHE-wide shared service) and Maximo on-premise	64.7	50.4
2	SAP S4/HANA cloud (BHE-wide shared service) and Maximo on-premise	71.5	59.2
3	SAP S4/HANA Cloud/On-premise (i.e. Hybrid) solution	77.6	56.4

Source: (1) Exhibit 26509-X0033, Appendix 13-B3-03, PDF page 121, paragraph 58, Table 1-4.

(2) Exhibit 26509-X0256, AML-AUC-2021AUG20-044 Attachment 2, NPV Calculation, Tab: Revenue Requirement.

540. AltaLink’s analysis showed that the transition of a critical and complex piece of business software from one vendor to another can be achieved at a lower cost than an upgrade to a newer version from the same vendor. D. Madsen, on behalf of the CCA, viewed that a migration from SAP to Oracle, as contemplated by AltaLink, would be more complex and costly when compared to a SAP upgrade.<sup>562</sup> The Commission requested that AltaLink explain which cost categories contributed to the Oracle Fusion – Cloud alternative being the lowest in cost.

541. The Commission does not find AltaLink’s response to be convincing. AltaLink explained that it is not privy to the considerations made by SAP and Oracle in developing their pricing and thus could not explain the differences.<sup>563</sup> However, AltaLink could have compared various components of the proposals, including implementation, licensing and maintenance costs between the two ERP providers, to support its position.

542. Further AltaLink should have explained the differences in its own estimated costs associated with each option. These costs include internal AltaLink labour costs (such as costs for implementation, business transformation and ongoing maintenance) and costs associated with on-premise hardware support. As discussed in the paragraphs that follow, the Commission finds there are material unexplained discrepancies in these costs, and as such, the Commission cannot reasonably rely on AltaLink’s assessment.

<sup>561</sup> Exhibit 26509-X0041, PDF pages 16 and 35, Section 3.1.1 and Section 3.1.5.

<sup>562</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 76 and 78, paragraphs 215 and 220.

<sup>563</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(h), PDF page 200.

543. AltaLink forecast internal labour for the SAP alternatives to be approximately \$12 million higher than the Oracle Fusion – Cloud alternative.<sup>564</sup> The Commission observes that without this stated difference, the SAP alternatives may be lower cost than the Oracle Fusion – Cloud alternative.<sup>565</sup> In rebuttal evidence, AltaLink explained that its internal SAP team would be engaged to support the migration to a newer version of SAP, whereas if AltaLink migrates to Oracle, it would then have to engage with external resources since it does not have any Oracle Fusion experience.<sup>566</sup>

544. AltaLink’s cost breakdown appears to the Commission to be inconsistent with higher external labour requirements for the Oracle Fusion – Cloud alternative. This is because the external labour costs for the Oracle Fusion – Cloud alternative are estimated to be lower than for the SAP alternatives.<sup>567</sup> Additionally, it is unclear to the Commission how, if at all, AltaLink accounted for costs to either retrain the members of its internal SAP team or to sever this internal team and hire new employees with Oracle Fusion – Cloud experience.

545. A second discrepancy exists between the cost estimates provided by AltaLink’s third-party consultant, Solvera, and the estimates provided by AltaLink.

546. To prepare the cost estimates for the implementation of the hybrid SAP S4/HANA alternative, AltaLink submitted that it relied on the estimates provided by Solvera.<sup>568</sup> However, the estimates provided by AltaLink are not consistent with the estimates provided by Solvera. For implementation of the hybrid SAP S4/HANA alternative, Solvera estimated external IT costs of \$4.3 to \$5.2 million, and AltaLink internal costs of \$1.2 to \$1.5 million.<sup>569</sup> However, AltaLink’s estimate shows external labour upgrade/implementation costs of \$15.8 million for this option and a further \$15.8 million for internal labour.<sup>570</sup> This total of \$31.6 million is nearly five times greater than Solvera’s estimate.

547. In rebuttal evidence, AltaLink attempted to explain the gap between its forecast and that of Solvera’s by noting that there are hardware refreshes of its SAP on-premise hardware in 2023 and 2027 in its forecasts.<sup>571</sup> However, these costs, which total \$3 million in each of these years,<sup>572</sup> are not included in the estimates the Commission has cited above, and at any rate, do not explain the discrepancy between the estimates of Solvera and AltaLink.

548. A third discrepancy exists in the estimated post-implementation costs for the alternatives. AltaLink estimated no internal/external labour costs would be incurred for Oracle Fusion - Cloud and SAP S4/HANA – Cloud (i.e., the BHE-wide shared services solutions) options in the years

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<sup>564</sup> Exhibit 26509-X0255, AML-AUC-2021AUG20-044 Attachment 1: Cost breakdown of alternatives in ERP SAP/Oracle - Upgrade/implementation - Internal costs of \$18.7 (Alternative 2) – \$6.8 (alternative 1) = \$11.9 million. Similarly the Internal labour costs of alternative 3 are \$11.6 million higher than alternative 1.

<sup>565</sup> Considering the difference in NPV of revenue requirement calculated by AltaLink.

<sup>566</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 164, paragraph 783.

<sup>567</sup> Exhibit 26509-X0255, AML-AUC-2021AUG20-044 Attachment 1, Cost breakdown of alternatives in ERP.

<sup>568</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(f), PDF page 199.

<sup>569</sup> Exhibit 26509-X0154, AML-IPCAA-2021JUN25-011 Attachment, Solvera AML SAP S4 Transition Assessment, PDF page 7.

<sup>570</sup> Exhibit 26509-X0255, AML-AUC-2021AUG20-044 Attachment 1, Cost breakdown of alternatives in ERP, PDF page 3: Sum of SAP cloud and on-premise upgrade/implementation costs in the years 2022 to 2026.

<sup>571</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 160, paragraph 762.

<sup>572</sup> Exhibit 26509-X0255, AML-AUC-2021AUG20-044 Attachment 1, Cost breakdown of alternatives in ERP, PDF page 3: “On-premise hardware capital and maintenance costs (as applicable).”

after 2026. Whereas, AltaLink forecast between \$1.4 and \$5.2 million each year in internal/external labour costs for alternative 3 (the hybrid SAP S4/HANA option) in the years after 2026.<sup>573</sup>

549. AltaLink noted that the post-implementation costs of any on-premise solutions will continue to require upgrades, annual capital updates, interfaces and customizations. In contrast, for cloud alternatives, the vendor will undertake system updates and upgrades.<sup>574</sup> While AltaLink may experience reduced internal costs as a result of not having to complete updates and upgrades for cloud systems, the Commission does not consider it to be reasonable to include costs associated with completing software customizations to on-premise systems in the comparison. There is no similar ability to customize the software for cloud alternatives, and AltaLink must instead adopt the processes and procedures of the software rather than customize the software to its processes and procedures.<sup>575</sup> To ensure an accurate comparison, AltaLink could follow a similar approach if it was using on-premise software. If AltaLink customizes its on-premise software, it is presumably because it is more cost-effective to do so, rather than for AltaLink to adopt the processes and procedures of the software.

550. This discrepancy also engages another unexplained component of the cost information provided by AltaLink. BHE will act as the system administrator for the shared-service Oracle system; however, AltaLink has not explained what its future financial commitments will be to BHE or to its affiliates for any services that may be provided as part of this shared-service model.<sup>576</sup> Additionally, AltaLink's Maximo implementation will be shared with the other BHE-utilities and located at Nevada Energy's Data Center.<sup>577</sup> The Commission considers that a full understanding of the long-term cost implications of each potential alternative is necessary in order for a valid comparison to be made.

551. Finally, the Commission notes that inconsistencies exist in AltaLink's NPV analysis of the alternatives. Specifically, AltaLink has used different "regulatory assumptions," such as cost of debt, rate of return, and equity ratio, for the hybrid SAP S4/HANA alternative as compared to the Oracle Fusion - Cloud and SAP S4/HANA - Cloud alternative.<sup>578</sup> These parameters should not differ between alternatives unless there is a valid basis for it, which was not provided.

552. Beyond the discrepancies and errors identified above, AltaLink's forecast costs appear to be excessive when compared to a similar project recently undertaken by a peer utility. ATCO Electric recently completed an upgrade of its existing ERP from Oracle (implemented on-premise) to Oracle Fusion (implemented in the cloud), at an approximate capital cost of \$16.9 million.<sup>579</sup> Conversely, AltaLink forecast it would cost \$37.7 million to upgrade from SAP on-premise to SAP cloud (alternative 2).<sup>580</sup> This is approximately 2.2 times more than ATCO Electric's costs. While the Commission accepts that there are differences between the two

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<sup>573</sup> Exhibit 26509-X0255, AML-AUC-2021AUG20-044 Attachment 1, Cost breakdown of alternatives in ERP.

<sup>574</sup> Exhibit 26509-X0033, Appendix 13-B3-03, PDF page 123, Appendix 1, first and second footnotes.

<sup>575</sup> Exhibit 26509-X0033, Appendix 13-B3-03, PDF page 116, paragraphs 37-38.

<sup>576</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(k), PDF page 201.

<sup>577</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(c), PDF page 198.

<sup>578</sup> Exhibit 26509-X0256, AML-AUC-2021AUG20-044 Attachment 2, NPV Calculation, Tab 'Revenue Requirement,' see rows 43-47 and 97-101 compared with rows 152-156.

<sup>579</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 163, paragraph 775, Table 9-3.

<sup>580</sup> Exhibit 26509-X0255, AML-AUC-2021AUG20-044 Attachment 1, Cost breakdown of alternatives in ERP, PDF page 2: Sum of SAP upgrade/implementation costs.

companies, their ERP systems and an upgrade of SAP versus Oracle, the Commission finds a difference of this magnitude to be unsupported by the evidence on the record.

553. With respect to Maximo, the Commission is not persuaded that its implementation is supported by the savings AltaLink has indicated that it expects to achieve.

554. AltaLink estimated that implementing Maximo would enable it to defer \$1 million of capital expenditures per year when compared to its current practices.<sup>581</sup> However, these purported savings were exactly the same, and arose from the same activities, as those that AltaLink estimated it could achieve through the development of an asset risk tool in its previous GTA.<sup>582</sup> AltaLink ceased development of the asset risk tool before it was complete, citing that it lacked the data needed to validate and calibrate the models it made, and because there were gaps between its requirements and the available vendor solutions. AltaLink instead incorporated its requirements into the EAM project, and has continued working to improve data quality.<sup>583</sup> AltaLink also stated that it is possible these savings could also be achieved under an implementation of the hybrid SAP S4/HANA alternative.<sup>584</sup> As such, the Commission is not persuaded that Maximo is necessary to achieve these savings, and AltaLink has not provided a compelling reason for it to implement Maximo over the other available alternatives.

555. The Commission finds that the cost comparisons AltaLink used to support its conclusion that the Oracle Fusion – Cloud solution is the lowest cost alternative are unreliable and not supported by the evidence on the record. The Commission is not persuaded that the Oracle Fusion – Cloud would ultimately be the lowest cost option of those considered by AltaLink.

556. In the paragraphs that follow, the Commission considers whether some amount of capital funding is required in this test period for AltaLink to respond to the risks associated with SAP's stated discontinuation of support for AltaLink's ERP.

557. As SAP has indicated that mainstream support will be discontinued for AltaLink's current ERP at the end of 2027, AltaLink identified that, as a contingency measure, it requires at least one full year of completed financials on the new system before support for its existing system is discontinued.<sup>585</sup> AltaLink's implementation of its new ERP is forecast to span four years, starting in 2022, with the bulk of features being implemented in 2025, including transition of its financials to the new system in 2025.<sup>586</sup>

558. The CCA expressed its opinion that SAP will likely extend the deadline for maintenance support, citing the fact the deadline has already been extended once, from the previous deadline of 2025. The CCA also cited a Brightwork Research & Associates article predicting that SAP will further extend the deadline to 2030 in order to retain customers.<sup>587</sup>

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<sup>581</sup> Exhibit 26509-X0033, Appendix 13-B3-11, PDF page 178, paragraph 26, Table 1-1.

<sup>582</sup> Exhibit 26509-X0213, AML-AUC-2021AUG20-044, Preamble, page 68.

<sup>583</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(o), PDF page 202.

<sup>584</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044(n), PDF page 202.

<sup>585</sup> Exhibit 26509-X0033, Appendix 13-B3-03, PDF page 112, paragraph 15.

<sup>586</sup> Exhibit 26509-X0033, Appendix 13-B3-03, PDF page 121, paragraph 57, Table 1-3.

<sup>587</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 81-82, paragraphs 231-233.

559. The Solvera report estimated that it would take approximately two years to upgrade AltaLink's SAP system to SAP S4/HANA.<sup>588</sup> ATCO Electric recently completed its Oracle upgrade in approximately three years.<sup>589</sup> While, as AltaLink has pointed out, ATCO Electric also forecast continued work in its recent GTA for projects related to its Oracle system,<sup>590</sup> the Commission notes these projects are for ancillary types of applications, and are not part of the main upgrade.

560. AltaLink's four-year timeframe for upgrading its ERP system for the Oracle-Fusion option. Because of the greater complexity associated with transitioning to a system from a new vendor, potential alignment with the schedule of the larger BHE implementation,<sup>591</sup> <sup>592</sup> and having to implement a new EAM system, AltaLink's implementation schedule may be longer than would be necessary if other alternatives were pursued. As a result, the Commission is not persuaded that the forecast capital expenditures on these projects are necessary in this test period.

561. Finally, it is unclear to the Commission whether AltaLink has committed to incurring any costs for its ERP Program in this test period. AltaLink indicated that it signed a 10-year implementation and support agreement with Oracle Canada on February 25, 2021.<sup>593</sup> The agreement was not placed on the record of this proceeding and it is unclear whether AltaLink has committed to incurring costs under it within the test period.

562. Accordingly, the Commission denies all of AltaLink's forecast capital expenditures for the ERP Replacement Program and EAM Replacement Project in this test period. AltaLink is directed to remove its forecast capital expenditures of \$5.11 million in 2022 and \$7.27 million in 2023 for the ERP Program and \$1.50 million in 2022 and \$6.00 million in 2023 for the EAM Replacement Project in its compliance filing.

### **10.3.10 Has AltaLink reasonably forecast its capital labour within its IT business cases?**

563. AltaLink's forecast capital expenditures for IT programs and projects include hardware, software and labour costs.

564. H. Mahmudov and J. Crozier, on behalf of the UCA, challenged AltaLink's IT capital labour cost forecasts. The UCA stated that AltaLink's combined 2022-2023 labour cost forecast for its IT capital projects and programs comprises approximately 66 per cent, or \$50.2 million, of AltaLink's total forecast IT capital spend of \$76.1 million.<sup>594</sup>

565. The UCA argued that AltaLink's IT capital labour expenditures are forecast to increase at an excessive rate, from an average of \$16.9 million per year in AltaLink's 2019-2021 GTA to an average of \$25.1 million per year in this test period. This represents a forecast increase of 48 per

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<sup>588</sup> Exhibit 26509-X0154, AML-IPCAA-2021JUN25-011 Attachment, Solvera AML SAP S4 Transition Assessment, PDF page 7.

<sup>589</sup> Expenditures were incurred in the years 2017, 2018 and 2019 for ATCO Electric's Oracle E-Business Upgrade per Proceeding 24964, ATCO Electric Transmission 2020-2022 General Tariff Application, Exhibit 24964-X0144, Supplementary Information, GPE IT Project: Oracle E-Business Upgrade, PDF page 1.

<sup>590</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 162, paragraph 775.

<sup>591</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 171, paragraph 814.

<sup>592</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-044 (j), PDF page 202.

<sup>593</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 272, paragraph 879

<sup>594</sup> Exhibit 26509-X0276, UCA evidence of H. Mahmudov and J. Crozier, PDF page 27.

cent.<sup>595</sup> The UCA maintained that AltaLink did not provide sufficient information in terms of labour hours, labour rates and escalation factors to justify how its IT capital labour forecasts were derived. The UCA recommended that AltaLink reduce its IT capital labour forecast by \$6.9 million in each of 2022 and 2023, and also, to provide sufficient justification for its IT capital labour expenditure in future business cases to reflect “proper effort and labour rate estimates for both internal and external labour.”<sup>596</sup>

566. In its rebuttal evidence, AltaLink contended that it should not be required to provide a business case to support its IT capital labour expenditures, as requested by the UCA, because it would have to expend a significant amount of resources to produce such an analysis, before knowing whether its IT capital projects will even be approved.<sup>597</sup>

567. Given the significant labour capital expenditures forecast for approval in this test period, the Commission agrees with the UCA that AltaLink should provide more specific information to support its expenditures. The Commission expects that, at a minimum, AltaLink should have used analyses to derive its IT capital labour expenditure forecast, including an analysis of forecast activity levels, labour hours and labour rates. The Commission considers that such information would have been useful to demonstrate whether AltaLink’s IT capital labour expenditure forecasts are reasonable.

568. Accordingly, the Commission expects that in future GTAs, AltaLink will explain how it derived its IT capital labour expenditure forecasts for IT capital projects where labour expenditures are forecast to be \$500,000 or more. AltaLink must provide separate explanations for each of its forecast internal labour and contracted labour. With these explanations, AltaLink must:

- identify any assumptions (e.g., labour hours and labour rates) that were used to derive its IT capital labour expenditure forecasts, and explain how it derived those assumptions; and
- identify any relevant metrics or activity level indicators that were used to derive its IT capital labour expenditure forecasts. If such information is not available, AltaLink must identify other relevant sources of information that were used to derive its forecasts.

569. The Commission is of the view that these analyses underpin any business’ budgeting process, particularly one that uses a zero-based budgeting approach and should therefore not create incremental work.

570. Notwithstanding the overarching concern identified above by the UCA, the Commission has evaluated AltaLink’s IT capital projects that were at issue in this proceeding in Section 10.3 of this decision. The Commission has directed AltaLink to reduce its forecast IT capital expenditures (which includes expenditures for labour resources) for the following projects and programs:

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<sup>595</sup> Exhibit 26509-X0276, UCA evidence of H. Mahmudov and J. Crozier, PDF pages 27-30.

<sup>596</sup> Exhibit 26509-X0276, UCA evidence of H. Mahmudov and J. Crozier, PDF pages 31-32.

<sup>597</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 262-263, paragraphs 1203-1205.

- Software implementations and process improvements within the Physical Security System Program;
- Data Storage Program;
- Outage Management Replacement Program;
- Enterprise Resource Planning (ERP) Replacement Program; and
- Enterprise Asset Management (EAM) Program.

571. In its compliance filing to this decision, in addition to providing information on how the Commission's directions on each of these five projects affect AltaLink's revenue requirement, AltaLink is further required to explain how these reductions will affect AltaLink's associated IT labour expenditure forecasts. Accordingly, the Commission directs AltaLink to identify the labour expenditure adjustments associated with the reductions for each of the projects listed above, and to provide detailed calculations and explanations for those labour expenditure adjustments, in its compliance filing. As part of its response to this direction, AltaLink must clearly identify any labour assumptions (e.g., salaries per FTE, inflation factors, etc.) that were used to calculate the labour expenditure adjustments, and explain the basis for those assumptions. This information must be disaggregated by internal and contracted labour. For the internal labour component, AltaLink must also identify any impacts to its capital FTEs.

572. Furthermore, the Commission directs AltaLink not to offset the impact of a reduction to IT capital FTEs with an increase in contractor costs and/or O&M FTEs, and vice-versa.<sup>598</sup>

### **10.3.11 Impacts of savings from IT projects in revenue requirement**

573. AltaLink proposed to undertake a number of IT projects in the test period that it justified primarily, or in part, on the basis they would lead to cost savings. The Commission provides the following summary table of the IT projects where savings in operating costs are estimated to occur in this test period:

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<sup>598</sup> Decision 22050-D01-2017: ATCO Electric Ltd., 2015-2017 Transmission General Tariff Application Compliance Filing, June 19, 2017, PDF pages 9-10, paragraphs 27-31; and, Decision 24964-D01-2021, PDF page 22, paragraph 69.

**Table 24. Forecast operating cost savings due to IT projects**

IT Program/Project	Estimated operating cost savings		Relevant USA accounts
	2022	2023	
	(\$)		
13-B2.01 2022 Workforce Mobility and Collaboration		211,000	Security and IT A&G Expenses (934) O&M Misc Transmission (566)
13-B2.02 2022 RPA Program	1,000,000	1,300,000	Admin and General Salaries (920) Security and IT A&G Expenses (934) O&M Misc Transmission (566)
13-B2.03 2022 Vegetation Management System		214,000	Vegetation Management (571)
13-B2.04 2022 Data Analytics and Management Program		500,000	O&M Misc Transmission (566)
<b>Total:</b>	1,000,000	2,225,000	

Source: Exhibit 26509-X0153, AML-IPCAA-2021JUN25-010 Attachment.

574. The Commission supports AltaLink pursuing projects that can deliver cost savings. However, in assessing expenditures and capital additions on such projects, the Commission considers that the savings must ultimately be realized and reflected in AltaLink’s revenue requirement.

575. In general, AltaLink stated that it incorporated the estimated savings into its forecasts but no reduction in labour hours or headcount was forecast because (i) staff would be redeployed to focus on higher value work; and/or (ii) savings were offset by a growth in workload.<sup>599 600 601 602</sup>

576. The Commission does not accept the first explanation. In the Commission’s view, the work that is currently being completed is logically of higher value than the work that is not completed. If such higher value work existed, and AltaLink needed to complete this work to provide safe, reliable and cost-effective service, AltaLink would undertake the work, regardless of whether it could reduce its workload on other tasks. In the Commission’s view, the examples AltaLink provided of this higher value work<sup>603</sup> generally represent tasks that are already being completed, but could, in theory, have more time spent on them.

