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How Should We Assess Transmission Upgrades When They are Requested by the DFO?

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Decisions Commented On: (1) AUC Decision 23339-D01-2019, Alberta Electric System Operator Needs Identification Document Application AltaLink Management Ltd. Facility Applications Provost Reliability Upgrade Project, and January 22, 2019; and (2) AUC Decision 23393-D01-2019, Alberta Electric System Operator Needs Identification Document Application AltaLink Management Ltd. Facility Application Fincastle 336S Substation Upgrade, February 14, 2019.

These two decisions deal with the Alberta Utilities Commission's (AUC) assessment of a needs identification document (NID) to build new transmission in a situation where the NID was prepared on the basis of a system access service request (SASR) originating from the incumbent distribution facility owner (DFO) – in this case, FortisAlberta. Both cases triggered a dissenting opinion from AUC Vice Chair Anne Michaud. In each case the principal difference between the dissent and the majority turned on the Alberta Electric System Operator's (AESO) responsibility to assess the reasonableness of the need for system access where the impetus to prepare the NID came from the DFO. In both cases, Vice Chair Michaud takes the view that if the AESO fails to properly scrutinize the need for the DFO's SASR request then there is no public interest assessment of such a request. In both cases Vice Chair Michaud would have sent the NID back to the AESO with the suggestion "that the NID application incorporates an analysis of the need for the project that includes a weighing of the expected increase in reliability against the potential impacts of the project, having regard for the fact that the AESO is not required in all circumstances to respond to a SASR with a proposed transmission solution." (Provost Decision at para 313).

The argument that greater scrutiny may be required in the case of a NID prepared in response to a SASR request from a DFO draws on the understanding that a DFO (unlike the AESO) does not have a public interest mandate and may therefore have an incentive to overbuild to increase its rate base – unless dis-incented from doing so by the new approach to capital investment in Phase II of performance based regulation – a doubtful proposition at best. New transmission is expensive and the cumulative effects on consumer bills significant. An important element of assessing the need to upgrade existing transmission facilities is the applicable reliability standard: the higher the reliability standard the greater the capital expense. What is that standard? Who gets to set that standard and should it be the same for all that are connected to the transmission system?

While we may start with the proposition that all should be entitled to the same standard of reliability, that hunch will likely evaporate for most if we consider the costs of providing that level of reliability to a customer or a small set of customers who depend on a single transmission

line for service. In such a case, enhanced reliability may require complete (physical) duplication of the existing line. Reliability is often assessed against what is referred to as an N minus 1 event (N-1) where "N" refers to the normal operation of the transmission system and the event refers to the loss of an essential element in the delivery chain. In many cases there will be alternative routing operations that may be deployed so as to ensure continued system access, but the greater the degree of isolation of the load (or generation), the fewer are the alternatives (beyond straight duplication) available.

This post focuses on the NID aspects of the Provost Decision (and all the examples and quotations are from that decision), but the discussion below is broadly applicable to the Fincastle Substation Upgrade Decision as well. This is not the first time that these issues have been raised by an intervenor before the AUC. A similar suite of issues was raised by the Utility Consumer Advocate UCA in AUC Decision 21973-D01-2017, Chestermere 419S Substation and Balzac 391S Substation Modification, Proceeding 21973, May 26, 2017 but, so far as I know, these are the first two occasions in which these issues have provoked a reasoned dissent.

The Background Rules

The rules for the construction of new transmission are laid out in the *Electric Utilities Act*, SA 2003 c E-5.1 (*EUA*), the Transmission Regulation, Alta Reg 86/2007 (TReg) and the *Hydro and Electric Energy Act* (*HEEA*) RSA 2000 c. H-16 (*HEEA*). These rules also spell out the relative roles of the AESO, DFOs, transmission facility operators (TFOs), and that of the AUC.

