

Information Document

FAC-008-AB-3 Facility Ratings

ID #2017-004RS



Information Documents are not authoritative. Information Documents are for information purposes only and are intended to provide guidance. In the event of any discrepancy between an Information Document and any Authoritative Document(s)¹ in effect, the Authoritative Document(s) governs.

1 Purpose

This Information Document relates to the following Authoritative Document:

- Alberta Reliability Standard FAC-008-AB-3, *Facility Ratings* (“FAC-008-AB-3”).

The purpose of this Information Document is to provide guidance information to assist market participants in identifying:

- the meaning of “new facilities” and “existing facilities” in regards to the application of FAC-008-AB-3 effective dates;
- the facilities that are subject to FAC-008-AB-3;
- the type of ratings for which a legal owner may consider developing documentation or a methodology for its facilities in the application of FAC-008-AB-3;
- the entity responsible for either the “documentation for determining the facility ratings” or the “documented methodology for determining the facility ratings” of various facilities in accordance with the requirements of FAC-008-AB-3; and
- the use of dynamic thermal line ratings in the application of FAC-008-AB-3.

2 Meaning of new and existing facilities

In the context of FAC-008-AB-3, the AESO considers the term “new facilities” to mean transmission facilities, generating units, and aggregated generating facilities (collectively “facilities”) energized after January 1, 2019 and “existing facilities” to mean facilities energized prior to January 1, 2019.

The AESO expects facilities energized after January 1, 2019 to meet the requirements of FAC-008-AB-3 upon energization. However, facilities energized prior to January 1, 2019, must meet the FAC-008-AB-3 requirements by January 1, 2020.

3 Applicable Ratings in the context of FAC-008-AB-3

The following table identifies, at a minimum, the type of facility ratings for which a legal owner may consider developing documentation or a methodology for its facilities in the application of FAC-008-AB-3.

Facility	Voltage	Current	MW	MVAr	MVA*
Transmission Line		X			X
Bus	X				
Transformer					X
Generating unit			X	X	
Aggregated Generating Facility			X	X	
Shunt Capacitor Bank or Shunt Reactor	X			X	
Static VAr Compensator	X			X	
Series Capacitor Bank	X	X		X	

¹ “Authoritative Documents” is the general name given by the AESO to categories of documents made by the AESO under the authority of the *Electric Utilities Act* and regulations, and that contain binding legal requirements for either market participants or the AESO, or both. AESO Authoritative Documents include: the ISO rules, the Alberta reliability standards, and the ISO tariff.

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Facility	Voltage	Current	MW	MVAr	MVA*
Filter Bank	X			X	
HVDC	X		X		

*Note: MVA is typically calculated at nominal voltage and this voltage used in its MVA calculation is to be stated in data submissions to the AESO as per Section 502.15 of the ISO rules, *Reporting Facility Modelling Data* ("Section 502.15") and Section 304.6 of the ISO rules, *Unplanned Transmission Facility Limit Changes* ("Section 304.6").

Facility rating methodologies apply to steady state and not transient conditions.

4 Dynamic Thermal Line Ratings in the context of FAC-008-AB-3

For transmission lines that use a dynamic thermal line rating process, the AESO recommends that the legal owner also maintain a static seasonal line capacity ratings methodology for both normal and emergency ratings in addition to the dynamic thermal line rating methodology as identified in requirement R3.2 of FAC-008-AB-3.