577. With respect to the second explanation, the Commission agrees that FTEs or costs might not decrease if the savings achieved are offset by an equal or greater amount of additional work. However, the Commission agrees with the UCA,<sup>604</sup> that AltaLink needs to be able to quantitatively demonstrate that this is the case. As the UCA explained, AltaLink is able to quantify the savings it will achieve from these projects, and it should be able to quantify the costs to undertake any additional work it was previously not completing because such information would have been necessary for AltaLink to forecast its expenses in this test period and for it to include the cost savings in its revenue requirement.

<sup>599</sup> Exhibit 26509-X0153, AML-IPCAA-2021JUN25-010 Attachment.

<sup>600</sup> Exhibit 26509-X0151, AML-IPCAA-2021JUN25-010(b), PDF page 45.

<sup>601</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 131, paragraph 630.

<sup>602</sup> Exhibit 26509-X0125, AML-UCA-2021JUN25-004(a), PDF pages 7-8.

<sup>603</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-042(c), PDF pages 186-187.

<sup>604</sup> Exhibit 26509-X0302, UCA-AUC-2021SEP24-006, PDF page 11.

578. In the Commission’s view, stating that the cost savings will be offset by growth, without quantitatively demonstrating how, does not adequately support AltaLink’s contention that any savings will be offset by new costs. Further, AltaLink must demonstrate why this additional work is necessary to provide safe, reliable and cost-effective service.

579. It is not clear to the Commission that AltaLink has incorporated the estimated savings into its operating expenses in all instances. The Commission notes AltaLink has provided some information with respect to general operating costs in USA account 934, to quantitatively demonstrate how increased costs have been offset by planned efficiency achievements.<sup>605</sup> However, this does not account for all the savings identified in the Table 24 above.

580. To facilitate the efficient assessment of whether savings from projects undertaken in this test period are appropriately reflected in AltaLink’s revenue requirement in future test periods, the Commission requires AltaLink to file additional information as part of its compliance filing to this application. AltaLink is therefore directed to complete the following table that has been prepared by the Commission. Within this table, AltaLink should include all projects (including non-IT projects) approved by the Commission in this GTA for which AltaLink expects to realize cost savings. Sample data has been included in the table below for demonstration purposes.

**Table 25. Table for compliance filing of estimated savings resulting from capital projects**

Project name	Forecast completion	Estimated annual savings (\$ million)					USA account / CRU Project/Program
		2022	2023	2024	2025	2026	
Project A	2023	-	-	0.2	0.2	0.2	USA 920
				0.1	0.3	0.3	USA 566
				0.5	0.5	0.5	Appendix 13-A07 – Substation Components
Project B	Ongoing program	1.2	2.4	2.4	2.4	2.4	USA 934
...	...	...	...	...	...	...	...

581. In its next GTA, AltaLink is directed to reconcile the table that it provides in its compliance filing in response to the direction in the previous paragraph with information regarding the projects AltaLink actually completed, and to explain whether the estimated savings were realized in 2022 and 2023 (if applicable), and what savings are expected to be realized on a go-forward basis. AltaLink should include an analysis showing how the savings have been incorporated into its forecast revenue requirement. AltaLink may wish to refer to UCA-AUC-2021SEP24-006(i)-(iv)<sup>606</sup> for guidance on how this analysis can be completed.

#### 10.4 Capital incentive mechanism

582. The Commission denies D. Madsen’s request, on behalf of the CCA, for AltaLink to adopt its proposed capital incentive mechanism for its non-direct assigned capital projects.

583. The CCA contended that transmission costs are steadily increasing in Alberta, which is not optimal for ratepayers. As a result, the CCA proposed that a capital incentive mechanism pursuant to which ratepayers pay AltaLink an incentive payment in order for it to significantly

<sup>605</sup> Exhibit 26509-X0217, AML-CCA-2021JUN25-013(b), PDF page 31.

<sup>606</sup> Exhibit 26509-X0302, UCA-AUC-2021SEP24-006, PDF page 11.

defer its non-direct assigned projects, to cancel a project entirely, or to materially reduce the size and scope of a project. Essentially, AltaLink would continue to be able to collect the approved equity return associated with a project even when it did not spend its approved forecast for non-direct assigned capital. As a result, AltaLink would return to ratepayers the forecast depreciation and debt return included in rates in the test period and would not collect those amounts going forward. Using a reserve account, the incentive payment would effectively become a payment to reduce the overall revenue requirement that ratepayers would otherwise have to pay.<sup>607</sup>

584. The Commission's view is that the proposed capital incentive mechanism would require further refinement before it could be considered, as evidenced by the modifications to the mechanism proposed by the CCA in response to a Commission IR.<sup>608</sup> The Commission is also of the view that any capital incentive mechanism would need to be tested to ensure it is robust and provides appropriate incentives over a wide range of possible scenarios. This is particularly the case where the mechanism would be in place for several years. In addition, the Commission would need to consider what process steps and regulatory oversight would be required to put into effect any type of incentive payment.

## **11 Issue 7: Has AltaLink reasonably forecast its 2022 and 2023 capital expenditures for its direct assigned capital projects, and should Commission approval be granted for AltaLink to migrate towards a flexible EPCm model?**

### **11.1 The timing of direct assigned capital projects**

585. Direct assigned capital projects are transmission facility proposals that the AESO has directed a TFO, in this case AltaLink, to submit for Commission approval to meet the need identified in the AESO's needs identification document (NID). Direct assigned capital projects are subject to a deferral account. Consequently, the actual expenditures on these projects will be subject to a detailed prudence review in future DACDA applications prior to final acceptance of these costs.

586. The construction and operation of transmission facilities can be assigned to a TFO in response to an AESO-identified need to alleviate a constraint or condition of the transmission system or improve the efficiency of the transmission system. It can also be initiated by the AESO in response to a request for new or modified system access service by a market participant. The former are referred to as "system projects,"<sup>609</sup> while the latter are referred to as "connection projects."

587. In its application update, AltaLink requested approval of forecast direct assigned capital expenditures for both its system and connection projects of \$117.2 million in 2022 and \$157.4 million in 2023.<sup>610</sup> The table below provides a breakdown of these forecast capital expenditures.

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<sup>607</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 15 and 18, paragraphs 37, 48-49.

<sup>608</sup> Exhibit 26509-X0294, CCA-AUC-2021SEP24-001 Attachment 1 (Revised MFR schedules).

<sup>609</sup> Also referred to as "system transmission projects."

<sup>610</sup> Exhibit 26509-X0044.01, Appendix 19: Direct Assign Capital update, PDF pages 30-31.

**Table 26. Commission summary of AltaLink’s direct assigned capital expenditures by project**

Direct assigned capital project	2022 Forecast	2023 Forecast
	(\$ million)	
Central East Transfer-Out	5.4	53.1
Nilrem to Vermilion	59.2	40.6
Provost to Edgerton (North and South)	21.4	31.0
Chapel Rock to Pincher Creek	1.7	1.7
All other direct assigned capital projects*	29.5	31.0
<b>Total</b>	<b>117.2</b>	<b>157.4</b>

Source: Exhibit 26509-X0044.01, Appendix 19, PDF pages 30-31.

\*The Commission has calculated this row as the remainder of the total, subtracting the four identified system projects.

588. For the reasons that follow, the Commission denies AltaLink’s forecast capital expenditures in the test period associated with the following four system projects: Central East Transfer-Out, Nilrem to Vermilion, Provost to Edgerton, and Chapel Rock to Pincher Creek. The Commission finds that the forecast costs for “other direct assigned capital projects” are reasonable, and approves them as filed.

589. The Commission identified the timing of the forecast 2022-2023 capital expenditures of system transmission projects as a primary issue in this proceeding.<sup>611</sup>

590. On October 27, 2021, the AESO held a public webinar providing an update on its system transmission projects (October 2021 update), including a status update for direct assigned capital projects that relate to AltaLink’s 2022-2023 test period. The Commission takes notice of the AESO’s presentation materials in its assessment of the projects in the sections below.

### Central East Transfer-Out Project

591. On August 10, 2021, the Commission issued Decision 25469-D01-2021<sup>612</sup> approving the AESO’s NID application and facility applications for ATCO Electric and AltaLink to construct and operate the Central East Transfer-Out (CETO) Project. In the decision, the AESO committed to conducting a future reaffirmation study before construction can begin on the CETO project.<sup>613</sup> The study will confirm whether certain congestion parameters are met before AltaLink’s construction of its portion of the CETO project is triggered.

592. Because of this, AltaLink revised its forecast for the CETO project in its application update to \$5.4 million in 2022 and \$53.1 million in 2023.<sup>614</sup> In its request, AltaLink stated that although permits and licences were granted for the CETO project, it is waiting for the outcome of the AESO’s reaffirmation study to confirm the 2024 in-service date to be completed by the AESO in Q1 2022.<sup>615</sup> It is currently unknown whether the congestion parameters will be met. AltaLink’s application update reflected its belief that the forecast in-service date of the CETO project would likely be in late 2024.<sup>616</sup> However, the October 2021 update stated that the AESO’s

<sup>611</sup> Exhibit 26509-X0212, AUC letter – Issues list, paragraph 3, point 8.

<sup>612</sup> Decision 25469-D01-2021: Alberta Electric System Operator, Needs Identification Document Application, AltaLink Management Ltd. Facility Applications, ATCO Electric Ltd. Facility Applications, Central East Transfer-out Transmission Development Project, August 10, 2021.

<sup>613</sup> Decision 25469-D01-2021, paragraph 41.

<sup>614</sup> Exhibit 26509-X0044.01, Appendix 19, PDF pages 30-31

<sup>615</sup> Decision 25469-D01-2021, paragraph 41.

<sup>616</sup> Exhibit 26509-X00223, AML-AUC-2021AUG20-018(c)-(d), PDF pages 44-45.

preliminary analysis indicates additional generation can be accommodated prior to triggering construction of the CETO project.

593. Any delays to the AESO's declared late 2024 in-service date, or the date on which the AESO triggers construction, will delay AltaLink's completion of detailed engineering, procurement of materials and the start of construction.<sup>617</sup>

594. The Commission denies AltaLink's forecast capital expenditures for the CETO project in this test period because of the uncertainty surrounding the timing of the project, including potential delays with respect to the in-service date.

595. Accordingly, the Commission directs AltaLink to remove its forecast capital expenditures of \$5.4 million in 2022 and \$53.1 million in 2023 for the CETO Project in its compliance filing.

### **Nilrem to Vermilion Project**

596. In its application update, AltaLink revised its forecast capital expenditures from \$72.4 million to \$59.2 million in 2022 and from \$4.2 million to \$40.6 million in 2023 for the Nilrem to Vermilion Project.<sup>618</sup>

597. In Proceeding 26145, AltaLink and ATCO Electric filed a joint facilities application to construct and operate their respective segments of the Nilrem to Vermilion Project. In Decision 26145-D01-2021,<sup>619</sup> the Commission did not approve the permits and licences for each of AltaLink and ATCO Electric's respective transmission facilities. In rebuttal evidence, AltaLink stated that its application update forecast would not be met, and committed to further reducing capital expenditures in its compliance filing. Specifically, AltaLink committed to removing \$58.4 million in 2022 and \$40.1 million in 2023, subject to any future AESO direction.<sup>620</sup>

598. The Commission denies AltaLink's forecast capital expenditures for the Nilrem to Vermilion Project because of the uncertainty and potential delays with respect to the timing of the project. In particular, given that AltaLink will need to refile its facility application in the future, it will not meet its 2023 in-service date for this project. Further, in its October 2021 update, the AESO indicated that it would be delaying this project for an additional two years.<sup>621</sup> The Commission finds that there is no reasonable prospect that the Nilrem to Vermilion Project will proceed during this test period. The related test period expenditures are therefore denied.

599. Accordingly, the Commission directs AltaLink to remove its forecast capital expenditures of \$59.2 million in 2022 and \$40.6 million in 2023 for the Nilrem to Vermilion Project in its compliance filing.

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<sup>617</sup> Exhibit 26509-X00223, AML-AUC-2021AUG20-018(c)-(d), PDF pages 44-45.

<sup>618</sup> AltaLink originally forecast \$72.4 million in 2022 and \$4.2 million in 2023 in its application in Exhibit 26509-X0044, Appendix 19, PDF pages 30-31. However, this was later revised as per Exhibit 26509-X0044.01, Appendix 19, PDF pages 30-31.

<sup>619</sup> Decision 26145-D01-2021: AltaLink Management Ltd. and ATCO Electric Ltd., Nilrem to Vermilion Transmission Development Project, Proceeding 26145, September 23, 2021.

<sup>620</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 223, paragraph 1056.

<sup>621</sup> <https://www.aeso.ca/assets/Uploads/grid-related-initiatives/System-Projects-Update-stakeholder-session-Oct-2021-FINAL.pdf>, PDF pages 10-12.

600. The Commission notes that AltaLink committed to decreasing capital expenditures by removing the \$112.2 million forecast capital additions for the Nilrem to Vermilion Project in 2023.<sup>622</sup> However, it was not possible for the Commission to analyze the effect of the proposed removal on AltaLink's revenue requirement within its MFR schedules. AltaLink's MFR schedules were not linked and integrated, as required under Bulletin 2006-25, and therefore the proposed change in the capital addition was not reflected throughout all schedules. The Commission requires AltaLink's MFR schedules to be linked and integrated in its future GTAs.

### **Provost to Edgerton Project**

601. AltaLink requested approval of forecast capital expenditures of \$21.4 million for 2022 and \$31.0 million for 2023 for the Provost to Edgerton Project.<sup>623</sup> AltaLink received a permit and licence for the Provost to Edgerton Project on August 27, 2021, with an in-service date of December 31, 2022. AltaLink stated that although the AESO has not changed the in-service date for this project, AltaLink expects it to be similarly delayed because of its relation to the Nilrem to Vermilion Project. Specifically, AltaLink anticipates that the in-service date for the Provost to Edgerton Project will be delayed by the same amount of time as the Nilrem to Vermilion Project. As such, AltaLink proposed to reduce its forecast capital expenditures for the project in this test period by \$20.6 million in 2022 and \$28.1 million in 2023 in its compliance filing.<sup>624</sup>

602. The Commission denies AltaLink's forecast capital expenditures due to the uncertainty and potential delays with respect to the timing of the Provost to Edgerton Project.

603. While the AESO holds an NID approval for the Provost to Edgerton Project, and AltaLink holds permits and licences to construct and operate the Provost to Edgerton Project, the Commission accepts that there are likely to be delays in the project's in-service date because of its relation to the Nilrem to Vermilion Project. This is further supported by the AESO's October 2021 update where it confirmed that the Provost to Edgerton and Nilrem to Vermilion projects were partially being staged together, and that the Provost to Edgerton Project would also be delayed by two to three years. As a result, the Commission finds that there is no reasonable prospect that the Provost to Edgerton Project will proceed during this test period. The related test period expenditures are therefore denied.

604. Accordingly, the Commission directs AltaLink to remove its forecast capital expenditures of \$21.4 million for 2022 and \$31.0 million for 2023 for the Provost to Edgerton Project in its compliance filing.

### **Chapel Rock to Pincher Creek Project**

605. AltaLink requested approval of forecast capital expenditures of \$1.7 million in each of 2022 and 2023 for the Chapel Rock to Pincher Creek Project.<sup>625</sup>

606. Although no issues were raised in this proceeding with respect to this project, the Commission notes that based on the AESO's October 2021 update, there will be a delay of at

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<sup>622</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 223, paragraph 1056.

<sup>623</sup> Exhibit 26509-X0044.01, Appendix 19, PDF pages 30-31.

<sup>624</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 223-224, paragraph 1058.

<sup>625</sup> Exhibit 26509-X0044.01, Appendix 19, PDF pages 30-31.

least one year in the Chapel Rock to Pincher Creek Project.<sup>626</sup> In light of the uncertainty surrounding the timing of this project, the Commission finds that AltaLink has not provided sufficient justification for why \$1.7 million per year is required in each of the 2022 and 2023 test years, and accordingly denies these amounts.

607. The Commission directs AltaLink to remove its forecast capital expenditures of \$1.7 million in each of 2022 and 2023 for the Chapel Rock to Pincher Creek Project in its compliance filing.

## 11.2 Flexible EPCm model

608. AltaLink has historically relied on EPCm services provided by SNC-Lavalin ATP Inc. and Burns & McDonnell (B&M) to deliver its direct assigned capital projects. AltaLink has referred to this approach as an “outsourced EPCm model.” Under its outsourced EPCm model, AltaLink’s EPCm service providers hire subcontractors to conduct necessary work and provide necessary equipment and materials. Since AltaLink is the owner of its transmission assets, it reviews the work of the EPCm and scrutinizes all invoices.<sup>627</sup> In general, AltaLink’s outsourced EPCm model is applied to direct assigned capital projects that are larger than \$20 million in project cost, 240 kV and higher in voltage, and of greater complexity.

609. AltaLink is transitioning its practices towards a “flexible delivery model.”<sup>628</sup> The flexible delivery model was first introduced in AltaLink’s 2017-2018 GTA<sup>629</sup> and was also described in its 2019-2021 GTA,<sup>630</sup> which were both settled by way of a negotiated settlement agreement. Under the flexible delivery model, AltaLink’s internal staff self-manage direct assigned capital projects that are less than \$20 million in total project cost, are 138 kV or lower in voltage, and are of lower complexity.<sup>631</sup>

610. In its application, AltaLink identified its intent to have some system projects executed under what it refers to as a “flexible EPCm model.” Under AltaLink’s flexible EPCm model, the EPCm service provider would be responsible for engineering and procurement, and AltaLink would be responsible for construction and field service procurement, construction management and field oversight.<sup>632</sup> AltaLink currently expects to migrate to the flexible EPCm model on a selection of appropriate system projects to achieve cost savings. It identified the Nilrem to Vermilion Project as a prime example.<sup>633</sup>

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<sup>626</sup> <https://www.aeso.ca/assets/Uploads/grid-related-initiatives/System-Projects-Update-stakeholder-session-Oct-2021-FINAL.pdf>, PDF pages 16-21.

<sup>627</sup> Proceeding 24681, Exhibit 24681-X0006.01, AML 2016-2018 DACDA application redacted, PDF page 24, paragraph 100.

<sup>628</sup> Also referred to as “self-managed model.”

<sup>629</sup> Proceeding 21341, Exhibit 21341-X0002, AML 2017-2018 GTA, PDF page 210, paragraphs 548-551, and Exhibit 21341-X0085, AML-AUC-2016OCT05-057(b)-(c), PDF pages 12-13.

<sup>630</sup> Proceeding 23848, Exhibit 23848-X0002.02, AML 2019-2021 GTA, PDF pages 242-243, paragraphs 625-628 and Exhibit 23848-X0062, AML-AUC-2018OCT31-133(a)-(b), PDF pages 297-298.

<sup>631</sup> Proceeding 24681, Exhibit 24681-X0006.01, AML 2016-2018 DACDA application redacted, PDF page 24, paragraph 100, and Exhibit 26509-X0223, AML-AUC-2021AUG20-019(a), PDF page 48.

<sup>632</sup> Exhibit 26509-X0125, AML-UCA-2021JUN25-007(a), PDF page 22.

<sup>633</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-019(a), PDF pages 48-51.

611. The Commission acknowledges AltaLink's intent to move to a flexible EPCm model; however, this acknowledgment does not constitute an approval of AltaLink's proposed flexible EPCm model.

612. The Commission expects AltaLink to minimize the costs required to construct facilities necessary to provide safe and reliable electric transmission service. This applies irrespective of whether AltaLink's internal or external resources are used to complete EPCm work. The prudence of all actual costs spent executing direct assigned capital projects are subject to the Commission's review in a future DACDA proceeding.

613. AltaLink stated that its Relationship Agreement with B&M expires on April 30, 2022, and it may be exploring market opportunities to find a new or replacement EPCm service provider, through its regular procurement process. AltaLink also indicated that any project that was commenced prior to the termination of the agreement will continue to be executed under the existing terms.<sup>634</sup> AltaLink has not sought approval for a new EPCm service agreement in the current GTA. Any future actual costs arising from work performed under a new EPCm service agreement will remain subject to a prudence review.

## 12 Issue 8: Should AltaLink's requests related to depreciation be approved?

614. AltaLink applied for Commission approval to change service life and/or Iowa curve (life-curve) depreciation parameters for 11 of its 14 depreciation study accounts.

615. To support these proposed changes, AltaLink submitted a December 31, 2019, depreciation study<sup>635</sup> prepared by Larry Kennedy of Concentric Advisors, ULC. Patrick Bowman of InterGroup Consultants Ltd. and Patricia Lee of BCRI Inc., on behalf of the UCA, filed evidence in response to Concentric's proposals. The UCA recommended service life increases for five of the 14 accounts examined by Concentric.

616. AltaLink also applied for approval:

- (i) to establish a new 20-year asset class for leasehold improvements to align with its expiration of current leases in 2039;
- (ii) to change its amortization rate for customer contributions;
- (iii) to accelerate the amortization of its SAP software from 10 per cent to 11.1 per cent to align with AltaLink's expected transition out of SAP by the year 2027; and
- (iv) of a tariff refund consisting of surplus accumulated depreciation (life).

617. D. Madsen, on behalf of the CCA, opposed AltaLink's tariff refund of surplus accumulated depreciation, whereas the UCA supported the refund, with modifications. The CCA also opposed the increase in the SAP amortization rate, consistent with its argument that AltaLink should not replace its SAP system as forecast.

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<sup>634</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 209-210, paragraphs 654-656.

<sup>635</sup> Exhibit 26509-X0013, Appendix 08 Depreciation Study.

618. The CCA also took issue with two aspects of AltaLink’s reporting of net salvage costs under its now approved capitalize and expense net salvage method.

