Date of Request for Comment: December 15, 2015

Period of Consultation: December 15, 2015 through January 26, 2016

Alberta Reliability Standard	Market Participant Comments and/or Alternative Proposal	AESO Replies
New The AESO is seeking comments from market participants with regard to the following matters: 1. Do you agree or disagree with the proposed Amended PRC-001-AB3-1.1(ii)? If you disagree, please provide comments. 2. Are there any subsections where the language does not clearly articulate the requirement for either the AESO or a market participant? If yes, please indicate the subsections and suggest language that would improve the clarity.	**AltaLink Management Ltd. ("AltaLink")** AltaLink does not agree with the proposed amendments to PRC-001-AB3-1 (ii); with detailed comments below. PRC-001-AB3-1 (ii) has prescriptive, detailed and subsystem level equipment outage reporting requirements over and above NERC's PRC-001-1 (ii), and it is not clear how these additional requirements improve protection system coordination or enhance system reliability. The existing PRC-001 rule is a key ARS standard that helps ensure effective coordination between Market Participants. The changes represents a significant departure from the historic scope and intentions of this reliability rule and infers an inappropriate shift in accountabilities between TFOs and the AESO. 1. R1 & R2: Why is ISO notification required in R2 but not R1? If the GFO is not expected to notify the ISO what is the expectation for the TFO upon receiving notification from the GFO?	1. Requirement R1 requires notification of the failure of any component of the protection systems of a generating unit or an aggregated generating facility. The operator of a generating unit or aggregated generating facility is required to notify the operator of a transmission facility in its area of such a failure for the purposes of situational awareness. Upon receiving such a notification, the operator of a transmission facility ("TFO") may choose to engage its protection experts to review any associated risk to the TFO's equipment. The AESO does not require visibility of generator protection failures as the Alberta interconnected electric system is operated to accommodate the loss of a single generating unit. Requirement R2 requires notification of the failure of a protection system that protects a transmission facility, or

		a teleprotection communication channel. Given the AESO's mandate to provide for the reliable operation of the Alberta interconnected electric system, the AESO requires notification of protection failures on the transmission system as the loss of high speed clearing could lead to transient instability and cascading outages during a fault condition.
	2. R2: Why is there a requirement for notification for teleprotection communication channel failures? NERC PRC-001-1 (ii) only requires notification for "protection relay or equipment failure." From an implementation perspective, AltaLink's telecom network is IP based utilizing MPLS technology, which provides extensive routing and auto-rerouting features utilized to provide high availability teleprotection. Each teleprotection communication channel may consist of multiple segments, each of which may have two or more paths. If one path fails, the traffic is automatically re-routed to next available path, so it would be onerous to determine and report the ongoing and dynamic details associated with communication channel redundancy and failure duration. Since the concern for system reliability is the failure of teleprotection, AltaLink believes that this is already covered by (a) and (b), as teleprotection is included in the protection system.	2. There is a requirement to provide notification of teleprotection communication channel failures because modern protection systems inherently rely on communications to achieve high speed clearing such that system stability is maintained and therefore it is necessary for the AESO and affected entities to be aware of such failures. However requirements R2(c) and R2(d) were specifically added to avoid unnecessary reporting related to teleprotection communication channel failures. The AESO agrees that, where re-routing to another path has occurred, system reliability is not affected. As long as the alternate path meets the technical requirements of the protection system, no failure of a teleprotection communication channel is considered to have occurred. Requirements R2(a) and R2(b) have been amended to clarify that related telecommunication failures are excluded. Teleprotection communication channel failures are addressed separately in requirements R2(c) and R2(d).
	3. R2: This requirement contains prescriptive failure reporting and follow-up timelines that are not included in NERC PRC-001-1 (ii). What is the purpose of this additional reporting when there is already a requirement to "correct the failure as soon as possible"?	3. Upon further consideration, the AESO has removed requirement R2.1(d) that required the reporting of consequences to the transmission system of a protection system failure. However, the AESO requires the information in requirements R2.1(a), R2.1(b) and R2.1(c) to assist in making assessments regarding the reliable operation of the transmission system. The AESO