5 Facility Ratings in the context of FAC-008-AB-3

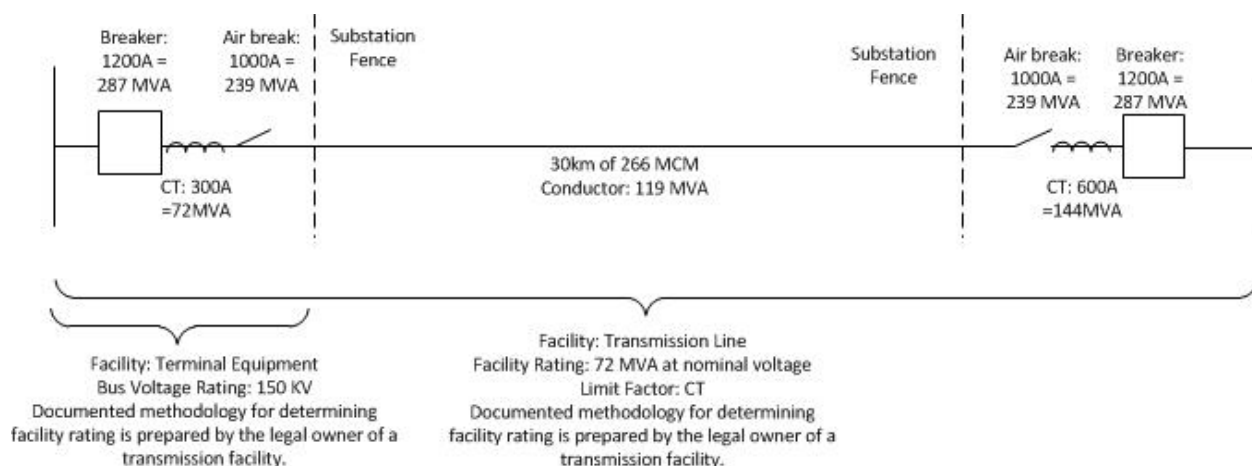
This Information Document contains examples of facilities for the purpose of determining ampacity/MVA ratings and the most limiting applicable equipment rating. Where appropriate, examples of other facility ratings are also shown in the figures below. The examples also identify the entity responsible for either the "documentation for determining the facility ratings" or the "documented methodology for determining the facility ratings". The figures below include:

- a transmission line;
- a transformer;
- a T-tapped transmission line;
- an aggregated generating facility;
- a generating unit; and
- lines with breaker and a half configuration.

5.1 Transmission Line

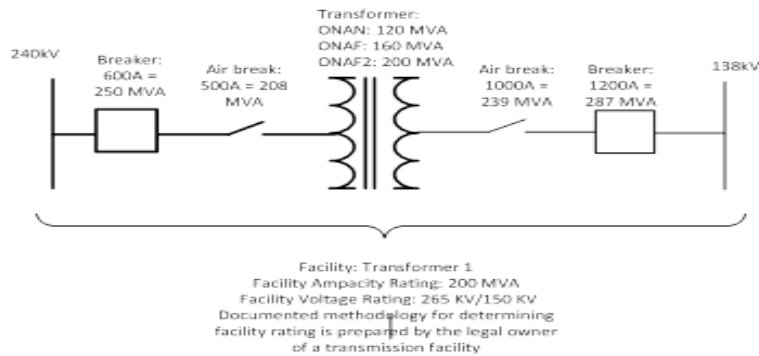
The AESO considers point-to-point ampacity/MVA to be "facility ratings" for the purpose of applying FAC-008-AB-3 to transmission lines.

The MVA calculated is typically based on the nominal voltage, and needs to be stated with the data submitted to the AESO in accordance with Sections 502.15 and 304.6 of the ISO rules.

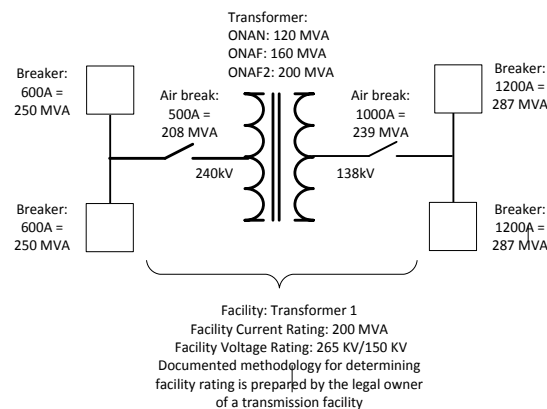


5.2 Transformer

The AESO considers point-to-point ampacity/MVA to be the facility rating for the purpose of applying FAC-008-AB-3 to transformers.