619. Each of AltaLink’s requests, including the two net salvage related issues raised by the CCA are discussed in the remainder of this section.

### 12.1 Proposed changes to depreciation study accounts

620. Depreciation expense is the mechanism by which a utility, such as AltaLink, recovers the return of its investment in assets that provide utility service. The speed at which the investment is returned to the utility is dependent on a depreciation rate, where for example, a higher depreciation rate results in a larger annual depreciation expense.

621. A depreciation rate is informed by an expected average service life; that is, the period of time that each of a utility’s asset categories are anticipated to provide utility service. An average service life is estimated by compiling the utility’s actual asset mortality data and comparing this information graphically with a standardized curve, such as an Iowa curve. The specific Iowa curve chosen as best representing the utility’s actual asset mortality data can be associated with an overall depreciation rate and theoretical calculation of the quantum of accumulated depreciation that should have been collected by the utility. The proposed depreciation parameters of service life and Iowa curve (life-curve), among other things, are examined during the course of testing a depreciation study such as the one prepared by Concentric and submitted by AltaLink in the current application.

622. The following table summarizes AltaLink’s recent actual and forecast depreciation expense for the years 2019-2023:

**Table 27. Summary of AltaLink’s actual and forecast total net depreciation expense 2019-2023**

	2019 Actual	2020 Actual	2021 MU	2022 Forecast	2023 Forecast
	(\$ million)				
Transmission net depreciation expense	270.5	267.1	269.4	273.9	281.2
DACDA net depreciation expense	21.5	22.6	22.5	23.0	25.0
Total net depreciation expense	292.0	289.7	291.8	296.9	306.2
Increase (decrease) over previous years actual or forecast: net depreciation expense		(2.3)	2.1	5.1	9.6

Source: Exhibit 26509-X0003.01, MFR schedules, Schedule 3-1.

623. AltaLink proposed to change the life-curve parameters connected with 11 of the 14 plant accounts set out in its depreciation study.<sup>636</sup> The effect of these life-curve changes would be to reduce AltaLink’s depreciation expense when compared to maintaining the current life-curve parameters used to compute AltaLink’s depreciation rate. These decreases in depreciation expense are shown in the following table:

<sup>636</sup> Exhibit 26509-X0013, Appendix 08 Depreciation Study.

**Table 28. Impact of proposed changes to services lives applicable to AltaLink’s forecast property, plant and equipment**

	2021 Approved	2022 Forecast	2023 Forecast
	(\$ million)		
Approved / Forecast depreciation expense on property, plant and equipment	267.3	268.6	276.8
Increase (decrease) over 2021 approved comprised of:		1.3	9.5
Increases in higher gross plant		5.3	13.2
Generally longer service lives resulting in lower depreciation rates		(4.0)	(3.7)

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 24 and 179, paragraphs 29 and 560.

### 12.1.1 Depreciation study accounts – no proposed life-curve parameter changes

624. The Commission finds that the currently approved life-curve parameters for the following three accounts have been maintained and continue to be reasonable.

- USA 352.00 – Transmission – Structures and Improvements (50-R2.5);
- USA 353.01 – Transmission – Station Equipment (HVDC) (43-R2.5); and
- USA 354.00 – Transmission – Towers and Fixtures (57-R2.5).

625. AltaLink did not propose any changes to the parameters for these accounts, and no party argued that they were no longer reasonable.

### 12.1.2 Depreciation study accounts – proposed life-curve parameter changes

626. The Commission approves the proposed life-curve parameters for the following four depreciation study accounts:

- USA 353.00 – Transmission – Station Equipment (47-R2.5);
- USA 353.10 – Transmission – System Communication and Control (25-L1.5);
- USA 390.00 – General Plant – Structures and Improvements (50-R3); and
- USA 392.00 – General Plant – Transportation Equipment, Fleet Vehicles (8-L2).

627. In reaching this finding, the Commission examined the evidence provided by AltaLink in its application and depreciation study and concluded the proposed changes are reasonable. No party opposed these proposed life-curve changes.

628. The Commission also accepts AltaLink’s proposals for the following two depreciation study accounts:

- USA 355.00 – Transmission – Poles and Fixtures
- USA 396.00 – General – Power Operated Equipment

629. Further discussion on the approval of these two depreciation study accounts is provided in the two sections that follow:

#### **12.1.2.1 USA 355.00 – Transmission – Poles and Fixtures**

630. The Commission approves AltaLink’s proposed 52-R1 life curve for USA 355.00 – Transmission – Poles and Fixtures. In addition to discussions with AltaLink’s personnel, the retirements, additions and other plant transactions for USA 355.00 were considered by Concentric for this account using a retirement rate analysis. This resulted in a plotted graph comparing actual observed data points with a smooth curve of the proposed life-curve of 52-R1. This exercise showed an “excellent visual fit to the observed data points,”<sup>637</sup> and provided the basis for Concentric’s recommendations for a 52-R1 life-curve.

631. The UCA provided an analysis concluding that the data set for USA 355.00 remains somewhat limited. The UCA indicated, however, that the data has been improving over time and trending towards the previously anticipated 53-year service life expectations for this account, and therefore results in the current plotted graphs moving closer towards the approved life-curve of 53-R2.5. As such, the UCA concluded that there was no reason “to abandon the logic now”<sup>638</sup> and recommended that the currently approved 53-R2.5 be maintained.

632. The Commission rejects the rationale provided by the UCA for maintaining the currently approved 53-R2.5 for this account given that the graphical representation of actual observed data to the proposed 52-R1 life-curve provides a better visual fit.<sup>639</sup> Accordingly, the Commission accepts AltaLink’s proposed change to the life-curve for USA 355.00 from the currently approved 53-R2.5 to a 52-R1.

#### **12.1.2.2 USA 396.00 – General – Power Operated Equipment**

633. In addition to discussions with AltaLink’s personnel, Concentric considered the retirements, additions and other plant transactions for USA 396.00 – General Plant – Power Operated Equipment using a retirement rate analysis to inform its recommendations.

634. AltaLink stated that the 0.714 residual measure associated with its proposed 20-L1.5 life-curve indicates a better mathematical fit of the plotted actual data compared to the residual measure associated with its approved 25-L2 life-curve. In comparing the plotted graphs provided in the current proceeding,<sup>640</sup> the Commission agrees that the proposed 20-L1.5 life-curve results in a better visual fit because the actual plotted data points are moving closer to the smooth survivor curve associated with the shorter service life.<sup>641</sup>

635. For these reasons, the Commission approves the 20-L1.5 life-curve proposed by AltaLink for USA 396.00.

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<sup>637</sup> Exhibit 26509-X0013, Appendix 08 Depreciation Study, PDF pages 16 and 48-50.

<sup>638</sup> Exhibit 26509-X0275, UCA evidence of P. Bowman and P. Lee, PDF page 19.

<sup>639</sup> Exhibit 26509-X0139, AML-UCA-2021JUN25-018 attachment, PDF page 21.

<sup>640</sup> Exhibit 26509-X0139, AML-UCA-2021JUN25-018 attachment, PDF page 38.

<sup>641</sup> Exhibit 26509-X0013, Appendix 08 Depreciation Study, PDF pages 18-19 and 67.

**12.1.2.3 USA 354.01 – Transmission – Towers and Fixtures – ISO Rule 502.2 Compliant**  
**USA 350.10 – Transmission – Land Rights**  
**USA 355.01 – Transmission – Poles and Fixtures (Steel Poles)**  
**USA 356.00 – Transmission – Overhead Conductors and Devices**

636. The Commission denies the life-curve depreciation parameters proposed by AltaLink for the following four accounts:

- USA 354.01 – Transmission – Towers and Fixtures – ISO Rule 502.2 Compliant
- USA 350.10 – Transmission – Land Rights
- USA 355.01 – Transmission – Poles and Fixtures (Steel Poles)
- USA 356.00 – Transmission – Overhead Conductors and Devices

637. Since its inception in 2012, USA 354.01 – Transmission Plant – Towers and Fixtures – ISO Rule 502.2 Compliant, with a plant in-service balance of approximately \$1.7 billion has recorded no asset retirements. Nonetheless, Concentric recommended a change in the life-curve for this account from the currently approved 67-R2.5 to a 70-R3 due to discussions held with AltaLink’s operational and management staff, who indicated that a slight extension to the life of this account is warranted at this time.<sup>642</sup>

638. Concentric indicated that the recommendations for USA 354.01 were also applicable to USA 350.10 – Transmission – Land Rights; USA 355.01 – Transmission – Poles and Fixtures (Steel poles); and, USA 356.00 – Transmission – Overhead Conductors and Devices. In all cases, Concentric generally linked the 70-year life for these three accounts with its recommendations for USA 354.01 as either a similar expectation for service life, or that a 70-year service life is a reasonable expectation until more retirement data is recorded in the respective accounts.<sup>643</sup>

639. The UCA recommended service lives for USA 350.10, USA 354.01 and USA 355.01 ranging from 71-R3 to 73-R4. The UCA used a retirement rate analysis in the case of USA 350.10. For the remaining accounts, the UCA provided a lengthy summary<sup>644</sup> of the historical development of the currently approved life-curve for USA 354.01 and 355.01, which the Commission did not find helpful in evaluating AltaLink’s proposals. The UCA did not opine on AltaLink’s life-curve proposals for USA 356.00.

640. The Commission denies AltaLink’s proposed 70-R3 life-curve for USA 354.01. Without actuarial data to support the increase requested, the Commission has decided it is reasonable that the life-curve for this account remain as currently approved. The life-curve parameters proposed for USA 350.10, USA 355.01 and USA 356.00 are similarly denied given that the recommendations were tied to the outcome of USA 354.01.

641. In its compliance filing to this decision, AltaLink is directed to incorporate its currently approved life-curve depreciation parameters for USA 350.10 (56-R4), USA 354.01 (67-R2.5),

<sup>642</sup> Exhibit 26509-X0013, Appendix 08 Depreciation Study, PDF page 15.

<sup>643</sup> Exhibit 26509-X0013, Appendix 08 Depreciation Study, PDF pages 12 and 16-17.

<sup>644</sup> Exhibit 26509-X0275, UCA evidence of P. Bowman and P. Lee, PDF pages 13-16.

USA 355.01 (67-R2) and USA 356.00 (65-R4), and to reflect the impact of doing so in its depreciation rate, depreciation expense and revenue requirement calculations.

#### 12.1.2.4 USA 358.00 – Transmission – Underground Conductors and Devices

642. The Commission denies the life-curve depreciation parameter proposed by AltaLink for the following account: USA 358.00 – Transmission – Underground Conductors and Devices.

643. Concentric recommended an increase to the currently approved life-curve of 50-R5 for USA 358.00 to a 55-R5 life-curve, notwithstanding there has been “virtually no retirement activity” experienced in this account.<sup>645</sup> The increase was justified by Concentric based on input from AltaLink’s operations and management staff, who indicated that a life extension may be warranted.

644. The Commission denies AltaLink’s request to extend the service life for this account by five years. The request was insufficiently supported, particularly in view of the lack of retirement history. Moreover, at the time of AltaLink’s previous depreciation study, there were significant capital additions of \$39.2 million in 2017 in this account; however, AltaLink did not request an extension to the service life for USA 358.00. These 2017 additions still account for half of the plant in service and it remains to be seen whether an extension to the service life will be warranted based on Alta Link’s observed asset retirements in the future.

645. In its compliance filing to this decision, AltaLink is directed to incorporate its currently approved life-curve depreciation parameters for USA 358.00 (50-R5).

646. The depreciation parameters proposed and approved in this section for AltaLink’s depreciation study accounts are summarized in the following table:

**Table 29. Summary of AltaLink’s proposed and approved depreciation parameters**

		Currently approved (1)	Proposed AltaLink (2)	Proposed UCA (3)	Approved
<b>TRANSMISSION PLANT</b>					
350.10	Land Rights	56-R4	70-R3	72-R4	56-R4
352.00	Structures and Improvements	50-R2.5	50-R2.5		50-R2.5
353.00	Station Equipment	47-R2	47-R2.5		47-R2.5
353.01	Station Equipment (HVDC)	43-R2.5	43-R2.5		43-R2.5
353.10	System Communication and Control	24-L2	25-L1.5	27-L1.5	25-L1.5
354.00	Towers and Fixtures	57-R2.5	57-R2.5		57-R2.5
354.01	Towers and Fixtures (ISO Rule 502.2 Compliant)	67-R2.5	70-R3	71-R3 to 73-R4	67-R2.5
355.00	Poles and Fixtures	53-R2.5	52-R1	53-R2.5	52-R1
355.01	Poles and Fixtures (Steel Poles)	67-R2	70-R3	71-R3 to 73-R4	67-R2
356.00	Overhead Conductors and Devices	65-R4	70-R3		65-R4
358.00	Underground Conductors and Devices	50-R5	55-R5		50-R5
<b>GENERAL PLANT</b>					
390.00	Structures and Improvements	45-R2	50-R3		50-R3

<sup>645</sup> Exhibit 26509-X0013, Appendix 08 Depreciation Study, PDF page 17.

		Currently approved (1)	Proposed AltaLink (2)	Proposed UCA (3)	Approved
391.00	Office Furniture and Equipment	15-SQ	15-SQ		15-SQ
391.10	Computer Hardware and Voice and Data Network Equipment	5-SQ	5-SQ		5-SQ
392.00	Transportation Equipment, Fleet Vehicles	8-L2.5	8-L2		8-L2
394.00	Tools, Shop, Garage, Stores, and Laboratory Equipment	10-SQ	10-SQ		10-SQ
396.00	Power Operated Equipment	25-L2	20-L1.5		20-L1.5

(1) Proceeding 23848, Exhibit 23848-X0003.01, MFR schedules, Schedule 6-4, and Decision 23848-D01-2020, PDF page 160, agreeing to a two-year service life extension to USA 355.01 from 65-R2 to 67-R2).

(2) Exhibit 26509-X0013, AML 2022-2023 GTA – Appendix 08 (Depreciation Study), PDF page 25, and Exhibit 26509-X0002.01, MFR schedules, Schedule 6-3.

(3) Exhibit 26509-X0275, Depreciation Evidence of P. Bowman and P. Lee.

### 12.1.3 Proposed changes to non-depreciation study accounts

647. With respect to AltaLink’s non-depreciation study accounts, the Commission accepts AltaLink’s proposal to create a new 20-year asset class for leasehold improvements and to amortize the costs of the improvements over a period of 20 years, which would align with the expiration of the current leases in 2039.<sup>646</sup>

648. For the three general plant accounts<sup>647</sup> currently depreciated under a square curve methodology consistent with amortization accounting, these accounts are also not considered depreciation study accounts, and no changes to service lives were proposed by AltaLink.<sup>648</sup>

649. The Commission also approves the method by which AltaLink proposes to update its amortization rate for customer contributions as being determined by the weighted average amortization rate of its related capital assets.<sup>649</sup> However, the Commission directs AltaLink to finalize the contribution amortization rate in its compliance filing to this decision by incorporating the Commission’s findings on AltaLink’s life-curve proposals for its depreciation study accounts.

### 12.1.4 Accelerated amortization of SAP computer system costs

650. The Commission denies AltaLink’s proposal to increase its annual amortization rate for its SAP computer system costs to 11.1 per cent.

651. In its application, AltaLink explained that due to a business need to transition to a cloud-based ERP system and replace SAP with Oracle as the least cost alternative to maintain critical services to customers, it planned to transition out of SAP by the year 2027. This timing was consistent with AltaLink’s expectation that vendor support would also cease for the current on-site version of SAP used by AltaLink.

<sup>646</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 186, paragraph 575.

<sup>647</sup> USA 391.00 – Office Furniture and Equipment (15-SQ); USA 391.1 – Computer Hardware and Voice and Data Network Equipment (5-SQ); and USA 394.00 – Tools, Shop, Garage, Stores, and Laboratory Equipment (10-SQ).

<sup>648</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-009(b), PDF pages 22-23.

<sup>649</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 188-189, paragraph 582.

652. AltaLink’s SAP computer system costs are currently approved to be amortized over a period of 10 years, or the equivalent of an annual rate of 10 per cent. AltaLink proposed to increase the annual amortization rate to 11.1 per cent for the years 2022-2027 in order to fully amortize the remaining SAP costs by the time Oracle was implemented.<sup>650</sup>

653. The CCA recommended<sup>651</sup> that AltaLink’s request for an accelerated amortization rate be denied because it had not supported the reasonableness of converting to a new ERP system such as Oracle. The CCA submitted that any modification in the amortization rate was driven by a replacement decision and not because the useful service lives of the assets have changed.

654. In the Commission’s view, the approval of the SAP accelerated amortization rate is dependent on the Commission’s decision on AltaLink’s proposal to replace SAP with Oracle. In Section 10.3.9 of this decision, the Commission denied the forecast costs associated with AltaLink’s ERP Replacement Program in this test period. For this reason, the Commission finds it is not necessary for AltaLink to alter its SAP amortization rate from 10 per cent at this time. The Commission directs AltaLink to maintain its currently approved amortization rate of 10 per cent for its SAP assets in its compliance filing, and to reflect the impact of doing so in its depreciation expense and revenue requirement calculations.

## 12.2 Proposed 2022-2023 tariff refund

655. To support its proposed tariff refund of surplus accumulated depreciation (life), AltaLink relied on “a fully complete 2019 Depreciation study completed by Concentric.”<sup>652</sup> It further contended that the results and principles of Decision 26248-D02-2021,<sup>653</sup> where the Commission authorized a refund of accumulated depreciation in the amount of \$80 million, continue to apply in the current proceeding. AltaLink submitted that its proposed refund reflects an approach that aligns positively with the principles of cost causation, gradualism and moderation, and intergenerational equity – all factors that “requires the refund to proceed”<sup>654</sup> and that the tariff refund would ultimately “be in the public interest.”<sup>655</sup>

656. AltaLink also indicated that the economic downturn, the COVID-19 pandemic, and low oil prices all persist, as support for its proposal. AltaLink submitted a letter of support for its proposal from the Alberta Chambers of Commerce.<sup>656</sup> It also cited strong support from the UCA, individual customers, and customer groups for its similar proposal in Proceeding 26248.<sup>657</sup>

657. AltaLink’s 2019 Depreciation study calculated a theoretical accumulated depreciation surplus premised, in part, on the Commission’s approval of the service lives proposed in the study. AltaLink proposed to refund any net surplus amount in excess of a five per cent balance

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<sup>650</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 185-186, paragraphs 572-574.

<sup>651</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 177, paragraphs 495-497.

<sup>652</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 21, paragraph 13.

<sup>653</sup> Decision 26248-D02-2021: AltaLink Management Ltd., 2021-2023 Tariff Refund, Proceeding 26248, April 15, 2021.

<sup>654</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 22, paragraph 19.

<sup>655</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 184, paragraph 565.

<sup>656</sup> Exhibit 26509-X0315, Attachment 6 (ACC support letter for AltaLink customer rebates 06.10.21).

<sup>657</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 184, paragraph 568.

(to be maintained by AltaLink in its actual accumulated depreciation account)<sup>658</sup> over and above what would be required on a theoretical basis. Any amount in excess of that five per cent balance was proposed by AltaLink to be refunded to ratepayers over the two year test period.

658. P. Bowman and P. Lee, on behalf of the UCA, supported the concept of a refund of surplus accumulated depreciation evenly in the test years. However, they recommended that the surplus refund be recalculated using the service lives ultimately approved by the Commission and further, that the determination of the five per cent excess (of accumulated depreciation) using AltaLink's method, was understating the amount that should be refunded.<sup>659</sup>

659. The CCA did not agree with AltaLink that a further refund of \$60 million per year in each of 2022 and 2023 was needed.<sup>660</sup>

660. For the reasons that follow, the Commission denies AltaLink's request to refund \$120 million of accumulated depreciation (life) surplus in the years 2022-2023. Having made this determination, the Commission makes no finding on the UCA's recommendation that the Commission approve the tariff refund of surplus accumulated depreciation (life) amount as informed by the life-curve parameters ultimately approved in this proceeding.

661. AltaLink's submissions that economic circumstances in Alberta support the refund were not persuasive. In this respect, the Commission was persuaded by the comments made in the evidence of the CCA. While the CCA did not dispute that the COVID-19 pandemic persists, it contended that the economic downturn and low oil prices are currently less of an issue, noting that the Government of Alberta has indicated that the economy is improving.<sup>661</sup>

662. The Commission agrees with the CCA that it is not clear that the economic circumstances existing in the first half of 2021 will continue in 2022 and 2023, when AltaLink's proposed refund would be put into effect. AltaLink did not address this issue persuasively in its rebuttal evidence, nor in its argument and reply argument.

663. The Commission also finds that AltaLink's position on its proposal to refund accumulated depreciation is inconsistent with its proposal to escalate the salaries of its employees, including its proposal to escalate its executive base pay compensation by more than 10 per cent over this test period. This point was also noted by the CCA: "for salaries, the economy is improving, so AltaLink's employees require raises. However, for the refund, it is still doom and gloom, so current ratepayers should be subsidized by future ratepayers."<sup>662</sup>

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<sup>658</sup> Exhibit 26509-X0013, Appendix 08 Depreciation Study, PDF page 26 and Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 181: For AltaLink's transmission assets at December 31, 2019: Actual accumulated depreciation \$2,244.4 million less theoretical accumulated depreciation \$1,947.2 = theoretical accumulated depreciation surplus total \$297.2 million. Of the \$297.2 million surplus, AltaLink will refund the \$80 million approved in Decision 26248-D02-2021 and proposes to refund \$120 million in 2022-2023. If approved, this would leave approximately \$97.2 million (or five per cent) of its theoretical accumulated depreciation as the remaining surplus amount included in its actual accumulated depreciation balance.