		has restricted the scope of requirement R2(a) substantively by only applying this requirement to transmission facilities greater than 200 kV. The 24 and 48 hour periods set out in requirement R2(c) and requirement R2.1, respectively, have been added to ensure there is an outside limit to the timeline required for notification.
	4. R4: What is the purpose of the ISO notification? NERC PRC-001-1 (ii) states to "coordinate." Is the intention for the ISO to be notified for every protection coordination in Alberta, and if so, for what purpose?	4. NERC PRC-001-1 (ii) requirement R4 requires that the Balancing Authority be included in protection coordination. The AESO performs the role of the Balancing Authority in Alberta. Upon further review the AESO has amended this requirement to include coordination with the AESO. The AESO will identify examples of instances where it is affected by a protection system change in an Information Document. Such instances include, for example, changes to a power swing or synch check relay.
	AltaLink requests clarification on the following language: 5. R1 & R2: Why has the AESO chosen to use "protection system" versus "protective relay or equipment" as per NERC's PRC-001-1 (ii)?	5. The AESO used the term "protection system" rather than the phrase "protective relay or equipment" as "protection system" is a defined term in the AESO's *Consolidated Authoritative Document Glossary* that includes the elements referred to in amended PRC-001-AB3-1(ii) and provides more clarity than the term "protective relay or equipment".
	6. R2: It is redundant to include teleprotection communication channel failures separately from protection system failures. The AESO Consolidated Authoritative Document Glossary defines "protection system" to include "communication systems necessary for correct operation of protective functions." Therefore, AltaLink suggests deleting bullets (c) and (d).	6. The AESO has amended requirement R2(a) and R2(b) to exclude teleprotection communication channels and has addressed teleprotection communication channels separately from the other components of a protection system in requirements R2(c) and R2(d).
	7. R5: The ISO has inserted the word "planned." What are the practical implications such as timeline and evidentiary requirements of this addition?	7. NERC PRC-001-1 (ii) requirement R5 requires notification "in advance of changes". The word "planned" was added to PRC-001-AB3-1(ii) for clarity. The AESO recognizes that planned changes that may require changes in the protection systems of other entities will not arise often.

	ATCO Electric Ltd. ("ATCO Electric") ATCO Electric does not agree with the proposed amendments to PRC-001-AB3-1 (ii) as per the submitted comments attached below.	
	8. Why does R1 not have the expectation to notify the ISO when R2 requires it? If the GFO is not expected to notify the ISO, then what is the expectation of the TFO upon receiving notification from the GFO?	8. Refer to AESO reply #1.
	9. R2 c & d: Transmission control center operators do not normally have 'equivalent backup' system knowledge when there is a failure. Because of this, we will likely have to report all telecommunication failures to the ISO. Is this acceptable?	9. The requirement is clear and it is up to each market participant to determine how it will comply with the requirements of R2(c) and (d). In the AESO's view, the reporting of all telecommunication failures after ten minutes does not meet the intent of these requirements, as it is necessary to know whether or not a functional equivalent backup telecommunication channel remains in service in order to determine when to report the failure. Further, it is necessary for the AESO to know whether or not a functional equivalent backup telecommunication channel remains in service in order to maintain the reliable operation of the interconnected electric system. The AESO has revised requirement R2(c) such that it applies only to a telecommunication protection channel that is part of a protection system for a transmission facility operated at a nominal voltage greater than 200 kV.
	10. R2.1 AE is questioning the way this requirement is worded. Do we have to notify AESO if the line is not energized when the protection fails and it is identified and corrected before being re-energized.	10. Requirement R2.1 only requires notification to be provided to the AESO when there is a protection system failure on an energized line.
	11. R2.1 (d) AE is unclear of the scope for describing the consequences to the transmission system of the protection system failure. In using the defined term 'transmission system,' that implies all the transmission systems in Alberta. AE would be unable to determine	11. Refer to AESO reply #3.