The starting point is section 34 of the *EUA* which contemplates (by its description of when the AESO must prepare a NID for consideration by the AESO) the three circumstances in which additional transmission may be required:

> 34(1) When the Independent System Operator determines that an expansion or enhancement of the capability of the transmission system is or may be required to meet the needs of Alberta and is in the public interest, the Independent System Operator must prepare and submit to the Commission for approval a needs identification document that
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> (a) describes the constraint or condition affecting the operation or performance of the transmission system and indicates the means by which or the manner in which the constraint or condition could be alleviated,
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> (b) describes a need for improved efficiency of the transmission system, including means to reduce losses on the interconnected electric system, or
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> (c) describes a need to respond to requests for system access service. (emphasis added)

In sum, the three circumstances are: (1) a system constraint or condition affecting performance, (2) a need to improve efficiency, or (3) a request for system access service (SASR). System access is a defined term in the *EUA* and means "the service obtained by market participants through a connection to the transmission system, and includes (i) access to exchange electric energy and ancillary services …". A SASR may come from a variety of market participants, including new generation or new load, but in these cases the requests came from the DFO.

Section 13(1)(c) of the TReg allows the AESO to delegate to the DFO all or part of the preparation of a NID subject to any conditions the AESO considers appropriate, but the AESO is ultimately responsible for the NID.

The *EUA* also establishes the duties of TFOs and DFOs. For example, under section 35(1) the AESO may direct a TFO "to submit, for Commission approval under the *Hydro and Electric Energy Act*, a transmission facility proposal to meet the need identified" in a NID, and section 37 contemplates more systematically that

> 39(1) [A TFO] must operate and maintain the transmission facility in a manner that is consistent with the safe, reliable and economic operation of the interconnected electric system.
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> (2) Each [TFO] must, in a timely manner, assist the Independent System Operator in any manner to enable the Independent System Operator to carry out its duties, responsibilities and functions.
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> (3) Each [TFO] must
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> ‘’’’
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> (e) provide the Independent System Operator with use of the owner's transmission facility for the purpose of carrying out the Independent System Operator's duties, responsibilities and functions.

Similarly, section 105 of the *EUA* prescribes the duties of a DFO.

> 105(1) The [DFO] has the following duties:
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> (a) to provide electric distribution service that is not unduly discriminatory;
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> (b) to make decisions about building, upgrading and improving the electric distribution system for the purpose of providing safe, reliable and economic delivery of electric energy having regard to managing losses of electric energy to customers in the service area served by the electric distribution system;
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> (c) to operate and maintain the electric distribution system in a safe and reliable manner;
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> …..

DFOs also have a duty under section 14(2)(d) of the TReg to assist the AESO in "preparing and updating needs identification documents (NID)" and under section 14(2)(c) to assist in "evaluating the relative merits of transmission and distribution options."
As for the AESO, the AESO's responsibilities for the transmission system include, in addition to its duties to consider NID proposals, the duty under section 29 of the *EUA* to "provide system access service on the transmission system in a manner that gives all market participants wishing to exchange electric energy and ancillary services a reasonable opportunity to do so." (emphasis added) A "Market participant" is a defined as including both a capacity and an

energy market participant and includes on the energy side "any person that supplies, generates, transmits, distributes, trades, exchanges, purchases or sells electricity, electric energy, electricity services or ancillary services". The AESO also has the duties under section 17 of the *EUA*

> (g) to provide system access service on the transmission system and to prepare an ISO tariff;
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> (h) to direct the safe, reliable and economic operation of the interconnected electric system;
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> (i) to assess the current and future needs of market participants and plan the capability of the transmission system to meet those needs;
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> (j) to make arrangements for the expansion of and enhancement to the transmission system;

When considering a NID, section 34 of the *EUA* provides that the AUC may "subject to the regulations"

> (a) approve the needs identification document,
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> (b) refer the needs identification document back to the Independent System Operator with directions or suggestions for changes or additions, or
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> (c) refuse to approve the needs identification document.

Section 38 of the TReg provides the AUC with additional direction and in particular stipulates in paragraph (e) that the AUC must consider the AESO's

> (e) assessment of the need to be correct unless an interested person satisfies the Commission that
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> (i) the ISO's assessment of the need is technically deficient, or
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> (ii) to approve the needs identification document would not be in the public interest.