<sup>659</sup> Exhibit 26509-X0275, UCA evidence of P. Bowman and P. Lee, PDF pages 6-8.

<sup>660</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 25, paragraph 67.

<sup>661</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 31, paragraph 78.

<sup>662</sup> Transcript, Volume 2, page 368, lines 17-22.

664. The proposed tariff refund is also inconsistent with AltaLink’s proposals for more FTEs, higher debt costs, and higher escalation rates. All of these requests indicate directionally that general economic conditions and Alberta’s business environment are improving.

665. Further, the Commission disagrees with AltaLink’s characterization of Decision 26248-D02-2021, and that the reasoning in that decision applies to the current proceeding. AltaLink asserted that in Decision 26248-D02-2021, the Commission “declined to approve the full \$200M, not because the full refund was unjustified in principle or unwarranted by the foreseeable economic pressures on rate payers, but rather because it found that it ‘could not fully test’ the new depreciation study upon which the \$200M proposal was based.”<sup>663</sup>

666. AltaLink’s submission ignores the Commission’s findings in Proceeding 26248 and in particular that the Commission placed “considerable weight on the necessity for **immediate, albeit temporary**, rate relief to Alberta ratepayers in 2021. [emphasis added]”<sup>664</sup> The importance for immediate and temporary rate relief led to the Commission’s determination that the circumstances facing ratepayers in the early part of 2021 were exceptional and warranted a refund that could be satisfactorily tested with the facts placed before the Commission.

667. With respect to AltaLink’s view that the refund aligns with the principles of intergenerational equity,<sup>665</sup> and gradualism and moderation, the Commission disagrees. The two-year time frame proposed by AltaLink for the refund of surplus accumulated depreciation is in contrast to more typical depreciation practices. Specifically, on an individual account basis, any difference between the theoretical and actual accumulated depreciation balance is typically refunded to, or collected from, ratepayers over the average remaining life of the asset account through the amortization of reserve differences mechanism. This mechanism is approved for use by virtually all regulated utilities in Alberta.

668. With respect to the effects of AltaLink’s proposed tariff refund of \$60 million in each of 2022 and 2023, the Commission’s observations<sup>666</sup> in Proceeding 26248 are applicable to the current proceeding. While AltaLink’s current proposal decreases the tariff for each of 2022 and 2023, all else being equal, the impact of each year of tariff refund will be offset by debt and equity return costs associated with the accumulated depreciation surplus refunds and the coincident \$120 million increase in AltaLink’s rate base. The effect of the \$120 million increase in AltaLink’s rate base would be immediate over this test period. This affects future ratepayers, and is inconsistent with the principles of intergenerational equity, and gradualism and moderation as cited by AltaLink in support of the proposed tariff refund.

669. The Commission must carefully consider whether it is just and reasonable to approve a tariff refund now that results in higher transmission rates for Albertans in the future. For this reason, tariff refunds should be used only in exceptional circumstances, such as those identified by the Commission in Decision 26248-D02-2021. The Commission is not persuaded that the exceptional economic circumstances in the first half of 2021 will continue in 2022 and 2023, when AltaLink’s proposed refund would be put into effect. Having balanced the benefits of the

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<sup>663</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 184, paragraph 566.

<sup>664</sup> Decision 26248-D02-2021, PDF page 10, paragraph 31.

<sup>665</sup> With respect to the proposed tariff refund, the Commission considers that the principle of intergenerational equity subsumes the principle of cost causation.

<sup>666</sup> Decision 26248-D02-2021, PDF page 10, paragraph 30.

proposed relief against the future costs, the Commission has found that ratepayers would not be served by approval of the refund.

### 12.3 Reporting of actual 2019-2020 and forecast 2021 net salvage costs

670. For the reasons that follow, the Commission has determined that AltaLink's reporting of its actual 2019-2020 and forecast 2021 net salvage costs in the current application is deficient.

671. AltaLink requested recovery, through its net salvage reserve account, of actual 2019, 2020 and forecast 2021 net salvage costs in the amounts of \$32.3 million, \$35.5 million and \$29.3 million, respectively, or a total of \$97.1 million.<sup>667</sup>

672. Evidence filed by D. Madsen, on behalf of the CCA, contended that AltaLink's submissions were not sufficiently detailed to test the reasonableness and prudence of AltaLink's CRU-related net salvage costs.<sup>668</sup>

673. The CCA cited<sup>669</sup> the example of AltaLink's CRU Substation Planned Maintenance Program, which incurred \$31.8 million in net salvage costs from 2019 to 2021. As support for testing the prudence of the net salvage costs for this program, AltaLink stated in response to a CCA IR, that the overall scope of the program is found within several business cases and related appendixes.<sup>670 671</sup> However, the CCA noted that the information within the business cases contained only general explanations of the salvaging activities that AltaLink had proposed under its capital program, given that they were forward-looking business cases, but provided no explanation of what was specifically done on an actual basis. The explanations provided by AltaLink in response to the CCA IR attributed the variances in net salvage costs to changes in CRU program timing and requirements, which was the same explanation provided for most of the CRU assets. AltaLink's IR response also pointed to the application narrative<sup>672</sup> which discussed variances in approved to actual capital expenditures, but did not mention costs or variances attributable to salvage activities.

674. The CCA recommended that AltaLink be directed to remove from its net salvage reserve account all actual net salvage costs related specifically to the CRU projects, and that the Commission assess their reasonableness in a subsequent GTA.<sup>673</sup>

675. The Commission, like the CCA, has been unable to determine the prudence of the net salvage costs AltaLink seeks to recover through its net salvage reserve account. Beyond the information filed in response to the Commission<sup>674</sup> and CCA IRs,<sup>675</sup> which provided the general scope of the intended salvaging processes, AltaLink provided limited information supporting the prudence of the actual costs incurred in relation to the retirement of its capital assets.

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<sup>667</sup> Exhibit 26509-X0003.01, MFR schedules, Schedule 29-8.

<sup>668</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 174-175, paragraph 489.

<sup>669</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 174-176, paragraphs 489-492.

<sup>670</sup> Exhibit 26509-X0156, AML-CCA-2021JUN25-016, PDF pages 52-54.

<sup>671</sup> Exhibit 26509-X0162, AML-CCA-2021JUN25-016 Attachment.

<sup>672</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF pages 225-228, paragraphs 717-732.

<sup>673</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 176, paragraphs 493-494.

<sup>674</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-010, PDF pages 24-25.

<sup>675</sup> Exhibit 26509-X0217, AML-CCA-2021JUN25-016(a), AltaLink's updated IR response to AUC ruling.

676. AltaLink has previously been advised of the Commission’s requirement for detailed net salvage information under its capitalize and expense net salvage method, which was recently approved.

677. In Decision 25870-D01-2020, the Commission accepted AltaLink’s proposal to implement its capitalize and expense net salvage method over a period of approximately seven to eight years. The Commission specified how AltaLink was to implement its capitalize and expense net salvage method and, in particular, directed AltaLink to provide “... in each future GTA or DACDA, ... sufficiently detailed information for the purposes of testing the prudence of costs of removal whether recorded to the net salvage reserve account during the period of transition, capitalized to the cost of a replacement asset or recorded in association with a terminal asset retirement.”<sup>676 677</sup>

678. In Decision 24681-D01-2020,<sup>678</sup> the Commission reiterated how important it was to test the prudence of the actual net salvage costs, and noted AltaLink’s awareness and commitment in this regard:

82. As indicated during the course of Proceeding 23848 as it pertained to AltaLink’s proposed net salvage methodology, AltaLink was aware of and committed to the requirement for testing “the prudence of the actual costs incurred for cost of removal (as being) assessed similar to all other project costs.”<sup>679</sup> AltaLink’s submission that “the prudence of the quantum of actual salvage costs will be subject to review by the Commission in the future in the same way all costs are reviewed for prudence”<sup>680</sup> confirms AltaLink’s position that “these costs (of removal), similar to other costs incurred during the execution of the replacement project, will be subject to prudence reviews by this Commission and automatically so.”<sup>681</sup>

83. AltaLink’s statements were in reference to the net salvage methodology proposed in Proceeding 23848, which has now been approved in Decision 25870-D01-2020. While the Commission acknowledges that the transition to this new methodology is expected to take seven-to eight-years, similar tests of prudence of salvage cost such as those conducted in this DACDA will be necessary in the interim period. The need to test the prudence of salvage costs was acknowledged by the Commission in its direction to AltaLink that “in each future GTA or DACDA, AltaLink will provide sufficiently detailed information for the purposes of testing the prudence of costs of removal whether recorded to the net salvage reserve account during the period of transition, capitalized to the cost of a replacement asset or recorded in association with a terminal asset retirement.”<sup>682</sup>

679. AltaLink’s intentions with respect to providing sufficient evidence for testing the prudence of its net salvage costs appear to be at odds with these directions.

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<sup>676</sup> Decision 25870-D01-2020, PDF page 10, paragraph 36(iv).

<sup>677</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-010, PDF pages 24-25: AltaLink referred to net salvage costs (or costs of removal) as related to either interim retirements; or, discontinued from use salvage costs related to terminal or final asset retirements.

<sup>678</sup> Decision 24681-D01-2020: AltaLink Management Ltd., 2016 to 2018 Deferral Accounts Reconciliation Application, Proceeding 24681, December 11, 2020.

<sup>679</sup> Proceeding 23848, AML 2019-2021 GTA, Exhibit 23848-X0332, AltaLink argument, paragraph 56(j)(ii).

<sup>680</sup> Proceeding 23848, AML 2019-2021 GTA, Exhibit 23848-X0300, AltaLink rebuttal evidence, paragraph 38.

<sup>681</sup> Proceeding 23848, AML 2019-2021 GTA, Exhibit 23848-X0332, AltaLink argument, paragraph 62.

<sup>682</sup> Decision 25870-D01-2020, paragraph 36(iv).

680. AltaLink argued that:

... because salvage costs are forecast and incurred as part of the CRU program, their prudence is the prudence of their underlying CRU program. AltaLink's application includes detailed justifications for each CRU program ... including their associated salvage components and a separate prudence analysis would be redundant. The record shows AltaLink's incurred salvage costs have been fully justified and the CCA's recommendation is therefore baseless and should be disregarded.<sup>683</sup>

681. The Commission disagrees that AltaLink's application contains "detailed justifications" of its actual net salvage costs for its capital programs. As shown in the example provided by the CCA for AltaLink's Substation Planned Maintenance Program, AltaLink made no mention of actual net salvage costs incurred. Accordingly, there is no "redundancy" as claimed.

682. The onus to demonstrate the prudence of its net salvage costs rests with AltaLink. The Commission notes that these costs are significant for the years 2019 to 2021. As noted above, AltaLink has requested the recovery of its total actual 2019, 2020, and forecast 2021 net salvage costs in the amounts of \$32.3 million, \$35.5 million, and \$29.3 million, respectively, or a total of \$97.1 million. Detailed information supporting the actual net salvage costs incurred are essential to allow the Commission and interveners to test these costs in a prudence review.

683. The Commission reiterates that it is important for AltaLink to clearly report its net salvage costs, particularly as it transitions to its capitalize and expense net salvage method. The capitalize and expense net salvage method is different from the traditional net salvage method used by most other utilities in Alberta. When AltaLink's transition period to this new method is complete, the net salvage costs for an asset being retired and replaced will be capitalized to the cost of the new replacement asset and AltaLink will earn a return. In the case of net salvage costs for a terminal asset, which will not be replaced, the costs will either draw down on the net salvage reserve account or be expensed in their entirety.

684. Given the importance of understanding the net salvage costs under the capitalize and expense net salvage method, the Commission finds the level of information provided by AltaLink to support its 2019 to 2021 actual net salvage costs to be deficient. The Commission is not able to determine the prudence of AltaLink's 2019 to 2021 net salvage costs.

685. It is not clear to the Commission whether the deficiency is the result of a lack of willingness on AltaLink's part to comply with clear directions of the Commission or an inability to satisfactorily implement its now approved capitalize and expense net salvage method. In either case, neither the parties nor the Commission have been able to reasonably and efficiently test costs that directly inform rate base within the current proceeding.

686. Accordingly, the Commission directs AltaLink in its compliance filing to remove from its 2022 opening net salvage reserve account its 2019-2020 actual, and 2021 forecast net salvage costs totalling \$96.4 million<sup>684</sup> (excluding each year's net salvage costs pertaining to its direct assigned projects) and flow the effect of doing so through its revenue requirement calculations

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<sup>683</sup> Transcript, Volume 1, page 122, lines 6-15.

<sup>684</sup> Exhibit 26509-X0162, AML-CCA-2021JUN25-016 Attachment, calculated in \$000's as: (\$32,260 + \$35,457 + \$29,324) less (\$0.366 + \$0.052 + \$0.262) = \$96,361.

for the years 2022-2023. If AltaLink's actual 2021 net salvage costs are known at the time of its compliance filing, AltaLink is directed to remove those costs.

687. If in its next GTA AltaLink provides the necessary support for its actual 2019-2021 net salvage costs, those costs will be tested for prudence and, if prudent, may be added to the opening balance of its net salvage reserve account for the first year of that test period.

688. If AltaLink is unwilling or unable to provide information that supports a prudence review, the Commission may consider that it is in the best interests of ratepayers that AltaLink revert to its traditional net salvage method.

#### **12.4 Changes to capitalize and expense salvage method**

689. For the reasons set out below, the Commission is not persuaded by the CCA's proposal to implement changes to the mechanics of AltaLink's capitalize and expense net salvage method.

690. In Decision 25870-D01-2020, which decided AltaLink's Stage 2 review and variance of Decision 23848-D01-2020, the Commission accepted AltaLink's proposal to implement its capitalize and expense net salvage method over a period of approximately seven to eight years.

691. The CCA suggested that certain aspects of AltaLink's now approved net salvage method should be changed. The CCA recommended that AltaLink begin the capitalization of salvage costs for interim retirements in the test period as a way to preserve the balance in the net salvage reserve account for costs of future terminal retirements.<sup>685</sup> The CCA recommended an "alternate method to track interim salvage costs" which required that in addition to tracking both interim and terminal salvage costs within the existing salvage reserve account, AltaLink should also be directed to either expense or defer its future salvage costs. The amounts deferred would be financed entirely with debt and, according to the CCA, would remove any improper revenue signals that otherwise incentivize AltaLink to increase its rate base through the capitalization of the costs of removal related to interim retirements.<sup>686</sup>

692. The Commission does not see a clear benefit to the changes proposed by the CCA at this time. Given the early stages of AltaLink's transition to its approved capitalize and expense net salvage method, the CCA's request is denied.

### **13 Issue 9: Is AltaLink's forecast necessary working capital reasonable?**

#### **13.1 Proposed change to necessary working capital calculation**

693. The Commission denies AltaLink's requested increase in forecast necessary working capital caused by an increase in the frequency of equity distributions made by AltaLink, in its capacity as General Partner of AltaLink, L.P., to its partners.

694. The Commission finds that it is unreasonable for Alberta electricity ratepayers to pay higher transmission rates that are attributable to more frequent distributions of equity to AltaLink's partners. AltaLink stated that since its previous lead lag study, it commenced paying its equity distributions to its partners on a monthly rather than quarterly basis. It did so to "more

<sup>685</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 38 and 40-41, paragraphs 97 and 105.

<sup>686</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 43 and 45, paragraphs 113-114 and 120.

closely align AltaLink's balance sheet with the AUC approved capital structure ... [and] results in an average dollar impact rounding to \$2.7M per year over the Test Period."<sup>687</sup> In its lead lag study, AltaLink stated that the driver for the increase in its working capital requirements was an increase in the frequency of its equity distributions.<sup>688</sup>

695. The Commission recognizes that AltaLink will target its actual capital structure to match its approved deemed capital structure; however, AltaLink is not required to align its balance sheet on a monthly basis to do so. In Decision 22211-D01-2017,<sup>689</sup> the Commission accepted that the actual equity ratios maintained by a utility, either on a year-end or mid-year basis, will not always be the same as the deemed equity ratio at any given time. It recognized that differences can result from such events as regulatory lag in issuing generic cost of capital decisions, variations in net income, the timing and value of capital expenditures, the timing and amount of debt issues, and the payment of dividends. Accordingly, a utility's actual equity ratio, either on a year-end or mid-year basis, may be either higher or lower than the deemed amount.

696. The Commission agrees with the CCA's observation that AltaLink is not required, nor could it prove that it was not able, to maintain its approved capital structure under its previous quarterly equity distribution policy. AltaLink did not place any evidence on the record of this proceeding demonstrating that was the case. It was for this reason that the CCA recommended AltaLink be directed to maintain and reflect the previously approved approach for its equity distributions on a quarterly basis, in its requested necessary working capital amount.<sup>690</sup>

697. Based on the foregoing, the Commission directs AltaLink to revert to its previous lead/lag calculation methodology for its equity distributions made on a quarterly basis and to reflect the attendant impact on its necessary working capital forecast and revenue requirement, in its compliance filing to this decision.

### **13.2 Proposed removal of \$1.4 million from 2022 opening rate base due to alleged error in capitalized software projects**

698. The Commission does not agree with the UCA that AltaLink has over-reported its 2022 opening rate base due to an error in its capitalized software projects and necessary working capital calculations. In its evidence,<sup>691</sup> the UCA stated that AltaLink's working capital and depreciation expense and, accordingly, its 2022 opening rate base, should reflect a Commission direction to remove \$1.4 million of extra capital additions related to software projects that have not been supported by AltaLink's CWIP continuity schedules,<sup>692</sup> or schedules showing capital additions by project.<sup>693</sup>

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<sup>687</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 294, paragraph 974.

<sup>688</sup> Exhibit 26509-X0012, Appendix 07 (Lead Lag Study), PDF page 6, paragraphs 42-43.

<sup>689</sup> Decision 22211-D01-2017: ENMAX Power Corporation, Application for Finalization of Deemed Equity Ratio for 2016-2017, Proceeding 22211, July 27, 2017.

<sup>690</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF pages 169-171, paragraphs 474-478.

<sup>691</sup> Exhibit 26509-X0276, UCA evidence of H. Mahmudov and J. Crozier, PDF pages 33-34.

<sup>692</sup> Exhibit 26509-X0112, AML CWIP Continuity Schedules 2019-2023 CRU IT Facilities, SIS CWIP.

<sup>693</sup> Exhibit 26509-X0128, AML-UCA-2021JUN25-011 Attachment 1 Breakdown of Non-SAP 5 Yr. projects.

699. On three occasions, AltaLink confirmed<sup>694</sup> that the unamortized computer system costs are removed from AltaLink’s transmission rate base notwithstanding that the analysis conducted by the UCA concluded that the \$1.4 million amount at issue was used to calculate AltaLink’s necessary working capital and related allowance.

700. The Commission accepts that AltaLink has reflected its software-related capital additions accurately and that its unamortized computer system costs are reflected appropriately in its necessary working capital and related allowance calculation. The Commission considers that the UCA has relied on Exhibit 26509-X0128 to make its recommendations, which AltaLink stated reflects information that is not used in its necessary working capital calculations. Accordingly, the Commission does not accept the recommendation of the UCA.

701. Any disallowances related to the prudence of AltaLink’s 2019-2020 capital computer software additions is discussed in Section 9.2 of this decision.

**14 Issue 10: What is the reasonable forecast of interest expense for AltaLink’s long-term debt?**

702. AltaLink applied for Commission approval of a forecast 2022 long-term debt issuance of \$350 million at 2.92 per cent and a forecast 2023 long-term debt issuance of \$550 million at 3.74 per cent. AltaLink’s forecast interest rates for its new long-term debt issuances were based on estimates of future Government of Canada bond yields and AltaLink’s current new issue credit spread. The table below illustrates AltaLink’s most recent forecast for Government of Canada bond yields provided by its four principal bankers:<sup>695</sup>

**Table 30. AltaLink 2022-2023 long-term debt issue**

Issue date	Maturity date	Term in years	Principal amount (\$ million)	Government of Canada bond yields	Credit spread	All in yield	Agency Commission	Agency Commission	Other new issue expense
November 28, 2022	November 28, 2032	10	\$350.0	2.01%	0.910%	2.92%	0.40%	\$1,400,000	\$891,250
November 6, 2023	November 6, 2053	30	\$550.0	2.45%	1.288%	3.74%	0.50%	\$2,750,000	\$1,076,250

Source: Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 347, paragraph 1133, Table 28.3.2-1.

703. The Commission is not persuaded by the request of Jan Thygesen, on the behalf of the CCA, for AltaLink to revise its debt rate forecast to use more recent Government of Canada bond yields.<sup>696</sup> The Commission finds no basis to accept the CCA’s proposal for AltaLink to raise its forecast 2.92 per cent rate for the 10-year debt issuance and the 3.74 per cent rate for the 30-year debt issuance by 3.0 basis points to 2.95 per cent and 3.77 per cent, respectively. The

<sup>694</sup> Exhibit 26509-X0125, AML-UCA-2021JUN25-011(b), PDF page 39; Exhibit 26509-X0196, AML response to UCA Motion, Appendix A, AML-UCA-2021JUN25-011(b), PDF pages 5-6; Exhibit 26509-X0309, AltaLink rebuttal evidence, PDF pages 297-298, paragraphs 1395-1397.

<sup>695</sup> In Exhibit 26509-X0008.01, AltaLink’s principal bankers have provided their most recent forecast for Government of Canada bond yields in Attachment 1. Details regarding AltaLink’s current new issue credit spread are in Attachment 2.

<sup>696</sup> Exhibit 26509-X0299, CCA revised evidence of J. Thygesen (revised), PDF page 3, paragraph 9.