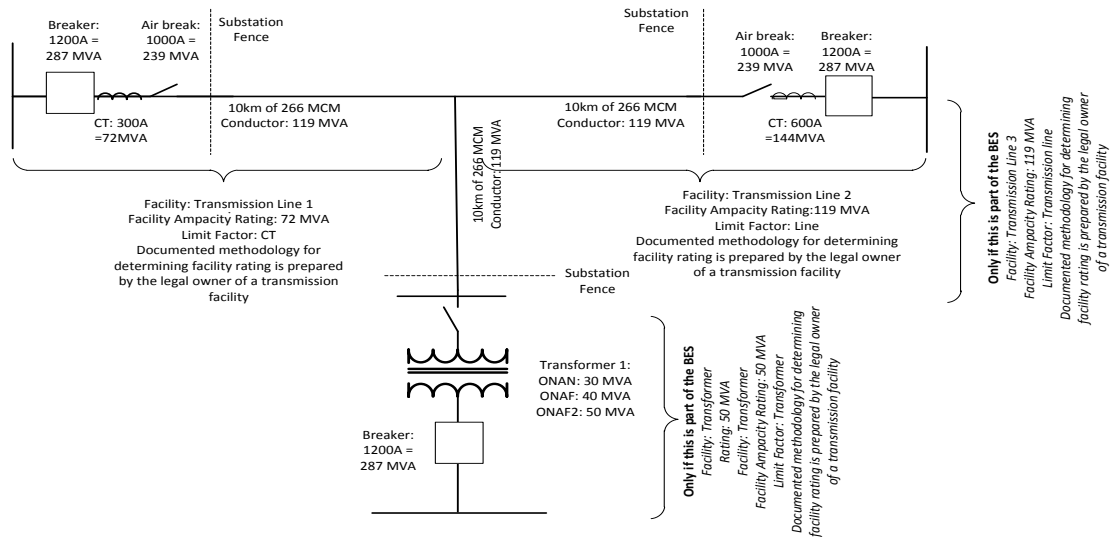


The transformer rating methodology may or may not include the limiting effect of the breaker and a half terminal equipment. If this terminal configuration poses a potential limit to the transformer capability with one of the two breakers open, then the AESO expects this limitation to be included in the rating methodology and that it be calculated and part of data submitted to the AESO as per Sections 502.15 and 304.6.

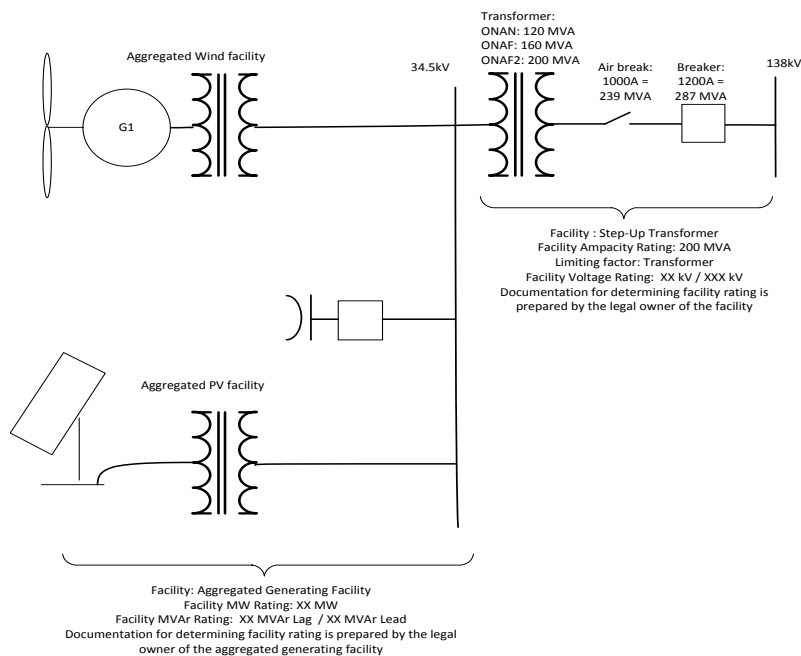


Transformers have two time-based emergency ratings associated with their capacity. The first rating is based on 30 minutes of overload. The second rating is based on a subsequent 3.5 hrs loading that follows the 30 minute overload rating.