As the majority in the Provost decision notes (at para 52) this provision "creates a presumption of correctness in favour of the AESO's assessment of the need".

If the NID passes muster, the TFO must then obtain a permit to construct and a licence to operate a transmission facility, pursuant to sections 14 and 15 of the *HEEA*.

It is also important to keep in mind the cost allocation rules for new transmission, especially in the case where the NID is prepared in response to a SASR and perhaps especially where that request originates with a DFO rather than with, say, new generation or new load. The question for present purposes is whether the costs of the new transmission are allocated to the transmission system as a whole (i.e., AESO or system costs) or to the party initiating the

SASR as participant related costs. This determination is made by the AESO on the basis of its tariff – although the tariff is subject to interpretation and the AESO has some discretion as to how to classify costs. In some cases, the AESO's interpretation may be challenged. For an example of a contentious cost allocation matter, see the treatment of the SASR for the Castle Rock Ridge Wind Farm as discussed in AUC Decision, 22367-D01-2017, Enel Alberta Wind Inc. General Partner of the Castle Rock Ridge Limited Partnership Complaint Pursuant to Section 26 of the *Electric Utilities Act* Regarding Conduct of the Alberta Electric System Operator December 23, 2017 and my post here. Furthermore, not only may the cost allocation be contentious as between the AESO and the applicant, it will typically (as the Consumers' Coalition of Alberta (CCA) pointed out in these proceedings) be completely opaque to third parties such as consumers who have a definite interest in that allocation.

In the case of a DFO-initiated SASR request, all participant-related costs allocated to the DFO would be recovered by the DFO in accordance with its tariff; in other words they are for the account of the rate paying customers of the DFO, not the DFO or its shareholders (subject to any disciplines imposed by AUC regulation of the DFO as a utility - whether on the basis of cost of service regulation or through performance based regulation (PBR)). But those disciplines will be imposed, if at all, *ex post*; what is at issue here is an *ex ante* review of whether these costs should be incurred in the first place.

The Provost Applications

The principal Provost application involved a NID application by the AESO to the AUC under section 34 of the *EUA* seeking approval of the need to construct a new 32 km 138 kV transmission line and certain modifications to related substations in order to improve the reliability of electric distribution services in the municipal districts of Provost and Wainwright. There were also facility applications filed by AltaLink (as the TFO) under the *HEEA*. The AUC agreed to hear the applications concurrently under the authority of section 15.4 of the *HEEA*. The NID application was driven by a SASR submitted to the AESO by FortisAlberta the DFO. FortisAlberta assessed that there were growing reliability concerns stemming from unsupplied load under N-1 conditions. Current service to the relevant substations is provided by radial connections to one of three transmission lines. By definition, a radial system has only a single source of supply, so the loss of a line or a transformer (an N-1 event) would deprive load of service until that single line or transformer could be restored or other arrangements (such as mobile generation) could be made. In FortisAlberta's assessment, this breached its planning criteria for load restoration. Those criteria suggested (at para 56) that "[r]estoration via distribution ties or from adjacent substations must be available subject only to switching time." The record of outages for the last 10 years for the three different transmission lines was summarized as follows (at para 59):

> Transmission Line 749L has experienced five sustained outages, with two of these outages lasting longer than an hour, specifically 20 hours and 12 hours. Transmission Line 715L has experienced one sustained outage in the last 10 years which lasted two hours. AltaLink submitted that Transmission Line 749L has had a historic availability of 99.963 per cent and Transmission Line 715L has had a historic availability of 99.997 per cent. AltaLink indicated that these were typical availabilities for 138-kV transmission lines of these lengths.

The decision contains a similar account for the relevant substations.
In light of this assessment, FortisAlberta submitted its SASR to the AESO in order to provide enhanced reliability for load customers and the AESO in turn directed AltaLink to prepare a cost estimate (at para 70):

> The estimated in-service cost is approximately $42 million, plus 20 per cent/minus 10 percent. The AESO determined that the costs associated with the project would be classified as participant-related, not system costs, in accordance with the ISO tariff.