Commission is satisfied with AltaLink's established method to forecast its long-term debt rate and approves the debt rates as revised in its application update of September 3, 2021.<sup>697</sup>

704. The Commission accepts AltaLink's statement that it does not use the present day's actual rates as the forecast for future rates, nor does it use changes in current rates to revise forecast future rates. The approach employed is similar to that used by Consensus Forecasts.<sup>698</sup>

705. The Commission also does not accept the CCA's suggestion that AltaLink use the Bloomberg forward curve, which results in forecast rates of 2.40 per cent and 3.18 per cent.<sup>699</sup> The Commission accepts that AltaLink does not use the Bloomberg forward curve to forecast the Government of Canada bond yields. Forward rates represent interest rates that can be locked in today for settlement at a point in time in the future. The Commission agrees with AltaLink that the Bloomberg forward curve is not a forecast of an interest rate in the future.<sup>700</sup>

## 15 Issue 11: Should AltaLink's special facilities charge be approved?

706. AltaLink applied for Commission approval of a special facilities charge. The special facilities charge would apply to transmission assets that are currently customer-owned but would be purchased by AltaLink. After the purchase is complete, the customer would pay AltaLink an applicable special facilities charge for the use of the assets. AltaLink's shareholders would accept all of the risk associated with a potential customer default, but in return would retain a premium for taking on that risk.<sup>701</sup>

707. AltaLink stated that customers who currently own transmission class assets are focused on reducing costs to remain competitive, and that AltaLink has the capabilities and the economy of scale to own, operate and maintain these transmission assets more cost-effectively than individual customers. The proposed special facilities charge is an opportunity for AltaLink to effect these costs savings while providing a "net benefit to AltaLink ratepayers in the form of a lower future transmission tariff."<sup>702</sup> Alberta electricity ratepayers would also "benefit from reduced AltaLink overhead costs, which are recovered through the administrative fee charged to SFC [special facilities charge] customers, also resulting in lower future transmission tariff."<sup>703</sup> AltaLink added "... while there are no circumstances preventing a nonregulated offering, a nonregulated offering would not create value for AltaLink's customers nor will it result in a reduced future transmission tariff in the form of miscellaneous revenue and allocated overhead costs."<sup>704</sup>

708. The Commission denies AltaLink's request for a special facility charge for the reasons that follow.

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<sup>697</sup> Exhibit 26509-X0008.01, Appendix 05.

<sup>698</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 299, paragraphs 1399-1400.

<sup>699</sup> Exhibit 26509-X0299, CCA revised evidence of J. Thygesen (revised), PDF page 5, paragraphs 14-16.

<sup>700</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 299, paragraph 1399.

<sup>701</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-002 and 004, PDF pages 9-11 and 13.

<sup>702</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-002(f), PDF pages 9-10.

<sup>703</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-002(f), PDF pages 9-10.

<sup>704</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-002(k), PDF page 10.

709. First, the Commission finds that there is no reason for it to regulate transmission assets that would be subject to the special facilities charge. Assets to be purchased under the special facilities charge are “behind the fence” customer-owned transmission assets whose costs are not currently recovered under the ISO tariff.

710. The Commission is not persuaded that a purchase of these transmission assets by AltaLink could or should result in them being regulated under a tariff, whereas a sale to another third party or continued customer ownership does not. Indeed, AltaLink acknowledged that nothing prohibited it from owning and operating these transmission assets on an unregulated basis, but indicated that it did not want to pursue that option.<sup>705</sup>

711. In the Commission’s view, if AltaLink can purchase customer facilities on a non-regulated basis, then it may do so. The Commission regulates the utilities sector, natural gas and electricity markets to protect social, economic and environmental interests of Alberta where competitive market forces do not. There was no suggestion on the record of this proceeding that these currently unregulated facilities required regulation through AltaLink’s tariff.

712. Second, the Commission is not persuaded by the evidence provided by AltaLink that a special facilities charge will benefit Alberta electricity ratepayers. AltaLink claimed that Alberta electricity ratepayers would benefit because direct operations and maintenance costs associated with special facilities charge work will be forecast as miscellaneous revenue, resulting in an offset to AltaLink’s revenue requirement. AltaLink also noted that Alberta electricity ratepayers will benefit from reduced AltaLink overhead costs, which would be recovered through an administrative fee charged to special facilities charge customers, resulting in a lower future transmission tariff.

713. The Commission does not agree with the position of AltaLink that benefits to Alberta electricity ratepayers would largely be lost if AltaLink pursued a special facilities charge through an unregulated undertaking without using regulated resources. Rather, the Commission agrees with the CCA’s submissions that if regulated resources were not used to perform special facility charge work, then these resources could be removed from AltaLink’s regulated operations, thereby lowering AltaLink’s revenue requirement.<sup>706</sup>

714. In making this finding, the Commission recognizes that customers subject to a special facilities charge may benefit if AltaLink offers the special facilities charge under its tariff with its regulated resources. AltaLink indicated that an unregulated undertaking would be uneconomic. In the Commission’s view, there appears to be an implied cross-subsidy between AltaLink’s regulated operations and the services provided pursuant to the special facilities charge. AltaLink has failed to satisfactorily explain how this is not the case.

715. Third, and independent from the reasons noted above, the Commission finds that AltaLink’s proposed special facilities charge is inconsistent with the *Electric Utilities Act*. The underlying scheme of that act is for TFOs, such as AltaLink, to have a tariff relationship with the ISO and not with individual customers.

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<sup>705</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-002(k), PDF page 10.

<sup>706</sup> Exhibit 26509-X0282, CCA evidence of D. Madsen, PDF page 172, paragraph 481.

716. In the Commission’s view the special facilities charge would not fit within this scheme. Under AltaLink’s proposal, its tariff-based special facilities charge would be paid for by a customer directly to AltaLink. Under the *Electric Utilities Act*, however, the ISO must pay the rates set out in the approved tariff of the owner of each transmission facility.<sup>707</sup> Under the statute, the “rate” would include the special facility charge.<sup>708</sup> The ISO then recovers these amounts through its Commission-approved tariff.<sup>709</sup> AltaLink’s proposed special facilities charge circumvents these provisions to create a direct tariff relationship between AltaLink and its customers.

## **16 Issue 12: Should AltaLink’s termination of its service agreement with TransAlta be approved?**

717. AltaLink included transmission revenue offsets as part of its application. The offsets include revenue AltaLink expects to earn by providing operations and maintenance services for transmission assets owned by TransAlta Utilities Corporation (TransAlta) located on First Nations reserves.

718. These assets were withheld from AltaLink’s purchase of TransAlta’s electrical transmission assets, as approved by the Commission’s predecessor, the Alberta Energy and Utilities Board, in Decision 2002-038.<sup>710</sup> In the proceeding leading to Decision 2002-038, a number of First Nations objected to the sale of transmission assets on their reserve lands. TransAlta amended its application to maintain ownership of these assets while divesting itself of the remainder of its transmission assets to AltaLink (with a few other exceptions). In the purchase and sale agreement, AltaLink agreed to provide TransAlta with operations and maintenance services for these withheld assets.<sup>711</sup> AltaLink provided these services to TransAlta under the terms of an operations and maintenance agreement made as of April 29, 2002 (O&M Agreement). AltaLink’s position is that the O&M Agreement terminates or expires effective April 29, 2022.<sup>712</sup> AltaLink forecast decreased revenue requirement offsets connected with the agreement over the test period.<sup>713</sup>

719. The issue the Commission must decide is how much revenue associated with the O&M Agreement should offset AltaLink’s revenue requirement over this test period. As AltaLink indicated, how TransAlta responds to AltaLink’s position is a question that the Commission can address when it examines TransAlta’s operations and maintenance expenses in its next GTA.

720. For the reasons below, the Commission has decided to fix revenue requirement offsets connected with the O&M Agreement at the level forecast by AltaLink over this test period on a placeholder basis. This means that the placeholder amount is subject to change in the future based on AltaLink’s actual revenues earned under the O&M Agreement over this test period.

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<sup>707</sup> *Electric Utilities Act*, Section 32(a).

<sup>708</sup> *Electric Utilities Act*, Section 1(1)(pp).

<sup>709</sup> *Electric Utilities Act*, Section 30(2)(a).

<sup>710</sup> Decision 2002-038: TransAlta Utilities Corporation and TransAlta Energy Corporation, AltaLink Management Ltd., Sale of TransAlta Transmission Assets and Business to AltaLink, March 28, 2002.

<sup>711</sup> Exhibit 26509-X0156, AML-CCA-2021JUN25-008(a), PDF page 34.

<sup>712</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 196, paragraph 602.

<sup>713</sup> Exhibit 26509-X0002.01, AML 2022-2023 GTA, PDF page 196, paragraph 603, Table 8.1.1-2.

The placeholder amounts will be trued up for AltaLink's actual revenues at the time of AltaLink's next GTA.

721. The Commission is not persuaded that the O&M Agreement effectively expires on April 29, 2022, or that AltaLink has the right to terminate it. It is uncertain whether AltaLink has the right to terminate the O&M Agreement because:

- (i) there is nothing in the O&M Agreement that suggests the term of the O&M Agreement expires after 20 years. To the contrary, while the "Initial Term" of the O&M Agreement expires after 20 years, it is followed by successive automatic renewal terms of five years unless the parties otherwise mutually agree.<sup>714</sup>
- (ii) TransAlta expressly has that right to terminate the O&M Agreement by providing notice, but not AltaLink.<sup>715</sup> When questioned, AltaLink acknowledged that the O&M Agreement does not explicitly confer on it the right to terminate the O&M Agreement, but argued that the common law does not allow contracts to be perpetual, and that a legal analysis of the contract determined that the O&M Agreement could be terminated based on reasonable notice.<sup>716</sup>
- (iii) whether an agreement is perpetual, or is terminable on reasonable notice, is a matter of contractual interpretation.<sup>717</sup>

## 17 AltaLink 2020 DACDA reconciliation application

722. AltaLink applied for approval and reconciliation of direct assigned capital projects that were completed in 2020, all 2020 trailing costs considered in prior DACDA proceedings, all other deferral account balances (including deferral accounts for long-term debt, taxes other than income tax, and annual structure payments), and a revenue true-up for the year 2020 in relation to amounts determined in its 2019-2021 GTA.<sup>718</sup>

723. The following table illustrates the actual costs associated with 79 direct assigned capital projects with actual costs being added to rate base. Three projects resulted from system access service requests to the AESO by a customer requiring transmission service. One project<sup>719</sup> was also executed by a market participant, Canadian Natural Resources Limited (CNRL), under the Market Participant Choice (MPC) process. In accordance with the *Transmission Regulation*,<sup>720</sup> market participants may submit a proposal to the AESO to construct and temporarily operate

<sup>714</sup> Exhibit 26509-X0117, O&M Agreement, Clause 2.

<sup>715</sup> Exhibit 26509-X0117, O&M Agreement, Clause 3.

<sup>716</sup> Transcript, Volume 1, page 131, lines 1-14, and page 148, lines 1-16.

<sup>717</sup> See, for example, *Conseil Scolaire Catholique Franco-Nord and La Corporation de la Municipalité de Nipissing Ouest*, 2021 ONCA 544; *Shaw Cablesystems (Manitoba) Ltd. v Canadian Legion Memorial Housing Foundation (Manitoba)* (1997), 143 D.L.R. (4th) 193, (Man. C.A.).

<sup>718</sup> Exhibit 26509-X0052, AML 2020 DACDA reconciliation application.

<sup>719</sup> AltaLink has included one 2020 project, the Kirby North Central Processing Facility Interconnection Project executed by CNRL pursuant to the MPC process (the Kirby North MPC Project).

<sup>720</sup> *Transmission Regulation*, Alta Reg 86/2007 at s. 24.31.

transmission facilities. Consistent with the MPC process, CNRL designed and constructed the project which was then transferred to AltaLink after construction.<sup>721</sup>

**Table 31. 2020 DACDA actual capital additions**

Project type	Number of projects	Gross additions		Net additions	
		2020 GTA Forecast	2020 Actual	2020 GTA Forecast	2020 Actual
		(\$ million)			
Customer projects	3	3.3	11.5	0.02	2.9
Project associated with the MPC process	1	-	8.5	-	2.5
Trailing costs for previously approved projects	41	0.7	5.9	0.7	6.0
Trailing costs for customer contributions	34	-	0.3	-	(3.5)
Other	-	94.1	-	6.7	-
<b>Total</b>	<b>79</b>	<b>98.0</b>	<b>26.2</b>	<b>7.4</b>	<b>8.0</b>

Source: Exhibit 26509-X0052, AML 2020 DACDA reconciliation application, PDF page 10, paragraph 35, Table 1-2.

724. The Commission finds that the addition to rate base of the actual costs associated with the 79 direct assigned capital projects is reasonable. The Commission notes that several direct assigned capital projects forecast in AltaLink’s 2020 GTA were either delayed or cancelled.<sup>722</sup> AltaLink did not identify any cancelled system projects and identified 10 projects cancelled by the customer. As the customer funded the expenditures, AltaLink is not seeking any additional recovery of incurred expenses.<sup>723</sup>

725. Based on the foregoing, the Commission approves the actual costs spent on direct assigned capital and the associated DACDA balances for the direct assigned projects completed in 2020. This amounts to a recovery of \$1.3 million associated with the 2020 DACDA reconciliation, and \$0.9 million in refunds associated with other deferral accounts. The Commission also approves the 2020 revenue true-up in relation to AltaLink’s 2019-2021 GTA, resulting in a one-time charge to the AESO in the amount of \$0.4 million.<sup>724</sup>

## 17.1 The issue

726. The only issue that the Commission makes findings on is whether placeholder status should continue to be approved for ongoing litigation issues with the EPCm service provider.

## 17.2 Issue 1: Should placeholder status continue to be approved for ongoing litigation issues with the EPCm service provider?

727. Also within its 2020 DACDA reconciliation application, AltaLink identified that two ongoing disputes involving the litigation of defective helix spacer dampers installed on 14 AltaLink projects and foundation deficiencies for transmission lines 675L and 676L on the

<sup>721</sup> Exhibit 26509-X0052, AML 2020 DACDA reconciliation application, PDF page 7, paragraph 11.

<sup>722</sup> AltaLink lists the projects as the Fortis Provost that was forecast at \$40 million and was delayed into 2021. Also, the Grist Lake Project was cancelled where it was forecast at \$23.8 million. The Fortis Barrhead-Westlock Project forecast at \$5.8 million was also delayed pending the AESO’s determination of the NID strategy.

<sup>723</sup> Exhibit 26509-X0052, AML 2020 DACDA reconciliation application, PDF pages 23-24, paragraphs 90-91, Table 4-8.

<sup>724</sup> Exhibit 26509-X0052, AML 2020 DACDA reconciliation application, PDF page 6, paragraphs 4-5.

Medicine Hat 138 kV Area Reconfiguration Project remain unresolved.<sup>725 726</sup> The ongoing litigation disputes involve SNC-Lavalin ATP Inc. as the EPCm service provider.

728. The Commission approved placeholder treatment of costs related to these litigation matters in Decision 24681-D01-2020 and in Decision 25913-D01-2021. In its application, AltaLink identified that trailing costs were incurred in 2020 on both matters.<sup>727</sup> Given the ongoing litigation, the Commission approves the requested placeholder treatment. Once this litigation has concluded, the Commission directs AltaLink to submit a request for final approval of these costs, including any actual trailing costs, in its next applicable DACDA proceeding.

## 18 PiikaniLink and KainaiLink 2022-2023 GTAs

729. The breakdown of PiikaniLink and KainaiLink 2022-2023 revenue requirements and other forecast costs are shown in the tables below:

**Table 32. PiikaniLink's 2022 and 2023 revenue requirements**

Description	2022 Forecast	2023 Forecast
	(\$000)	
Operating & maintenance (O&M)	194.3	194.3
Annual structure payments (ASP)	99.7	99.7
Payments in lieu of taxes (PILOT)	225.9	225.6
General and administrative (G&A)	161.0	161.0
Depreciation	1,575.0	1,575.7
Return on rate base	2,679.0	2,580.2
Income tax expense	0	0
<b>Total revenue requirement</b>	<b>4,934.9</b>	<b>4,836.5</b>

Source: Exhibit 26509-X0093, PLP 2022-2023 GTA, PDF page 6, Table 1-1

**Table 33. KainaiLink's 2022 and 2023 revenue requirements**

Description	2022 Forecast	2023 Forecast
	(\$000)	
Operating & maintenance (O&M)	98.9	98.9
Annual structure payments (ASP)	94.5	94.5
Payments in lieu of taxes (PILOT)	77.8	79.8
General and administrative (G&A)	161.0	161.0
Depreciation	922.7	923.5
Return on rate base	1,810.3	1,752.0
Income tax expense	0	0
<b>Total revenue requirement</b>	<b>3,165.3</b>	<b>3,109.7</b>

Source: Exhibit 26509-X0089, KLP 2022-2023 GTA, PDF page 6, Table 1-1.

### 18.1 The issues

730. In the following sections, the Commission makes findings on the following matters:

<sup>725</sup> Decision 24681-D01-2020, paragraphs 88-95.

<sup>726</sup> Proceeding 25913, Exhibit 25913-X0007, AML 2019 DACDA reconsolidation application, PDF page 10, paragraphs 34-38, and Decision 25913-D01-2021: AltaLink Management Ltd., 2019 Projects Deferral Accounts Reconciliation Application, Proceeding 25913, March 19, 2021, paragraph 64.

<sup>727</sup> Exhibit 26509-X0052, AML 2020 DACDA reconsolidation application, PDF page 22, paragraph 86.

- (i) Do PiikaniLink's and KainaiLink's 2022-2023 revenue requirements need to be revised for incremental hearing and audit costs based on the appeal of Decision 22612-D01-2018?
- (ii) Do PiikaniLink's and KainaiLink's 2022-2023 revenue requirements need to be revised for depreciation expenses?
- (iii) Should the Commission approve deferral accounts for PiikaniLink's and KainaiLink's annual structure payments and payments in lieu of taxes?

**18.2 Issue 1: Do PiikaniLink's and KainaiLink's 2022-2023 revenue requirements need to be revised for incremental hearing and audit costs based on the appeal of Decision 22612-D01-2018?**

731. The costs incurred by AltaLink for general and administrative (G&A) expenses are charged through a fixed fee inter-affiliate charge to each of PiikaniLink and KainaiLink, since they do not have employees. Within its G&A expenses, AltaLink did not include incremental audit and hearing costs in PiikaniLink's and KainaiLink's 2022 and 2023 revenue requirements. This is because the Commission disallowed these costs from being recovered as part of the revenue requirements of PiikaniLink and KainaiLink in Decision 22612-D01-2018.<sup>728</sup>

732. On October 15, 2021, the Court of Appeal released its judgment in *AltaLink Management Ltd. v Alberta (Utilities Commission)*, 2021 ABCA 342. There, the Court of Appeal allowed AltaLink's appeal of Decision 22612-D01-2018, and varied Decision 22612-D01-2018 to allow PiikaniLink and KainaiLink to include incremental hearing and audit costs in their respective tariff applications. Accordingly, the Commission directs AltaLink to include the incremental audit and hearing costs disallowed in Decision 22612-D01-2018 as part of its revised MFR schedules and respective revenue requirements in the compliance filing to this decision.

**18.3 Issue 2: Do PiikaniLink's and KainaiLink's 2022-2023 revenue requirements need to be revised for depreciation expenses?**

733. PiikaniLink's and KainaiLink's forecast 2022-2023 depreciation expense reflect the same depreciation methodologies, depreciation parameters and corresponding depreciation rates proposed by AltaLink in its 2019 Depreciation Study.<sup>729</sup> This approach is consistent with the Commission's related approvals in Decision 22612-D01-2018.

734. As noted in Section 12 of this decision, the Commission did not accept all changes to depreciation parameters proposed by AltaLink in its 2019 Depreciation Study. Therefore, the depreciation expense calculations including the annual amortization of reserve differences amount, for each of PiikaniLink and KainaiLink are required to be revised to reflect the Commission's findings in Section 12. Accordingly, the Commission directs AltaLink in its compliance filing to this decision to incorporate all necessary adjustments to the depreciation expense amounts included in the revised MFR schedules and respective revenue requirements of PiikaniLink and KainaiLink.

<sup>728</sup> Decision 22612-D01-2018, PDF page 19, paragraph 61.

<sup>729</sup> Exhibit 26509-X0089, KLP 2022-2023 GTA, PDF page 9, paragraph 21, and Exhibit 26509-X0093, PLP 2022-2023 GTA, PDF page 9, paragraph 22.

#### 18.4 Issue 3: Should the Commission approve deferral accounts for PiikaniLink's and KainaiLink's ASP and PILOT?

735. PiikaniLink and KainaiLink each requested deferral account treatment of annual structure payments (ASP) and payment in lieu of taxes (PILOT) noting that each are beyond the control of PiikaniLink and KainaiLink and can have material impacts on their revenue requirements. In Decision 22612-D01-2018, where the Commission approved the transfer of transmission assets to PiikaniLink and KainaiLink, the Commission deferred its decision to approve the establishment of these deferral accounts. The Commission was concerned that the Piikani and Kainai Nations may be incented to seek increases in the amount of ASPs and PILOT.<sup>730</sup>

736. For the reasons that follow, the Commission approves the ASP and PILOT deferral accounts requested by PiikaniLink and KainaiLink.

737. First, the methodology used to forecast these costs is modelled after AltaLink's 100 per cent owned assets, as if AltaLink still wholly owns the PiikaniLink and KainaiLink assets:<sup>731</sup>

- Property taxes were calculated using a linear tax rate equivalent to the municipal linear tax payable in neighbouring districts, then applied to the transmission facilities on the Blood Reserve.<sup>732</sup> Similar treatment was proposed for the transmission facilities on the Piikani Reserve.<sup>733</sup>
- ASPs for PiikaniLink and KainaiLink rely on escalation changes dictated by the Land and Property Rights Tribunal (formerly the Alberta Surface Rights Board).