	the consequences outside our control area. We recommend AESO change the language to the requirement to be more specific.	
	12. R2.2 AE is unclear on the expectation of this requirement. Do we provide a new estimate 5 days before the previous estimate is exceeded, or on the 5th day after the estimate is exceeded. AE recommends that this be reworded for clarity.	12. The AESO has modified the wording of requirement R2.2 for clarity.
	EPCOR Distribution & Transmission Inc. ("EDTI")	
	13. Where a protection system or teleprotection communication channel has failed, and requires notification to be provided to the ISO and directly affected TFOs and GFOs, there appears to be no requirement to provide notice/confirmation to those parties when the failure has been corrected unless the estimated return to service date is exceeded by five days (R2.2). To improve protection coordination, EDTI recommends a subrequirement of R2 to include notification to those notified under R2.1 when the failure has been corrected. Additionally, those notified under R2.1 should be notified by the estimated return to service date if that milestone will not be met.	13. If the protection system or teleprotection communication channel is returned to service by the estimated date, no further notification is required. Notification of a new estimate of the return to service date by the estimated return to service date identified pursuant to requirement R2.1(c) is acceptable, however, the AESO considers the five day margin to be reasonable.
	14. For clarity, R2.2 should state to whom the new estimated return to service date is to be provided.	14. The AESO has modified requirement R2.2 accordingly.
	15. R2.2 should specify if the new estimate is to be provided within five **business** days or 5 **calendar** days of the previous estimate.	15. The AESO has modified requirement R2.2 accordingly. Please refer to the AESO's *Consolidated Authoritative Document Glossary* for the definition of "day".
	ENMAX Power Corporation	
	We have a few questions regarding R2 c) and d):	
	16. a) The most common type of communication channel failure on EPC's system is a channel failure that is intermittent (less than 10 consecutive minutes) but the duration of the intermittent failures can range from minutes to more than a day. Is the TFO no longer required to report this type of communication channel failure?	16. a) Per requirements R2(c) and R2(d), respectively, entities are obligated to report any communication failures lasting more than 24 continuous hours, or more than 10 consecutive minutes.
	b) The terminology "backup" communication channel isn't entirely accurate. A backup protection system (and therefore backup communication system) is a system backup to the primary protection system(s). A more accurate description may be "dual" teleprotection	b) For the purposes of amended PRC-001-AB3-1(ii) the term "backup" as it applies to communication systems includes all functionally equivalent communication systems. The AESO does not agree that the use of the

	channels.	term “dual” would provide additional clarity.
	17. Who should be notified at ISO for R4 and R5? No email address is provided and the ‘old’ standard had an accompanying Information document with ISO email contact information. Will this new standard also have an Information document?	17. Contact information will be provided in an Information Document.
	18. R2.1: We may want to add some details to define the following: “a **description of the consequences** to the transmission system of the protection system or teleprotection communication channel(s) not being available.”	18. Refer to AESO reply #3.
	Suncor Energy Inc.	
	19. **R1.1** Suncor Energy Inc. feels that the wording “aware of” in R1.1 does not clearly specify the “24 hours” timeframe requirement. Does the 24 hours timeframe **start:** a. as soon as an **event** is detected? or b. as soon as an event has been decided to be a **failure** by investigation? Suncor Energy Inc. recommends using similar wording “but no longer than twenty four (24) hours **after the earlier of receiving knowledge of or detecting such failure**” as was used in PRC-001-AB2-1:R3.1.	19. It is the responsibility of each entity to determine when it becomes aware of a failure for the purposes of requirement R1.1.
	20. **R2 (b)** Suncor Energy Inc. seeks clarification of the voltage class of the “transmission facility that is part of the bulk electric system”. Does transmission facility here refer to a facility that is rated greater than **25 kV** or **100 kV** and up for ISD?	20. Please refer to the “bulk electric system” and “transmission facility” definitions in the AESO’s *Consolidated Authoritative Document Glossary*.
	21. **R2(c) & R2(d)** Suncor Energy Inc. seeks clarification / definition of **teleprotection communication channel(s)**.	21. Please refer to subclause (ii) in the definition of “protection system” in the AESO’s *Consolidated Authoritative Document Glossary*.
	22. **R6(c)** Suncor Energy Inc. Seeks clarification of the Remedial Action Scheme. Is AESO referring to system RAS and/or internal RAS in this requirement?	22. Please refer to the definition of “remedial action scheme” in the AESO’s *Consolidated Authoritative Document Glossary* and the Alberta RAS List as published on the landing page for PRC-001.
Post consultation questions	**Cenovus Energy Inc. (“Cenovus”)** The Current RAS at Cenovus Foster Creek is monitored by ATCO as	

	per the Functional Spec for the AESO Project P1308. In the functional Spec ATCO and AESO Receive an Alarm upon RAS failure (Page 6, Table 1). See attached Functional Spec. 23. When the proposed new PRC standard becomes effective will Cenovus need to receive RAS status signals from ATCOs system and monitor the Condition of this RAS and notify the ISO and ATCO if the RAS is offline to be in compliance with PRC-001-AB3-1.1 (ii) R6?	23. It is the responsibility of each legal owner to determine what actions are necessary to meet requirement R6. For those RASs that involve more than one operator of a transmission facility, the AESO suggests that the operators coordinate to ensure the RAS is fully monitored.