In addition (but not part of the current application), Fortis would need to upgrade portions of its distribution system in order to address the unsupplied load (at para 71) at an estimated cost of $6.7 million.

The AESO did consider two alternatives in addition to the alternative proposed (as required by section 11 of the TReg) but in the end concluded (at para 75) that the proposed development was the only technically acceptable alternative and that it was in the public interest because (at para 78) it:

- Provides the market participant (i.e., the DFO) with a reasonable opportunity to exchange electric energy and ancillary services;
- Is the lowest cost option that addresses the SASR; and
- Meets the relevant Alberta Reliability Standards, including the Transmission Planning Standards, and the AESO's Transmission Planning Criteria – Basis and Assumptions.

The Decision of the Majority

A significant issue that arose during the AUC's consideration of the NID application was the extent to which the AESO had relied on the DFO in preparing the application. The CCA, through written submissions, argued that the AESO was far too reliant on the DFO and had effectively failed to make any independent assessment of need. The majority disagreed with that contention, concluding that (at para 145):

> [g]iven the legislated obligations of a DFO, the AESO is entitled to rely on a DFO to provide information about its distribution system in the course of developing a NID. The majority finds that this is an acceptable and necessary practice, in keeping with the parties' duties under the legislative scheme. The majority agrees with the AESO's statements that it does not have the mandate, expertise or information necessary to plan the distribution system, and the majority finds that a certain level of reliance upon DFOs is therefore required.

The majority also concluded that the AESO was not *too* reliant on the DFO, but that there was instead effective collaboration between the AESO and the DFO, and that this approach was consistent with the legislative mandate. Furthermore, the majority concluded (at para 149) "that it is not within the AESO's mandate to second-guess the DFO's distribution planning criteria." Instead, it was the responsibility of the AUC itself (at para 153) to determine reasonable reliability standards for a DFO. While it was possible that the capital tracker scheme in place

during the first generation of PBR (2013 – 2017) for distribution utilities did not provide adequate incentives to a DFO to contain costs, the majority was confident that the new pool-based approach to capital investments under the current generation of PBR (at para 151) "mitigates incentives for the DFOs to undertake unnecessary capital investments to increase their rate base and returns."

Another significant item of discussion was the question of whether FortisAlberta's planning criteria were too stringent (or risk averse), particularly if applied to sparsely populated rural areas, and especially if FortisAlberta was attempting to provide the same level of service, no matter how small the unsupplied load. The majority recognized that this would not be in the public interest (at paras 154 & 160) but concluded that this was not the case in the current application. Furthermore, the majority also agreed with the CCA that the *EUA* did not require the DFO to provide the same level of service to all customers regardless of the context. Instead (at paras 161 & 162):

> [t]he majority recognizes that geography, generally among other factors, may reduce reliability, and pursuing equal levels of service for every end-use customer in the province may result in costs exceeding those that would be in the public interest. The majority finds that failing to provide identical service for every customer does not necessarily create service that is "unduly discriminatory." In this proceeding, FortisAlberta explained that while its criteria for substation contingencies are the same for both urban and rural customers, it does have different targets for restoration times between urban and rural areas.
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> Based on this, the majority is satisfied that FortisAlberta strives to provide an equitable level of service and not an identical level. The majority considers that all customers should be able to expect a minimum level of reliability and that FortisAlberta's planning criteria helps to ensure this minimum is maintained. The majority finds FortisAlberta's practice of resolving unsupplied load issues in order of largest amount of unsupplied load first is consistent with its duty under Section 105 of the Electric Utilities Act to provide safe, reliable and economic service.

With respect to the merits of the particular application, the majority was convinced that the amount of unsupplied load was significant (at para 165). Furthermore, the AESO's assessment of need was entitled to the benefit of the presumption contained in section 38(e) of the TReg and CCA's submissions had not rebutted that presumption.