Accordingly, the Commission notes that these costs are not expected to grow at a greater rate than would be the case had the transfer of the assets not occurred.

738. Second, the use of a deferral account for each of ASP and PILOT provides the Commission with the opportunity to review and approve actual costs incurred. This allows the Commission to review and test any increases in these amounts before any costs are passed through to Alberta ratepayers.<sup>734</sup>

739. Third, the Commission accepts the submission from AltaLink that a five per cent variance in the combined ASP and PILOT expense can have a material effect on both PiikaniLink and KainaiLink earnings.<sup>735</sup> The Commission agrees with AltaLink that deferral account treatment would protect ratepayers and the utilities from forecast risk in non-controllable property tax or ASP related variables.

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<sup>730</sup> Decision 22612-D01-2018, paragraph 219.

<sup>731</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-069(f), PDF page 315.

<sup>732</sup> Exhibit 26509-X0089, KLP 2022-2023 GTA, PDF pages 19-20, paragraph 68.

<sup>733</sup> Exhibit 26509-X0093, PLP 2022-2023 GTA, PDF pages 19-20, paragraph 69.

<sup>734</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-069(f), PDF page 315.

<sup>735</sup> Exhibit 26509-X0223, AML-AUC-2021AUG20-069(c), PDF page 314.

## 19 Order

740. It is hereby ordered that:

- (1) AltaLink Management Ltd. must file its 2022-2023 transmission general tariff application compliance filing by February 18, 2022, to reflect the findings, conclusions and directions in this decision.
- (2) PiikaniLink Limited Partnership must file its 2022-2023 transmission general tariff application compliance filing by February 18, 2022, to reflect the findings, conclusions and directions in this decision.
- (3) KainaiLink Limited Partnership must file its 2022-2023 transmission general tariff application compliance filing by February 18, 2022, to reflect the findings, conclusions and directions in this decision.
- (4) AltaLink Management Ltd. is to charge \$0.4 million through a one-time billing to the Alberta Electric System Operator to dispose of its final settlement balances for its 2020 direct assigned capital deferral account.

Dated on January 19, 2022.

### Alberta Utilities Commission

*(original signed by)*

Kristi Sebalj  
Panel Chair

*(original signed by)*

Vera Slawinski  
Commission Member

*(original signed by)*

Vincent Kostasny  
Acting Commission Member

## Appendix 1 – Proceeding participants

<b>Name of organization (abbreviation) Company name of counsel or representative</b>
AltaLink Management Ltd. (AltaLink) Borden, Ladner Gervais LLP
Consumers' Coalition of Alberta (CCA) Wachowich & Company
Office of the Utilities Consumer Advocate (UCA) Brownlee LLP
Industrial Power Consumers Association of Alberta (IPCAA)
Alberta Direct Connect Consumers Association (ADC)
Alberta Electric System Operator (AESO)

Alberta Utilities Commission
Commission panel K. Sebalj, Panel Chair V. Slawinski, Commission Member V. Kostaskey, Acting Commission Member
Commission staff P. Khan (Commission counsel) R. Watson (Commission counsel) P. Baker L. Mullen D. Fedoretz G. Bourque A. Starkov E. Davis D. Ward

## Appendix 2 – Virtual oral argument and reply argument – registered appearances

<b>Name of organization (abbreviation) Name of counsel or representative</b>
AltaLink Management Ltd. (AltaLink) Jonathan Liteplo
Consumers' Coalition of Alberta (CCA) James Wachowich, QC
Office of the Utilities Consumer Advocate (UCA) Thomas Marriott, QC

### Appendix 3 – Summary of Commission directions

This section is provided for the convenience of readers. In the event of any difference between the directions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail.

1. Accordingly, the Commission directs AltaLink to revise its union base pay increases to 1.8 per cent and to show the impacts to its revenue requirement in its compliance filing. If any other forecast is affected by this direction (e.g., AltaLink’s STIP or pension forecasts), AltaLink is directed to make all necessary changes to those forecasts and to show the impact of those changes in its compliance filing..... paragraph 69
2. Accordingly, the Commission approves a base pay increase of 1.8 per cent in each of 2022 and 2023 for both its non-union below-executive and executive employees, and directs AltaLink to show the impacts to its revenue requirement in its compliance filing. If any other forecast is affected by this direction (e.g., AltaLink’s STIP, LTIP or pension forecasts), AltaLink is directed to make all necessary changes to those forecasts and to show the impact of those changes in its compliance filing..... paragraph 74
3. Based on the foregoing, the forecast O&M FTE levels and the associated costs for this department are not supported or reasonable, and the Commission directs AltaLink to reduce the forecast O&M expenditures for this department by 10 per cent, in each of 2022 and 2023. In the Commission’s opinion, a 10 per cent reduction reasonably aligns AltaLink’s legal and regulatory department O&M costs with expected reductions in activity levels for this department. If this finding has any effect on other aspects of AltaLink’s forecasts, the Commission directs AltaLink to make all necessary changes to those forecasts and to show the impact of those changes in its compliance filing.  
..... paragraph 112
4. Furthermore, the Commission directs AltaLink not to offset the impact of a reduction to O&M FTEs with an increase in capital FTEs or contractor costs. .... paragraph 113
5. The Commission has decided to approve the costs in this account as filed, subject to the Commission’s findings respecting AltaLink’s capital IT programs and projects in Section 10.3 of this decision. If those findings have any effect on AltaLink’s operating IT expenditure forecasts, the Commission directs AltaLink to make all necessary changes to those forecasts and to show the impact of those changes in the compliance filing.  
..... paragraph 116
6. While the Commission did not rely on the table from Computer Economics or the IT spending ratios that the CCA derived for the reasons stated above, the Commission is concerned directionally about AltaLink’s expenditures in this area. AltaLink did not directly address or refute the data in the Computer Economics table or the CCA’s evidence about AltaLink’s IT spending ratios.<sup>736</sup> The Commission considers that relevant comparator information would be highly useful in evaluating these expenditures in AltaLink’s next GTA. The Commission therefore directs AltaLink to file a comparison of its total IT expenditures (including both O&M and capital IT expenditures) against other relevant comparators in the utility industry, as part of its next GTA. AltaLink should identify, explain and support the reasonableness of: (i) the methodology and analysis

<sup>736</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF pages 181-182, paragraphs 856-858.

- conducted to select the comparators; (ii) any assumptions made; and (iii) the metrics, or other quantitative assessment tools, used..... paragraph 121
7. The Commission further directs AltaLink to provide an analysis that shows its annual IT expenditures from 2015, to the next test period. As part of this analysis, AltaLink must provide a breakdown of its IT budget by cost category (e.g., hardware, software, subscription services, staffing, data centre, security, and other expenses) and by capital versus O&M. This breakdown should identify what components of the IT budget are user dependent, and what components are more global to AltaLink and cannot be broken down on a per user basis (e.g., data management costs for capital programs and projects, or the costs to implement new industry standards). AltaLink must also provide a narrative that summarizes the evolution of its IT expenditures by cost component since 2015, and identify the cost drivers (e.g., new industry standards, new security initiatives, software or hardware changes, etc.) for any material cost increases that have occurred since 2015. .... paragraph 122
  8. The Commission will instead rely on AltaLink’s approved (compliance) forecast per unit costs and the actual work achieved in 2019-2021 to determine the amount to be added to 2022 opening rate base. Accordingly, the Commission approves a capital addition in the amount of \$1.505 million for the two sub-projects within AltaLink’s Transmission Line Rights-of-Way Upgrades Program. As illustrated in Table 14 above, this amount has been determined, for each of the Targeted ROW Improvements and Wildfire Tree Removals project categories, by applying the respective previously approved forecast unit costs to the actual 191 units of work completed during the previous test period. For both of the project categories that are within the Transmission Line ROW Upgrades in HRFAs program, AltaLink is directed to reflect the amount of \$1.505 million in its 2022 opening rate base in its compliance filing. .... paragraph 150
  9. The Commission requires AltaLink to track the amounts and USA accounts to which emergency spares inventory has been, and may be, capitalized in the future. This will allow a better understanding of AltaLink’s inventory procurement and management practices. Therefore, the Commission directs AltaLink, in its compliance filing to this decision, to list the amounts capitalized by each USA in each applicable year both on an actual basis for 2019-2021 and on a forecast basis for 2022-2023. Further, at the time of its next GTA, the Commission directs AltaLink to provide the same information on an actual basis for the years 2022-2023 and on a forecast basis for the test years being applied for. AltaLink should also provide reasons for any capitalization of emergency spares inventory in addition to what has been capitalized in 2019-2021 and to explain how AltaLink differentiates between emergency spares inventory, and materials and supplies inventory included in Account 154 under the USA..... paragraph 158
  10. There are significant potential cost differences between rebuilding transmission line 799L and potential alternative solutions such as installing two circuit breakers at the South Mayerthorpe 443S Substation. Accordingly, in its compliance filing, the Commission directs AltaLink to explain in detail, why a solution similar to the proposed project for the Niton 228S Substation or any other potential alternative solutions, are not feasible for transmission line 799L. In its explanation, AltaLink should include the forecast costs of all potential alternative solutions examined. .... paragraph 176
  11. Accordingly, AltaLink is directed to remove its forecast capital expenditures of \$0.30 million in 2022 and \$0.31 million and 2023 in its compliance filing.. paragraph 183

12. However, given the large number of batteries AltaLink expects to replace in the near term, the Commission considers it necessary for AltaLink to explore approaches to maximize the lifespan of its batteries. In future GTAs, the Commission expects AltaLink will support its Battery Replacement Program with concrete data and analysis. AltaLink has a battery testing program, has installed battery monitors at a number of its substations, and can (in either a destructive or non-destructive manner) randomly test batteries as it removes them from service when they are replaced. These activities provide sources of data AltaLink can use to gain insights into the actual lifespans of batteries and to assess the effectiveness, and suitability, of different battery replacement methodologies. Accordingly, the Commission directs AltaLink to provide details on how it has used actual test results and observed failures to determine any battery bank and charger replacements it proposes in its next GTA. .... paragraph 191
13. Accordingly, the Commission denies AltaLink’s forecast capital expenditures for the Secondary Station Service projects in the 2022-2023 test period. AltaLink is directed to remove its forecast capital expenditures in the amount of \$0.80 million in 2022 and \$0.82 million in 2023 in its compliance filing. .... paragraph 200
14. Reviewing the table above, the Commission infers that the sites with no observed bird contacts would be those with 0.06 outages per year. This equates to approximately one outage every 17 years. This is a relatively low probability event compared to other sites identified in the table. The Commission does not consider these proposed capital expenditures reasonable when the expected benefits are low or unquantified. Accordingly, the Commission denies the forecast wildlife mitigation expenditures for the following seven sites: 746S, 99S, 38S, 799S, 54S, 899S and 107S. AltaLink is directed to remove all forecast capital expenditures associated with these sites in its compliance filing. .... paragraph 205
15. Based on the foregoing, the Commission finds SCADA expenditures in each of 2022 and 2023 of \$3.8 million per year, the same as AltaLink’s expected expenditures in 2021, to be reasonable. The Commission directs AltaLink, in its compliance filing, to revise its 2022 and 2023 forecast capital expenditures for the SCADA Equipment Program to total its 2021 management update capital expenditure amount of \$3.8 million for each year in the test period. .... paragraph 226
16. The Commission observes that a commercial telecom tower is directly adjacent to the 99S St. Albert Substation.<sup>737</sup> AltaLink did not explain whether it attempted to negotiate a joint-use agreement with the owner of this tower, which could allow AltaLink to place its radios on the tower. Given the expenditures necessary to install a new structure, the Commission directs AltaLink to provide evidence that it has explored this option when applying for its opening rate base in its next GTA. .... paragraph 234
17. For the reasons set out above, the Commission denies AltaLink’s forecast capital expenditures for the low capacity radio hop projects in the 2022-2023 test period. AltaLink is directed to remove its forecast capital expenditures of \$1.18 million in 2022 and \$1.26 million in 2023 in its compliance filing. .... paragraph 244
18. The Commission denies AltaLink’s forecast capital expenditures for the transformer and regulator replacements at the East Airdrie Substation and the North East Lacombe Substation in the 2022-2023 test period. A breakdown of the costs was not provided by

<sup>737</sup> Exhibit 26509-X0309, AML rebuttal evidence, PDF page 78, Figure 4-2.

- AltaLink for this cost category. As such, AltaLink is directed to remove its forecast capital expenditures for the replacement of the East Airdrie and North East Lacombe substations (199S T1 and 212S T1) in 2022 and in 2023 in its compliance filing. .... paragraph 262
19. The Commission considers AltaLink’s forecast capital expenditures for 69 kV breakers to be reasonable given the need to comply with PCB regulations. Given the lack of evidentiary support for AltaLink’s proposed 138 kV and 240 kV breaker replacements, the Commission considers a value at the mid-point of AltaLink’s requested number of replacements the CCA’s recommendation to be reasonable. This would result in a reduction of one 240 kV and one 138 kV breaker replacement per year. Accordingly, the Commission considers a forecast capital expenditure for high voltage breaker replacements of \$2.85 million in 2022 and \$2.49 million in 2023 to be reasonable, and denies \$0.73 million in 2022 and \$0.75 million in 2023 for these two breaker categories. AltaLink is directed to revise its forecast capital expenditures in 2022 and 2023 in its compliance filing. .... paragraph 276
20. The Commission directs AltaLink, in its compliance filing, to revise its 2022 and 2023 forecast capital expenditures for six project categories for its protection replacements to total its 2021 management update capital expenditure amount of \$5.56 million for each test period..... paragraph 301
21. Based on the foregoing, the Commission denies AltaLink’s forecast capital expenditures for the area coordination studies in the 2022-2023 test period as the Commission views that such costs are not capital related and should, accordingly, be removed from AltaLink’s forecast. AltaLink is directed in its compliance filing to remove forecast capital expenditures of \$0.4 million in 2022 and \$0.4 million in 2023..... paragraph 311
22. Accordingly, the Commission is not persuaded by the evidence provided by AltaLink on the physical condition of the buildings that replacement is required, and finds that AltaLink did not sufficiently examine options to repair the buildings, an option that appears to be feasible based on the record of this proceeding. Further, because AltaLink did not perform an NPV of revenue requirement analysis to compare whether it was more cost-effective to replace or repair the buildings, the Commission is unable to conclude that the costs associated with AltaLink’s proposal to replace the buildings, including costs to replace the associated equipment within the buildings, are reasonable. The Commission denies AltaLink’s forecast capital expenditures for the replacement of the control buildings and associated equipment at the North Calder 37S Substation in the 2022-2023 test period. AltaLink is directed to remove its forecast capital expenditures of \$2.31 million in 2022 and \$1.66 million in 2023 in its compliance filing. ... paragraph 332
23. Accordingly, the Commission is not persuaded by the evidence provided by AltaLink on the physical condition of the buildings that replacement is required. Further, because AltaLink did not perform an NPV of revenue requirement analysis to compare whether it was more cost-effective to replace or repair the buildings, the Commission is unable to conclude that the costs associated with AltaLink’s proposal to replace the buildings, including costs to replace the associated equipment within the buildings, are reasonable. The Commission denies AltaLink’s forecast capital expenditures for the replacement of the control buildings and associated equipment at the Taber 83S Substation in the 2023 test period. AltaLink is directed to remove its forecast capital expenditures of \$1.54 million in 2023 in its compliance filing. .... paragraph 339

24. Accordingly, the Commission denies the forecast capital expenditures for this program. Given this, the Commission finds that it is unnecessary to address the CCA’s recommended cost-saving measures related to choosing an alternate power flow methodology. AltaLink is directed to remove its forecast capital expenditures of \$4.5 million in 2022 and \$3.4 million in 2023 for this program in its compliance filing. If, in a future test period, AltaLink seeks approval of this program, then AltaLink is directed to provide the following:
- Information regarding what subset of costs in the program are for studying crossings and what costs are for mitigation, as well as the ownership of any equipment used to put in place the mitigation measures identified in its business case.
  - A detailed description of what an event is for the purposes of this business case and how AltaLink ranks events and ultimately determines whether an event is in need of further study. ....paragraph 355
25. Accordingly, the Commission directs AltaLink to remove its forecast capital expenditures of \$0.35 million in 2022 and in 2023 for its aerial mapping and attributes in its compliance filing. .... paragraph 377
26. The Commission directs AltaLink to remove its forecast capital expenditures of \$1.28 million in 2022 and \$1.80 million in 2023 for Category 3: remaining under-build deficiencies in its compliance filing. .... paragraph 383
27. Accordingly, the Commission denies AltaLink’s forecast capital expenditures for AltaLink’s Control Centre Relocation Project in this test period. The Commission directs AltaLink to remove its forecast capital expenditures of \$3.5 million in 2022 and \$6.5 million in 2023 for this project in its compliance filing. .... paragraph 402
28. Notwithstanding AltaLink’s position, the Commission is cognizant that the WMP program is relatively new. Further, in light of AltaLink’s previous commitment to work with fire experts to assess and define whether any other alternatives in support of its wildfire situational awareness can be provided, the Commission remains interested in any benefit that can be obtained from publicly available weather data sources. AltaLink is therefore directed to provide (i) an update in its next GTA as to whether any additional integration of publicly available weather data can be accommodated within its Wildfire Situational Awareness Program; and (ii) analysis of the potential benefit of incorporating such data..... paragraph 410
29. With respect to future reporting of component and structure replacements in HRFAs, the Commission finds that the status of AltaLink’s progress towards addressing notifications is required to determine where there is support for related future capital investments. Accordingly, the Commission directs AltaLink to provide a breakdown of its notifications, in a more granular level of detail, that were resolved in a prior test period or are forecast to be resolved in the next test period as a result of ongoing inspections and line patrols. In addition, the Commission would find it helpful if AltaLink’s business case included the total line length (km), total line length in HRFAs (km), the percentage of its line lengths located in each HRFA, the number of component and structure replacements, and the total fire-related notifications by component and structure. Similarly, AltaLink should provide evidence outlining the type, cause and why the deficiency addressed on each component and structure by line number and HRFA has to be replaced, as opposed

- to relying on a generic statement that “Insulator x 1 or Mechanical Hardware x 1” has to be replaced. The Commission finds that this generic statement does not explain what a deficiency is, and instead just indicates what component or structure AltaLink is replacing..... paragraph 417
30. Accordingly, AltaLink is directed to remove the forecast capital expenditures of \$1.75 million for transmission line 185L, and \$1.85 million for transmission line 412L in its compliance filing..... paragraph 425
31. Guided by the metrics table provided in Appendix 6, AltaLink is directed to update its WMP business case to include the quantitative metrics and show the performance indicators it will use to assess the progress and the overall effectiveness of its WMP commencing with 2019. AltaLink is also directed, in its next GTA filing, to provide more detailed descriptions in the table, including more specific definitions of what it means by Class I, II and III wildfire incidents. As an added metric, it would be beneficial for AltaLink to include any identified deficiencies, concerns, degrading hardware, structures and/or vegetation risks noted during the execution of its WMP and to identify the steps AltaLink will undertake to address these matters. .... paragraph 443
32. The Commission acknowledges AltaLink’s commitment to provide an update in its next GTA explaining how it has further developed its internal expertise, and how it has consulted with other utilities and weather and fire specialists. As AltaLink incorporates feedback through discussion with industry peers, the Commission expects AltaLink to take any corrective actions and adjust its program as required. If adjustments to the WMP are required resulting from these discussions, AltaLink is directed to provide all pertinent information in this regard, in a WMP update to be filed at the time of its next GTA. .... paragraph 445
33. Accordingly, AltaLink is directed to continue to track and provide quantitative analysis as part of its future reporting of transmission outage statistics system and SAP records and to include all ignition events that are connected to its transmission facilities. The information should incorporate the location, date, severity and impact of the fire, the component(s) or structure(s) that caused the ignition event, any outages that occurred as a result of the event, what preventative mitigation measures were employed, and the effectiveness of the mitigation measures. .... paragraph 447
34. The Commission finds that AltaLink has justified that it needs to incur capital expenditures to implement enhanced physical security measures to comply with CIP-014-AB-2. However, AltaLink has not provided a sufficient project breakdown in its business case that sets out the capital expenditures for each component of this project. Moreover, AltaLink applied for approval of this project on the basis that the Commission would approve costs associated with AltaLink’s control centre relocation. The Commission has denied these costs in Section 10.1.13 of this decision. AltaLink did not include this alternative scenario in its business case. Accordingly, the Commission directs AltaLink, in its compliance filing, to provide an updated project breakdown (in terms of project scope and costs) for each of the eight identified substations and for AltaLink’s current control centre location..... paragraph 465
35. Based on the foregoing, the Commission denies AltaLink’s forecast capital expenditures in the test period for its software implementations and process improvements. Accordingly, AltaLink is directed to remove forecast capital expenditures of