5.3 T-Tap transmission lines

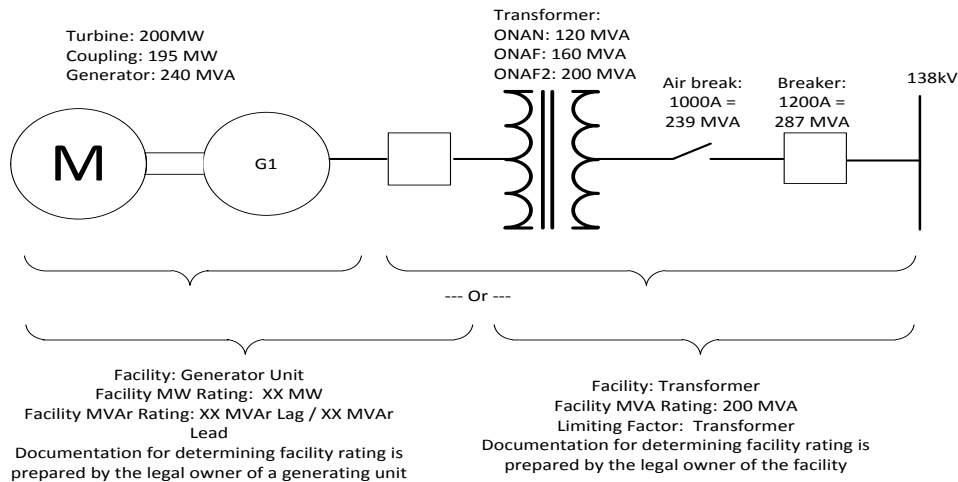


5.4 Aggregated Generating Facility



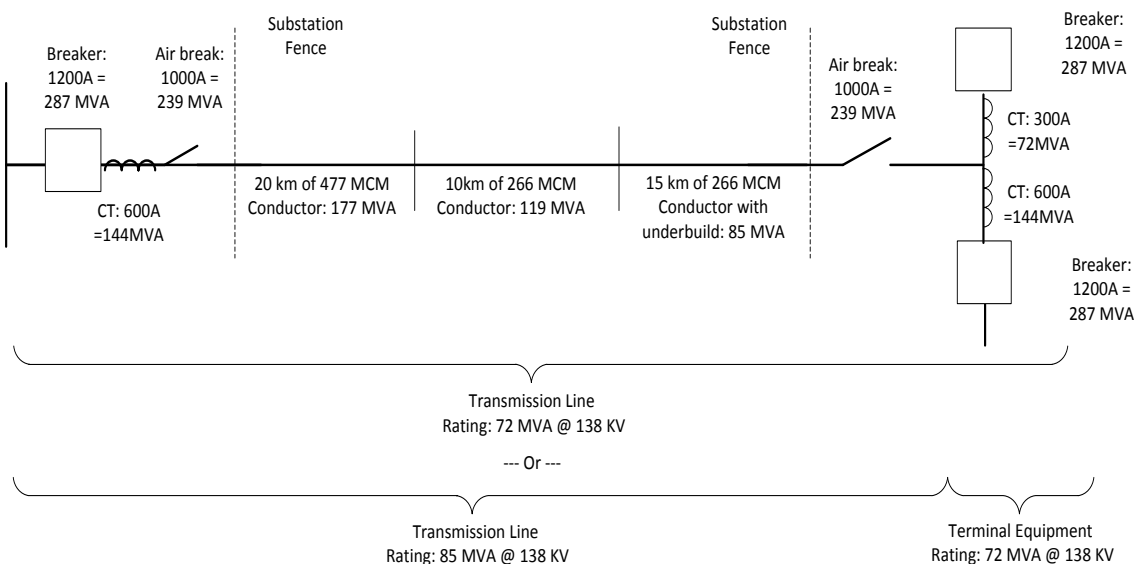
5.5 Generating Unit

Under FAC-008-AB-3, each legal owner is accountable for the facility rating methodology for the equipment it owns. With respect to generation facilities, this equipment ownership varies from site to site and so the facility rating methodology aligns with the equipment ownership. In the drawing below are two examples.



5.6 Lines with Breaker and a Half configuration

The transmission line rating methodology may or may not include the limiting effect of the breaker and a half terminal equipment. If this terminal configuration poses a potential limit to the transmission line capability with one of the two breakers open, then the AESO expects this limitation to be included in the rating methodology and that it be calculated and part of data submitted to the AESO.



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Revision History

Posting Date	Description of Changes
2019-01-29	Updated to provide clarity on the meaning of “new” and “existing” facilities.
2017-11-09	Initial release.