The Dissenting Reasons of Vice Chair Michaud

Vice Chair Michaud concluded that the AESO had not independently assessed the need for the project in this case. According to her this was because the AESO had approached the question of need in light of its *duty* to provide system access. This meant that it viewed (at para 303) "the request for system access service as the 'need' for the project in itself". While Vice Chair Michaud was prepared to concede that this would be acceptable if the SASR came from a new generator (since otherwise that generation would have no access) she emphasised (at para 304) that "[t]he AESO's duty to provide system access service in Section 29 does not mandate it to provide system access service to every market participant, in every situation, at any cost, and

regardless of the potential impacts of the proposed project." Instead, its duty was (at para 306) a "duty to ensure market participants have a 'reasonable opportunity' to exchange electric energy", and that meant that it is (at para 306, the underlining is Vice Chair Michaud's) "up to the AESO to determine whether the market participant submitting a SASR already has a reasonable opportunity to exchange electric energy, or if it requires a transmission system expansion or enhancement in order to provide that reasonable opportunity." That assessment should require (at para 306) "an assessment of the costs and benefits of the proposed project". According to Vice Chair Michaud this 'reasonableness inquiry' should allow the AESO to undertake precisely the type of "second-guessing" exercise that the AESO (supported here by the majority) considered to be beyond its jurisdiction. This interpretation was reinforced by the AESO's responsibility under section 34(1) of the *EUA* to assess that the proposed project meets the needs of Albertans and is in the public interest. Given the presumption established by section 38(e) of the TReg, any other interpretation of the AESO's scope of review would mean that (at para 308) "there may be no public interest assessment of a project that takes into account the impacts of the project."

In this case therefore Vice Chair Michaud concluded that the CCA had satisfied her that "to approve the needs identification document would not be in the public interest" within the meaning of section 38(e) of the TReg. It would not be in the public interest because (at para 311)

> … in this case, the NID application required some analysis of the costs and benefits of the proposed transmission development. The AESO is in the best position to weigh the expected increase in reliability from a proposed project against the potential impacts of the project, and is not constrained by its responsibility to provide system access service to market participants. It is within the AESO's public interest mandate to consider whether the need for this project exists, rather than finding that the need exists simply by virtue of the existence of a SASR.

To my mind, this reasoning is convincing. It is clear that somebody should assess need through a public interest lens. Section 34 of the *EUA* gives that responsibility to the AESO and if it can be shown that the AESO has effectively failed to make that determination then the NID as presented cannot be in the public interest. A DFO has no public interest mandate and it is not enough, as Vice Chair Michaud says, for the AESO to make sure that it *understands* the nature of SASR request originating with a DFO - it must also engage in a public interest analysis of need.

It also seems that the majority is not entirely comfortable with the *status quo*, for it references the possibility of convening a generic proceeding to examine distribution planning criteria. The majority reasoned as follows (at para 157):

> [t]his proceeding has given the Commission greater insight into SASRs submitted by a DFO with respect to reliability concerns. However, the broader issue of whether, when and how utilities use probabilistic planning is a complex issue that the majority finds is beyond the scope of a single NID proceeding. In order to properly assess this issue, the majority believes that all industry players, including the AESO, TFOs, DFOs, customer groups, industrial users, should be given the opportunity to weigh in in order to determine the value, merits and impacts of such a policy change from existing practices. The majority sees merit in a possible generic proceeding into distribution planning criteria for reliability with all stakeholders to examine DFO reliability planning criteria including, for example, the merits of probabilistic versus deterministic criteria for N-1 contingencies

> and the social, economic and environmental impacts to customers. Depending on the outcome of such a proceeding, there may be a potential for the Commission to change its requirements for NID applications from the AESO under its current Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments*.

I note that the AUC has just announced (Bulletin 2019-03) that it will initiate a generic proceeding to consider and clarify the rate treatment of amounts paid by a regulated distribution utility for the acquisition of other distribution systems or assets under the 2013-2017 and 2018-2022PBR plan frameworks. Perhaps it should do the same for the set of issues identified in these two proceedings as suggested by the majority in the text quoted above.

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