- \$0.93 million in 2022 and \$0.425 million in 2023 in its compliance filing. .... paragraph 473
36. Based on the foregoing, the Commission denies AltaLink’s forecast capital expenditures for the Data Storage Program in the 2022-2023 test period. AltaLink is directed to remove its forecast capital expenditures in the amount of \$1.59 million in 2022 and \$1.16 million in 2023 for this program in its compliance filing. .... paragraph 510
37. To the extent that AltaLink forecasts costs for data storage in future GTAs, the Commission directs AltaLink to provide details of its strategy to minimize costs associated with data storage requirements. .... paragraph 511
38. AltaLink is directed to remove its forecast capital expenditures of \$3.0 million in 2022 for the Outage Management Replacement Project in its compliance filing. .... paragraph 520
39. Accordingly, the Commission denies all of AltaLink’s forecast capital expenditures for the ERP Replacement Program and EAM Replacement Project in this test period. AltaLink is directed to remove its forecast capital expenditures of \$5.11 million in 2022 and \$7.27 million in 2023 for the ERP Program and \$1.50 million in 2022 and \$6.00 million in 2023 for the EAM Replacement Project in its compliance filing. .... paragraph 562
40. In its compliance filing to this decision, in addition to providing information on how the Commission’s directions on each of these five projects affect AltaLink’s revenue requirement, AltaLink is further required to explain how these reductions will affect AltaLink’s associated IT labour expenditure forecasts. Accordingly, the Commission directs AltaLink to identify the labour expenditure adjustments associated with the reductions for each of the projects listed above, and to provide detailed calculations and explanations for those labour expenditure adjustments, in its compliance filing. As part of its response to this direction, AltaLink must clearly identify any labour assumptions (e.g., salaries per FTE, inflation factors, etc.) that were used to calculate the labour expenditure adjustments, and explain the basis for those assumptions. This information must be disaggregated by internal and contracted labour. For the internal labour component, AltaLink must also identify any impacts to its capital FTEs. .... paragraph 571
41. Furthermore, the Commission directs AltaLink not to offset the impact of a reduction to IT capital FTEs with an increase in contractor costs and/or O&M FTEs, and vice-versa. .... paragraph 572
42. To facilitate the efficient assessment of whether savings from projects undertaken in this test period are appropriately reflected in AltaLink’s revenue requirement in future test periods, the Commission requires AltaLink to file additional information as part of its compliance filing to this application. AltaLink is therefore directed to complete the following table that has been prepared by the Commission. Within this table, AltaLink should include all projects (including non-IT projects) approved by the Commission in this GTA for which AltaLink expects to realize cost savings. Sample data has been included in the table below for demonstration purposes. .... paragraph 580
43. In its next GTA, AltaLink is directed to reconcile the table that it provides in its compliance filing in response to the direction in the previous paragraph with information regarding the projects AltaLink actually completed, and to explain whether the estimated savings were realized in 2022 and 2023 (if applicable), and what savings are expected to

- be realized on a go-forward basis. AltaLink should include an analysis showing how the savings have been incorporated into its forecast revenue requirement. AltaLink may wish to refer to UCA-AUC-2021SEP24-006(i)-(iv) for guidance on how this analysis can be completed. .... paragraph 581
44. Accordingly, the Commission directs AltaLink to remove its forecast capital expenditures of \$5.4 million in 2022 and \$53.1 million in 2023 for the CETO Project in its compliance filing. .... paragraph 595
45. Accordingly, the Commission directs AltaLink to remove its forecast capital expenditures of \$59.2 million in 2022 and \$40.6 million in 2023 for the Nilrem to Vermilion Project in its compliance filing. .... paragraph 599
46. Accordingly, the Commission directs AltaLink to remove its forecast capital expenditures of \$21.4 million for 2022 and \$31.0 million for 2023 for the Provost to Edgerton Project in its compliance filing. .... paragraph 604
47. The Commission directs AltaLink to remove its forecast capital expenditures of \$1.7 million in each of 2022 and 2023 for the Chapel Rock to Pincher Creek Project in its compliance filing. .... paragraph 607
48. In its compliance filing to this decision, AltaLink is directed to incorporate its currently approved life-curve depreciation parameters for USA 350.10 (56-R4), USA 354.01 (67-R2.5), USA 355.01 (67-R2) and USA 356.00 (65-R4), and to reflect the impact of doing so in its depreciation rate, depreciation expense and revenue requirement calculations. .... paragraph 641
49. In its compliance filing to this decision, AltaLink is directed to incorporate its currently approved life-curve depreciation parameters for USA 358.00 (50-R5). .... paragraph 645
50. The Commission also approves the method by which AltaLink proposes to update its amortization rate for customer contributions as being determined by the weighted average amortization rate of its related capital assets. However, the Commission directs AltaLink to finalize the contribution amortization rate in its compliance filing to this decision by incorporating the Commission’s findings on AltaLink’s life-curve proposals for its depreciation study accounts. .... paragraph 649
51. In the Commission’s view, the approval of the SAP accelerated amortization rate is dependent on the Commission’s decision on AltaLink’s proposal to replace SAP with Oracle. In Section 10.3.9 of this decision, the Commission denied the forecast costs associated with AltaLink’s ERP Replacement Program in this test period. For this reason, the Commission finds it is not necessary for AltaLink to alter its SAP amortization rate from 10 per cent at this time. The Commission directs AltaLink to maintain its currently approved amortization rate of 10 per cent for its SAP assets in its compliance filing, and to reflect the impact of doing so in its depreciation expense and revenue requirement calculations. .... paragraph 654
52. Accordingly, the Commission directs AltaLink in its compliance filing to remove from its 2022 opening net salvage reserve account its 2019-2020 actual, and 2021 forecast net salvage costs totalling \$96.4 million (excluding each year’s net salvage costs pertaining to its direct assigned projects) and flow the effect of doing so through its revenue requirement calculations for the years 2022-2023. If AltaLink’s actual 2021 net salvage

- costs are known at the time of its compliance filing, AltaLink is directed to remove those costs..... paragraph 686
53. Based on the foregoing, the Commission directs AltaLink to revert to its previous lead/lag calculation methodology for its equity distributions made on a quarterly basis and to reflect the attendant impact on its necessary working capital forecast and revenue requirement, in its compliance filing to this decision. .... paragraph 697
54. The Commission approved placeholder treatment of costs related to these litigation matters in Decision 24681-D01-2020 and in Decision 25913-D01-2021. In its application, AltaLink identified that trailing costs were incurred in 2020 on both matters. Given the ongoing litigation, the Commission approves the requested placeholder treatment. Once this litigation has concluded, the Commission directs AltaLink to submit a request for final approval of these costs, including any actual trailing costs, in its next applicable DACDA proceeding..... paragraph 728
55. On October 15, 2021, the Court of Appeal released its judgment in *AltaLink Management Ltd. v Alberta (Utilities Commission)*, 2021 ABCA 342. There, the Court of Appeal allowed AltaLink’s appeal of Decision 22612-D01-2018, and varied Decision 22612-D01-2018 to allow PiikaniLink and KainaiLink to include incremental hearing and audit costs in their respective tariff applications. Accordingly, the Commission directs AltaLink to include the incremental audit and hearing costs disallowed in Decision 22612-D01-2018 as part of its revised MFR schedules and respective revenue requirements in the compliance filing to this decision. .... paragraph 732
56. As noted in Section 12 of this decision, the Commission did not accept all changes to depreciation parameters proposed by AltaLink in its 2019 Depreciation Study. Therefore, the depreciation expense calculations including the annual amortization of reserve differences amount, for each of PiikaniLink and KainaiLink are required to be revised to reflect the Commission’s findings in Section 12. Accordingly, the Commission directs AltaLink in its compliance filing to this decision to incorporate all necessary adjustments to the depreciation expense amounts included in the revised MFR schedules and respective revenue requirements of PiikaniLink and KainaiLink..... paragraph 734

## Appendix 4 – Significant process steps

[\(return to text\)](#)

Date	Description
April 30, 2021	AltaLink files 2022-2023 GTAs for AltaLink, PLP and KLP; and a 2020 AltaLink DACDA reconciliation application.
May 3, 2021	The Commission issues a notice of application establishing May 17, 2021, as the deadline for interested parties to file a SIP.
May 17, 2021	The CCA, IPCAA, ADC, the UCA and the AESO filed SIPs in this proceeding, as interveners, by the deadline.
May 19, 2021	The Commission establishes the process schedule for this proceeding, including directing that the parties proceed to a mediated settlement process.
May 31, 2021	Mediation commences.
June 25, 2021	Intervenors issue Round 1 IRs to AltaLink.
July 9, 2021	AltaLink responds to IRs issued by intervenors.
July 30, 2021	Mediation concludes.
August 3, 2021	AltaLink informs the Commission that the mediation concluded without a settlement. All parties provide submissions on the issues list.
August 6, 2021	The CCA, IPCAA, ADC and the UCA file motions for further and better responses to IRs.
August 11, 2021	AltaLink responds to the motions for further and better responses to IRs.
August 12, 2021	The CCA, IPCAA, ADC and the UCA reply to AltaLink’s motion response.
August 19, 2021	The Commission rules on the motions for further and better responses to IRs, compelling AltaLink to respond by September 3, 2021.
August 20, 2021	The Commission publishes the issues list and issues IRs to AltaLink.
September 3, 2021	AltaLink responds to the Commission’s IRs and also provides further and better IR responses pursuant to the Commission’s ruling on the motion for further and better responses to IRs.
September 13, 2021	Intervenors file evidence. The CCA files a motion to file some of its evidence in an unredacted form.
September 16, 2021	The Commission rules on the CCA motion to file evidence in an unredacted form.
September 24, 2021	AltaLink and the Commission file IRs on intervener evidence.
October 1, 2021	Intervenors file IR responses.
October 12, 2021	AltaLink files rebuttal evidence.
October 15, 2021	All parties submit oral argument summaries.
October 18-19, 2021	Virtual hearing – oral argument and reply argument.
October 21, 2021	Submission of CCA undertaking, and close of record for the proceeding.

## Appendix 5 – Summary of Commission directions addressed in application

[\(return to text\)](#)

This section is provided for the convenience of readers and outlines the directions from:

- Decision 2005-082 (AltaLink 2004-2006 transmission GTA);
- Decision 2007-012 (AltaLink 2007-2008 transmission GTA);
- Decision 2011-453 (AltaLink 2011-2013 transmission GTA);
- Decision 2012-221 (AltaLink 2011-2013 transmission GTA compliance filing);
- Decision 2013-407 (AltaLink 2013-2014 transmission GTA);
- Decision 2013-417 (Utility Asset Disposition);
- Decision 2014-258 (AltaLink’s refiling Pursuant to Decision 2013-407 and Decision 2013-459);
- Decision 3524-D01-2016 (AltaLink 2015-2016 transmission GTA);
- Decision 3585-D03-2016 (AltaLink 2012-2013 DACDA reconciliation application);
- Decision 21827-D01-2016 (AltaLink 2015-2016 transmission GTA compliance filing);
- Decision 22556-D01-2017 (AltaLink and the City of Medicine Hat for the sale and transfer of a portion of transmission line 675L assets);
- Decision 22570-D01-2018 (2018 generic cost of capital);
- Decision 23848-D01-2020 (AltaLink 2019-2021 transmission GTA);
- Decision 25627-D01-2020 (AltaLink 2019-2021 transmission GTA compliance filing); and Decision 25870-D01-2020 (AltaLink Stage 2 review and variance of Decision 23848-D01-2020);
- Decision 25913-D01-2021 (2019 DACDA reconciliation application).

With one exception (Direction 1(iv) from Decision 25870-D01-2020), the Commission finds that the directions have been satisfied. In the event of any difference between the directions in this section and those in the main body of the decisions referenced, the wording in the main body of those decisions shall prevail.

### Decision 2005-082

The Board directs the Applicants to incorporate into the preparation of future GTA refiling applications the learning gained in this Refiling about the type and level of information needed by the Board and interveners to properly assess compliance with Board directions. ....PDF page 21

### Decision 2007-012

The Board approves AltaLink’s proposal to in-source a portion of its small project direct assign project work as described at pp. 6-49 through 6-51 of the Application. However, the Board directs that any future proposals to insource additional direct assign project EPCM work be fully supported by a business case to be brought before the Board in the appropriate GTAs. ....PDF page 106

### Decision 2011-453

40. Notwithstanding the limited interest of interveners, to maintain continuity, the Commission directs AltaLink to continue to collect statistics and report upon its performance against generally accepted transmission industry KPIs [key performance indicators]. .....paragraph 1118

### Decision 2012-221

7. For future GTAs, AltaLink is directed to provide evidence that forecast direct assign project capital expenditures are reasonable and, in particular, that projected in-service dates are based on reasonable targets that reflect AltaLink’s historical experience in executing direct assign projects. To assist AltaLink in complying with this direction, the Commission has set out directions for revised minimum filing requirements to accompany future AltaLink direct assign capital expenditure forecasts in future GTAs in the next section as an initial step to address this concern. The Commission may consider directing additional measures during the course of AltaLink’s next GTA proceeding should these directions be insufficient. ....paragraph 164
8. Accordingly, the Commission directs AltaLink to provide additional information in future GTAs to facilitate greater scrutiny of its capital expenditure forecasts as follows:
  - (1) AltaLink does not always use the same name for projects at different points in its GTA. For example, in Section 10.2 of the GTA, the names for a number of projects are different than the names used in schedules 3-2.2011(iii) and 3-2.2012(iii) of its GTA financial schedules. For future GTAs, AltaLink is directed to ensure that consistent project names are used in all parts of its application.
  - (2) AltaLink has adopted the practice of aggregating several smaller projects into a single line item identified as “other” projects in its direct assign project CWIP schedules. The Commission has reviewed the disaggregation of AltaLink’s GTA and refile application “other” project capital expenditures as provided in AltaLink’s responses to information requests. The total forecast expenditures on “other” projects is significant and forecast expenditures on several individual projects assigned to the “other” category are quite large. As well, for the projects described in Section 10.2 of its GTA, the capital expenditure forecasts for subprojects that appear to comprise AltaLink’s Section 10.2 estimate are not shown in the main breakdown in schedules 3-2.2011(iii) and 3-2.2012(iii) and only show up as part of the detail AltaLink provided on the “other” projects noted in those schedules in response to information requests. The attribution portions of project estimates into both the main section and other category of AltaLink’s direct assign project CWIP schedules impair the Commission’s ability to scrutinize AltaLink’s estimates. The Commission directs AltaLink to show the forecast detail for all projects identified at the time of its GTA within its GTA direct assign project CWIP schedules (i.e., no aggregation of projects into an “other” line item) for its next GTA.

- (3) The Commission’s review of direct assign project capital expenditure forecasts in the current proceeding has also brought to light a concern with the subdivision and subsequent reallocation of forecast or actual expenditures into new subprojects. In the event that AltaLink has changed project identifier numbers (e.g., Yellowhead=D.0030) that it has reported in the current proceeding when it files its next GTA, AltaLink is directed to provide a full account of all such changes in its next GTA.
- (4) The Commission directs AltaLink to provide the application number and proceeding ID number for the need identification document (NID) or permit and licence (P&L) applications related to the project, if applicable. In addition, for any projects for which no NID application has been filed, AltaLink is directed to provide its current estimates as to when it expects a NID application to be filed.  
.....paragraph 169

N/A The position advanced by AltaLink in the refiling, specifically that the CRA would not accept this deduction, was also advanced and rejected by the Commission as unsupported in Decision 2011-453. AltaLink has not provided any new or additional evidence that the Commission’s finding is in contravention of the Income Tax Act. Therefore, the Commission denies AltaLink’s proposal to treat the \$14.6 million and \$16.7 million amounts as placeholders and add the amounts of \$1.5 million and \$1.7 million for 2011 and 2012 respectively to a renamed Rainbow and Capitalized G&A Tax Reserve account. Should the CRA at some point disallow the tax treatment, the Commission will consider the impact of any such disallowance in the next AltaLink GTA following the disallowance. ....paragraph 131

N/A The position advanced by AltaLink in the refiling, specifically that the CRA would not accept this deduction, was also advanced and rejected by the Commission as unsupported in Decision 2011-453. AltaLink has not provided any new or additional evidence that the Commission’s finding is in contravention of the Income Tax Act. Therefore, the Commission denies AltaLink’s proposal to treat the \$14.6 million and \$16.7 million amounts as placeholders and add the amounts of \$1.5 million and \$1.7 million for 2011 and 2012 respectively to a renamed Rainbow and Capitalized G&A Tax Reserve account. Should the CRA at some point disallow the tax treatment, the Commission will consider the impact of any such disallowance in the next AltaLink GTA following the disallowance. ....paragraph 131

**Decision 2013-407**

- 18. AltaLink is further directed to file copies of all SRB [Surface Rights Board] decisions issued between the date of this decision and the filing of the next GTA in respect of right-of-way payments involving all electric transmission utilities in Alberta. ....paragraph 249
- 23. The Commission acknowledges that the timing of third-party activities can be difficult to forecast. However, the Commission is concerned that there appears to be a consistent trend of under-forecasting in this category. The Commission directs AltaLink to explain in detail any future variances in this category. ....paragraph 292

38. This information should continue to be available to parties in future depreciation studies, and the Commission directs AltaLink to ensure that, in addition to the years 2010 and 2011 being restated for the missing information, subsequent years be treated in a similar manner. ....paragraph 956

**Decision 2013-417**

2. In order to give effect to the court’s guidance that the “rate-regulation process allows and compels the Commission to decide what is in the rate base, i.e. what assets (still) are relevant utility investment on which the rates should give the company a return,” the Commission directs each of the utilities to review its rate base and confirm in its next revenue requirement filing that all assets in rate base continue to be used or required to be used (presently used, reasonably used or likely to be used in the future) to provide utility services. Accordingly, the utilities are required to confirm that there is no surplus land in rate base and that there are no depreciable assets in rate base which should be treated as extraordinary retirements and removed because they are obsolete property, property to be abandoned, overdeveloped property and more facilities than necessary for future needs, property used for non-utility purposes, property that should be removed because of circumstances including unusual casualties (fire, storm, flood, etc.), sudden and complete obsolescence, or un-expected and permanent shutdown of an entire operating assembly or plant. As stated above, these types of assets must be retired (removed from rate base) and moved to a non-utility account because they have become no longer used or required to be used as the result of causes that were not reasonably assumed to have been anticipated or contemplated in prior depreciation or amortization provisions. Each utility will also describe those assets that have been removed from rate base as a result of this exercise. At this time, the Commission will not require the utilities to make additional filings to verify the continued operational purpose of utility assets. [footnotes removed] .....paragraph 327

**Decision 2014-258**

2. No interested parties specifically commented on AltaLink’s response to Directive 1 in argument or reply. This notwithstanding, the Commission makes the following additional findings with respect to AltaLink’s response to Directive 1. First, the Commission finds that the breakdown of full-time equivalents (FTEs) by position by cost centre and showing the operating and maintenance (O&M) versus capital split applied for each position indicated in Attachment B-01 of Section B of the refiling application complies in full with Directive 1. Second, the Commission finds that the information provided in Attachment B-01 would be of significant assistance in processing future AltaLink GTAs. Accordingly, the Commission directs AltaLink to provide a breakdown of individual job classifications and FTEs, disaggregated by cost centre for each applied-for test year in AltaLink’s next GTA. ....paragraph 22

**Decision 3524-D01-2016**

1. The Commission continues to find the information provided in Appendix 1-C of the application to be of assistance and directs AltaLink to continue to provide this information in future GTAs ..... paragraph 33

20. With respect to the UCA’s request that a detailed analysis of AltaLink’s computer software account to be filed prior to its next GTA, the Commission finds that information of the type and format provided in response to IRs was useful and would be sufficient for the analytical purposes identified by the UCA. On that basis, AltaLink is directed in its future GTA’s to file with its depreciation study, the historical computer software information found in the referenced IR response. .... paragraph 381
21. The Commission finds that the currently approved amortization periods for the three SAP and non-SAP subaccounts within Account 391.2 – computer software remain reasonable estimates and denies the UCA’s request for lengthened service lives. However, the confusion discussed above has arisen, in part, from AltaLink’s irreconcilable evidence regarding the composition of Account 391.2 – computer software – non-SAP and from the inconsistent naming convention used by Mr. Kennedy and AltaLink for its evidence related to Account 391.2. AltaLink is directed in its compliance filing and future filings, to apply consistency in this regard for all its transmission and general accounts, and for the purpose of clarity, to indicate where applicable, the existence of subaccounts on a stand-alone basis and by account number and name. .... paragraph 382

**Decision 3585-D03-2016**

14. AltaLink, in response to an information request, stated that DAIC [directly attributable, indirectly charged] studies are performed every two years in conjunction with AltaLink’s GTA. The Commission directs AltaLink to file the DAIC study and underlying data in its 2017-2018 GTA filing. ....paragraph 331

**Decision 21827-D01-2016**

1. The Commission agrees with the CCA that if more detail is presented regarding revenue offsets, there is a better understanding of the transactions included in revenue offsets and a better ability to test the reasonableness of those transactions. Moreover, the Commission finds the information detailed in Table 1 above to be helpful. Therefore, the Commission directs AltaLink, with respect to revenue offsets, in future GTAs, to provide a level of detail equal to or greater than that provided in Table 1 above. ....paragraph 60

**Decision 22556-D01-2017**

- N/A Pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 22556-A001 and grants the City the approval set out in Appendix 1 – Transmission Line Permit and Licence 22556-D02-2017 – August 9, 2017, to construct and operate transmission line MH-15L. AltaLink is directed to reflect the removal of the subject assets in any compliance filing to its 2017-2018 general tariff application or, if no compliance filing is required, AltaLink shall reflect the removal of the subject assets in its next tariff application ..... paragraph 36

**Decision 22570-D01-2018**

1. The Commission finds that because of the finite life of income tax loss carry forwards, as opposed to the indefinite life of deductions such as capital cost allowance, the

conservative practice would be for utilities not to forecast income tax losses, but instead, forecast the use of discretionary deductions such as capital cost allowance in order to reduce forecast taxable income to zero. Accordingly, the Commission directs the utilities, when forecasting income taxes, to only claim allowable deductions that will reduce the taxable income to a maximum of zero. ....paragraph 99

**Decision 23848-D01-2020**

1. Given the above, the Commission directs AltaLink to file, at the time of AltaLink’s next GTA, an explanation as to why AltaLink treated all identified HRFAs the same in terms of risk, and how AltaLink is prioritizing asset deficiencies in a given HRFA. .... paragraph 128
  
4. AltaLink’s forecast costs for the entire targeted component and structure replacements in the HRFAs program will be reviewed as part of AltaLink’s next opening rate base when actuals are known and can be assessed for prudence. To facilitate the Commission’s review in AltaLink’s next GTA, AltaLink is directed to submit information showing that it has completed the targeted program in a cost effective manner. Some examples of the information that AltaLink could provide at the time of its next GTA, as part of this assessment include, but are not limited to: age and condition of components and structures to be replaced, average service life of these assets, information on criteria for replacement, evidence that assets are not being prematurely retired and explanations of any differences between forecast costs and actual costs of these replacements. .... paragraph 160
  
7. AltaLink’s forecast costs for the line rebuilds program of the WMP will be reviewed as part of AltaLink’s next opening rate base when actuals are known and can be assessed for prudence. To facilitate the Commission’s review in AltaLink’s next GTA, the Commission directs AltaLink to provide information in that proceeding detailing project descriptions, actual unit costs and other relevant information necessary to support the timing, level, scope and costs of the individual line rebuild projects. .... paragraph 174
  
9. Additionally, AltaLink’s forecast costs for the incremental \$20 million LCM [line clearance mitigation] expenditure will be reviewed as part of AltaLink’s next opening rate base, when actuals are known and can be assessed for reasonableness. Accordingly, to facilitate this review, AltaLink is directed to file a comprehensive business case to support its incremental LCM expenditures, at the time of its next GTA..... paragraph 192
  
10. Accordingly, the Commission directs AltaLink, at the time of its next general tariff application and as part of its Line Components CRU Business Case, to explain in more detail the nature and extent of its collaboration with the AESO on line rating adjustments. This includes both temporary de-rates, re-rates, and de-energizations. In particular, AltaLink should include a step-by-step example that explains this collaborative process, a list of factors that inform the AESO’s and AltaLink’s decisions to adjust the line rating of any particular transmission line, and references to all relevant standards, codes and rules with which AltaLink and the AESO are obligated to comply, in respect to this collaborative process. Likewise, AltaLink should clearly identify and delineate the

- responsibilities of the AESO and AltaLink, respectively, with regard to the line rating adjustment process and the associated determinations of safe operating limits for transmission lines. Further, AltaLink should include an explanation of whether the AESO’s N-0, N-1, N-2 and N-1-1 contingencies factor into line rating adjustment discussions, and how system requirements and transmission line design history inform the AESO’s and AltaLink’s decision to adjust maximum thermal ratings, and maximum allowable load flows. .... paragraph 231
11. Similarly, the Commission considers that it would be helpful to have the AESO’s views regarding its role in this collaborative process, specifically with regard to how the AESO exercises its discretion in permitting de-rates, re-rates, de-energizations and alternative mitigation measures. Accordingly, the Commission directs AltaLink to request the AESO to file a submission explaining, from the AESO’s perspective, how the line rating adjustment process is carried out between itself and AltaLink, how the AESO determines a posted line rating, how the AESO makes its determination to adjust the line rating of any particular transmission line, what factors are considered therein by the AESO, and any other information that the AESO considers may be of assistance in the circumstances. AltaLink is directed to file the AESO’s response at the time of its next general tariff application and as part of its Line Components CRU Business Case.....paragraph 232
12. Accordingly, the Commission directs AltaLink, at the time of its next general tariff application, to file a detailed comparison of LiDAR survey unit costs between the incremental approach and the new system-wide approach, as part of its Line Components CRU Business Case. The unit costs must be broken down into their respective component parts, and AltaLink must clearly demonstrate, using the unit cost component breakdown, how the new system-wide survey has reduced LiDAR unit costs, and the source of this reduction. ....paragraph 238
13. AltaLink is further directed to provide an analysis that demonstrates why the system-wide approach to LiDAR and engineering assessments, which seeks to mitigate line clearance deficiencies across all 13,385 km of AltaLink’s transmission system within this test period, is more effective than the incremental approach, where AltaLink historically surveyed and assessed approximately 1,100 km of its system per year. Specifically, AltaLink is to explain, with supporting analyses and calculations, how the new system wide approach to LiDAR surveys and engineering assessments is a more effective tool to prioritize and mitigate risks across AltaLink’s entire system, over multiple years, while balancing both LiDAR unit costs and overall LCM program costs. AltaLink should also address how the new system-wide approach facilitates more effective coordination and prioritization of resources across AltaLink’s system, to ensure that potential public safety and system reliability risks are mitigated, while costs are minimized. ....paragraph 239
15. Additionally, AltaLink’s forecast costs for the incremental \$13 million LCM expenditure approved in this decision will be reviewed when determining AltaLink’s next opening rate base, when actuals are known and can be assessed for prudence, by which time AltaLink will have had a chance to prepare any additional information or analyses that the Commission considers necessary to assess the prudence of the actual LCM spend and any subsequent forecast. Accordingly, AltaLink is directed, at the time of its next general tariff application, to file a comprehensive business case that is informed by fully

completed engineering assessments of AltaLink's entire system, and includes the following:

- (a) A root cause analysis to explain why AltaLink's engineering assessments are identifying an historic number of deficiencies across its transmission system.
- (b) A line-by-line analysis that considers site and transmission-line-specific factors (e.g., region, location, terrain, expected damages from clearance issues, likelihood of wire contact with the public or other objects or structures, the associated risk of public safety or system reliability issues materializing, and any additional public safety or system reliability concerns), along with all the relevant standards, codes and rules, to identify whether LCM work was necessary for any particular transmission line. AltaLink should identify why a transmission line was deficient. If AltaLink identified the need to conduct LCM work on a particular transmission line, it should provide a list of all the factors that were considered to arrive at that decision, and explain why the LCM work was necessary. Furthermore, AltaLink should provide a general overview of the total number of transmission line spans that were mitigated, how AltaLink determined which transmission line spans should be prioritized within this current test period, and why LCM work on these transmission line spans was necessary.
- (c) Line-specific costs should be provided, explaining how AltaLink achieved the lowest cost LCM strategy for that particular transmission line. Likewise, AltaLink should provide the average cost per transmission line span, for each transmission line, and explain how this average unit cost was minimized. Furthermore, AltaLink is to provide a list of all alternative line clearance mitigation strategies that it considered, for each transmission line, with explanations, relevant analyses, and calculations that support AltaLink's chosen alternative. With regard to de-rates, AltaLink is to address how it determined the appropriate de-rate period for any particular transmission line, and why other alternatives such as physical barriers were not viable or cost effective/efficient. Furthermore, for circuit-to-circuit line clearance deficiencies, AltaLink is to address which cost solutions were considered between AltaLink and the DFOs.
- (d) An explanation that elaborates further on the extent and nature of AltaLink's collaboration with DFOs and third parties. Furthermore, AltaLink is to address, with references to any relevant industry standards, codes, rules, and DFO contracts, why DFOs are not responsible, typically, for any circuit-to-circuit line clearance deficiencies.
- (e) An explanation detailing the nature and extent of AltaLink's collaboration with the AESO, with respect to prioritizing LCM work. Specifically, AltaLink is to address ISO Rule 304.6, explaining how AltaLink develops a plan "to restore the transmission facility to its previous limit," what factors are considered therein, and the nature and extent of the AESO's involvement in this process. Likewise, AltaLink is to address when it would consider option (b) of ISO Rule 304.6 2(2). Furthermore, AltaLink is to identify and delineate clearly the responsibilities and

authority of the AESO and AltaLink, with regard to choosing a prioritization scheme for mitigating line clearance deficiencies.

- (f) Similarly, the Commission considers that it would be helpful to have the AESO’s view regarding its role in the development of an appropriate prioritization scheme for LCM work. Accordingly, the Commission directs AltaLink to request the AESO to file a submission explaining, in the AESO’s view, how the prioritization process is carried out between itself and AltaLink, how the AESO determines which transmission lines should be prioritized for LCM repair work, how the AESO ranks the different lines that require LCM work, what factors are considered therein by the AESO, and any other information that the AESO considers may be of assistance in the circumstances. Additionally, for all transmission lines that require LCM work in this current test period, the Commission directs AltaLink to request the AESO to file a submission that identifies which lines should, in the AESO’s view, be prioritized for LCM repair work and to provide explanations as to why those lines should be prioritized, and to provide a ranking of these lines based on their priority. AltaLink is directed to file the AESO’s response at the time of its next general tariff application and as part of its Line Components CRU Business Case
- (g) A narrative with supporting examples, calculations and analyses, explaining how AltaLink’s prioritization scheme for LCM work has effectively, and reasonably, managed and balanced LCM expenditures with clearance deficiency risks and system performance. This narrative is to be provided on both a line-by-line and system-wide basis.

.....paragraph 302

- 16. Accordingly, the Commission directs AltaLink, at the time of its next general tariff application and as part of its Line Components CRU Business Case, to submit an analysis that investigates how AltaLink may alter its LCM prioritization methodology going forward. AltaLink should specifically refer to ATCO Electric’s prioritization methodology, as filed by the CCA in this proceeding and identified in the prioritization methodology discussion above. If ATCO Electric’s approach is not compatible with, or appropriate for, AltaLink’s transmission system, AltaLink must provide an explanation as to why that is the case. The Commission notes that this direction is strictly in regard to future AltaLink LCM programs, and not the LCM program subject to this test period.

.....paragraph 304

- 22. Nonetheless, the Commission remains interested in understanding AltaLink’s practice of capitalizing excess materials beyond the instance of the WATL [Western Alberta Transmission Line] example. AltaLink is directed at the time of its next GTA, to provide an update to its capitalization policy detailing its intended practice in this regard and to include a provision for a threshold, or materiality test, by which AltaLink proposes to determine what constitutes, as a construction cost, a “proper allowance” for unused materials and supplies. ....paragraph 525

## Decision 25627-D01-2020

Paragraph 20: While the Commission is satisfied that AltaLink has complied with directions 2 and 3 provided in Decision 23848-D01-2020, and acknowledges that AltaLink is not adjusting its original forecast of \$24.6 million for the Targeted Program in this 2019-2021 test period, the Commission notes that the additional costs that AltaLink requires to complete work related to the Targeted Program beyond this test period (the remaining \$8.3 million) are not under consideration in this proceeding. If AltaLink requires additional capital expenditures to complete this work beyond the current test period, it must apply for the associated capital amounts as part of its next GTA.

1. Notwithstanding, the Commission found the following statement made by AltaLink concerning:

The most impactful change to Table 3 was realized in the Calgary forest region and is primarily driven by an increase to 388 total notifications (from 170 notifications) in the Calgary Forest Region. **The reason is that the line rebuilds for 113L, 150L, 56L and portions of 54L have been delayed because of access and permitting requirements. These lines are part of the regular CRU (capital replacement and upgrades) rebuild program. As a result of the delay, the fire related notifications on these lines have now been included as part of this Wildfire Mitigation Targeted Component and Structures Replacements in HRFAs program** to ensure high priority risk areas are addressed in a prioritized manner. (emphasis added)

AltaLink's CRU program was part of its 2019-2021 GTA negotiated settlement agreement (NSA). It is the Commission's understanding that AltaLink intends to address the deficiencies identified in the quote above and originally identified in its NSA, in the Targeted Program of the Wildfire Mitigation Plan. It is not clear to the Commission whether some of the \$8.3 million in costs associated with the remaining work to be completed beyond this 2019-2021 test period, results from this proposed shift in program. It is also not clear whether AltaLink plans to apply a corresponding reduction to its CRU costs, also agreed to in the NSA, as a result of this change. Therefore, AltaLink is directed to clarify in its next GTA whether it intends to apply for additional capital expenditures to complete work related to the Targeted Program. .... paragraph 21

## Decision 25870-D01-2020

1. As stated earlier, the Stage 2 panel finds that AltaLink's proposed net salvage method is, on balance, just and reasonable in the circumstances. The Stage 2 panel provides the following clarifications with respect to AltaLink's proposed net salvage method implementation, tracking and ongoing operation.
  - (i) AltaLink submitted that its proposed net salvage method was intended to be phased in over a reasonable period of time in order to maintain an 11.1 per cent FFO/Debt (floor) ratio, which would be sufficient to protect its A credit rating and keep its borrowing costs at a level commensurate with the public interest.

The Stage 2 panel accepts, at this time, that the measure by which AltaLink will determine the amount of net salvage expense to recover through depreciation expense during the period of transition is linked specifically to an FFO/Debt of 11.1 per cent for the test years. However, the Stage 2 panel directs that this measure is subject to testing in future GTAs in terms of both substance (where a different FFO/Debt per cent may be tested) and form (where an alternative measure than FFO/Debt may be examined).

- (ii) The Stage 2 panel directs that AltaLink will maintain sufficient information to revert to its traditional net salvage method at any point in the future. The information to be maintained will include ongoing tracking, by uniform system of account, of aged retirements and costs of removal, whether recorded to the net salvage reserve account during the period of transition, capitalized or recorded in association with a terminal asset retirement. The requirement to maintain this information considers the implications of AltaLink’s statement that a return to the traditional method of salvage would be on a prospective basis, where the capitalization of historical salvage amounts would be unchanged.

The Commission finds that the ongoing tracking of this information is required because, should AltaLink in the future, request or be directed to return to its traditional net salvage method on a prospective basis, the associated net salvage depreciation rate to be reinstated would be applied to only the capital cost of the new replacement assets, and AltaLink would be prevented specifically from applying a net salvage depreciation rate to the costs of removal capitalized during the time its proposed net salvage method was in place. Therefore, in each future GTA or DACDA, AltaLink is directed to report by uniform system of account, both the forecast and actual costs of removal that have been recorded to the net salvage reserve account during the period of transition, capitalized or recorded in association with a terminal asset retirement.

- (iii) The Stage 2 panel directs that in the event that the balance in the net salvage reserve account becomes insufficient to meet the anticipated costs of removal associated with terminal asset retirements, AltaLink is to propose the manner and period of collection of those costs in that GTA or DACDA. This is notwithstanding AltaLink’s statement that terminal retirements, specifically, “will be subject to a high degree of forecast accuracy,” they are nonetheless relatively rare in AltaLink’s experience, and therefore little historical information exists currently. AltaLink is directed to provide a continuity schedule for its net salvage reserve account in each future GTA on both a forecast and actual basis.
- (iv) The Stage 2 panel directs that in each future GTA or DACDA, AltaLink will provide sufficiently detailed information for the purposes of testing the prudence of costs of removal whether recorded to the net salvage reserve account during the period of transition, capitalized to the cost of a replacement asset or recorded in association with a terminal asset retirement. ....paragraph 36

2. In view of the above, the Stage 2 panel varies the majority hearing panel’s findings in Section 4.5.1 of Decision 23848-D01-2020. AltaLink is directed to implement its

proposed net salvage method commencing with the year 2019, with an effective date, for tariff purposes, of December 1, 2020. ....paragraph 37

**Decision 25913-D01-2021**

2. However, to assist the Commission with review of affiliate or non-arm's-length transactions, the Commission directs AltaLink to include, as part of all future DACDA and GTA applications, a table which provides the following summary information, by test year:
- (i) Affiliate or non-arm's-length costs included in the application, by project or cost category, a description of the types of cost or service involved by originating year, or
  - (ii) A confirmation that no affiliate or non-arm's-length transactions are included in that application.
- .....paragraph 31

## Appendix 6 –WMP performance metrics

(return to text)

WMP Program area	Metric	Definition	2019	2020	2021 YTD (July 30, 2021)	Assessment
<b>Wildfire Incidents</b>	<b>Total number of fire incidents</b>	<b>The total sum of Class I/II/III fire incidents</b>	11	9	8	Fire incidents vary in quantity and severity based on annual weather conditions.
	Number of Class I fire incidents	Ignition of a fire on an AltaLink structure; or work activities; spreading to another fuel source such as surrounding vegetation.	9	7	3	Current data is insufficient to indicate any immediate trends.
	Number of Class II fire incidents	Ignition of a fire on an AltaLink structure; or work activities; spreading to another fuel source; requiring intervention by a third party to extinguish.	2	2	5	Total incidents are generally consistent year over year in the past three years.
	Number of Class III fire incidents	Ignition of a fire on an AltaLink structure; or work activities; spreading to another fuel source; generating a large-scale fire with significant damage to property, human life, etc.	0	0	0	
	Number of wires down events; and	Incidents where an AltaLink owned conductor contacts the ground.	6	2	1	AltaLink has seen a decreasing trend.
	Number of trees fallen on lines	Incidents where trees fall onto AltaLink transmission assets contacting the conductor	3	1	2	Recent trends indicate a moderate decreasing trend.
<b>Operating Practices</b>	Number of re-closers disabled actions;	Instances where operating actions have been taken to disable automatic reclosers due to elevated fire risk as defined in the WMP.	0	22	102	Trends appear to be increasing due to both increased frequency of fire risks and improved access to tools and weather assessments providing enhanced awareness of wildfire risks. This has led to increased frequency of operator actions to reduce fire ignition risks.
	Number of PSPS events triggered and duration;	AltaLink initiated Public Safety Power Shut-Off (PSPS) events, based on criteria in the WMP.	0	0	0	PSPS initiation targets have not be reached.
	Incremental inspections completed in HRFAs; and	Incremental line patrols completed located within HRFAs as part of the WMP.	n/a	107	127	In 2019, AltaLink carried out urgent patrols in HRFA zones but had not established the tracking indicator or completed its HRFA mapping. Since 2020, AltaLink has completed a defined patrol plan. Refer to Appendix 22, paragraph 43.

WMP Program area	Metric	Definition	2019	2020	2021 YTD (July 30, 2021)	Assessment
	Incremental units of Vegetation Management (VM) work completed in HRFAs.	Number of transmission lines with vegetation work targeted in AltaLink's HRFAs.	3	9	3	Variability year to year reflects changes in the various factors, including items such as the nature of VM identified, changes in access and terrain, and stakeholder access requirements. AltaLink has completed its forecast incremental VM each year. Refer to Appendix 22, paragraph 46
<b>Situational Awareness</b>	Number of days > xx Fire Weather Index; and	Not defined as AltaLink determined metric was duplicated.	-	-	-	The metrics for PSPS and recloser blocking actions (above) are already defined by fire weather index.
	Number of cameras or new weather stations installed.	Locations installed from business case. Refer to Appendix 22A-1.	0	0	1	Remaining camera and weather station commissioning is planned in 2021.
<b>Customer Outreach and Education</b>	Number of fire response training sessions completed;	Fire response training sessions for AltaLink Control Centre staff.	3	3	2	Since 2019, a consistent fire training frequency has been maintained.
	Number of emergency response drills completed related to wildfire mitigation;	PSPS exercises completed internally or with external stakeholders, e.g., first responders, Alberta wildfire, FortisAlberta, etc.	0	3	0	The ongoing COVID-19 pandemic has hindered the number of emergency response drills and customer outreach events. AltaLink is currently planning a drill with FortisAlberta. AltaLink is planning to increase the use of digital communication tools for wildfire drills and customer outreach in the future.
	Number of customer outreach events completed related to wildfire mitigation.	Consultation events with municipalities, stakeholder groups, customers, or public regarding PSPS implementation.	7	19	14	

## Appendix 7 – Abbreviations

Abbreviation	Name in full
AAWE	Alberta Average Weekly Earnings
AESO	Alberta Electric System Operator
AEUC	Alberta Electrical Utility Code
ARS	Alberta Reliability Standards
ASP	annual structure payments
ATCO Electric	Alberta Electric Transmission
B&M	Burns & McDonnell
BCSI	Bulk Electric System Cyber System Information
BHE	Berkshire Hathaway Energy
CBA	collective bargaining agreement
CETO project	Central East Transfer-Out Project
CIP	Critical Infrastructure Protection
CNRL	Canadian Natural Resources Limited
Concentric	Concentric Advisors, ULC
CRU program	Capital Replacement and Upgrade Program
CWIP	construction work in progress
CWRMP	Calgary Wildfire Risk Management Plan
DACDA	direct assigned capital deferral account
EMS	Energy Management System
EPCm	engineering, procurement, construction management
ERP program	Enterprise Resource Planning Replacement Program
FFO	funds from operation
Forsite	Forsite Consultants Ltd.
FTE	full-time equivalent
FWI	Fire Weather Index
G&A	general and administrative
GIC	geomagnetically induced current
GMD	geomagnetic disturbance
GOE	general operating expenses
GRA	general rate application
GTA	general tariff application
HMI	Human Machine Interface
HRFAs	high-risk fire areas
HVDC	high-voltage direct current

Abbreviation	Name in full
InterGroup	InterGroup Consultants Ltd.
ISO	Independent System Operator
IT	information technology
KainaiLink or KLP	KainaiLink Limited Partnership
LiDAR	light detection and ranging
life-curve	service life and Iowa curve
LTIP	long-term incentive pay
Mercer (Canada) Limited	Mercer
MFR	minimum filing requirement
MPC	Market Participant Choice
MU	management update
NERC	North American Electric Reliability Corporation
NID	needs identification document
NPV	net present value
O&M	operations and maintenance
OMS	outage management system
PiikaniLink or PLP	PiikaniLink Limited Partnership
PILOT	payment in lieu of taxes
RPA program	Robotic Process Automation Program
RTU	remote terminal unit
SAP	System Applications and Products in Data Processing
SCADA	supervisory control and data acquisition
SIP	statement of intent to participate
SIR	self-insurance reserve
SNC-Lavalin	SNC-Lavalin ATP Inc.
SOOM	system operations outage management
STIP	short-term incentive pay
TFO	transmission facility owner
TTDC	target total direct compensation
UAV	unmanned aerial vehicles
UUWA	United Utility Workers' Association
WMP	Wildlife Mitigation Plan
WUI	Wildland Urban Interface