

Alberta Reliability Standard

Facility Ratings

FAC-008-AB-5

A. Introduction

1. Title: Facility Ratings
2. Number: FAC-008-AB-5
3. Purpose: To ensure that **facility ratings** used in the reliable planning and operation of the **bulk electric system** are determined based on technically sound principles. A **facility rating** is essential for the determination of **system operating limits**.
4. Applicability:
 - 4.1. Functional Entities:
 - 4.1.1. the **legal owner** of a **transmission facility** that is part of the **bulk electric system**; and
 - 4.1.2. the **legal owner** of a **generating unit**, **legal owner** of an **aggregated facility**, and **legal owner** of an **energy storage resource** that is part of the **bulk electric system**.
 - 4.2. This **reliability standard** does not apply to **generating units**, **aggregated facilities**, or **energy storage resources** that are part of an industrial complex, unless the **generating unit**, **aggregated facility**, or **energy storage resource** is part of an industrial complex with Rate STS of the **ISO tariff** greater than 67.5 MW.
5. Effective Date: The later of (i) July 1, 2029, and (ii) the first **day** of the first calendar quarter 3 **months** following **Commission** approval.

B. Requirements and Measures

- R1. Each **legal owner** of a **generating unit**, **legal owner** of an **aggregated facility**, or **legal owner** of an **energy storage resource** must have documentation for determining the **facility ratings** of its solely and jointly owned facility(ies) up to:
 - (a) the low side terminals of the main step up transformer if the **legal owner** of the **generating unit**, **legal owner** of an **aggregated facility**, or **legal owner** of an **energy storage resource** does not own the main step up transformer; and
 - (b) the high side terminals of the main step up transformer if the **legal owner** of a **generating unit**, **legal owner** of an **aggregated facility**, or **legal owner** of an **energy storage resource** owns the main step up transformer. *[Alberta Risk Rating: Lower] [Time Horizon: Long-term Planning]*
- 1.1. The documentation must contain assumptions used to rate the **generating unit**, **aggregated facility**, or **energy storage resource**, and at least one of the following: design or construction information such as design criteria, ratings provided by equipment manufacturers, equipment drawings and/or specifications, engineering analyses, method(s) consistent with industry standards (e.g. the American National Standards Institute and the Institute of Electrical and Electronics Engineers), or an established engineering practice that has been verified by testing or engineering analysis. Operational information such as

Alberta Reliability Standard

Facility Ratings

FAC-008-AB-5

commissioning test results, performance testing or historical performance records, any of which may be supplemented by engineering analyses.

- 1.2. The documentation must be consistent with the principle that the **facility ratings** do not exceed the most limiting applicable **equipment ratings** of the individual equipment that comprises the facility.

M1. Each **legal owner** of a **generating unit**, **legal owner** of an **aggregated facility**, and **legal owner** of an **energy storage resource** must have documentation that shows how its **facility ratings** were determined as identified in Requirement 1.

R2. Each **legal owner** of a **generating unit**, **legal owner** of an **aggregated facility**, and **legal owner** of an **energy storage resource** must have a documented methodology for determining **facility ratings** (**facility ratings** methodology) of its solely and jointly owned equipment connected between the location specified in Requirement R1 and the **point of connection** with the **legal owner** of a **transmission facility** that contains all of the following: *[Alberta Risk Rating: Medium] [Time Horizon: Long-term Planning]*

- 2.1. The methodology used to establish the **equipment ratings** that comprises the facility(ies) must be consistent with at least one of the following:
 - 2.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating;
 - 2.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronics Engineers or International Council on Large Electric Systems; or
 - 2.1.3. A practice that has been verified by testing, performance history or engineering analysis.
- 2.2. The underlying assumptions, design criteria, and methods used to determine the **equipment ratings** identified in Requirement R2, Part 2.1 including identification of how each of the following were considered:
 - 2.2.1. **Equipment rating** standard(s) used in development of this methodology;
 - 2.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications;
 - 2.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time); and
 - 2.2.4. Operating limitations.¹
- 2.3. A statement that a **facility rating** must respect the most limiting applicable **equipment rating** of the individual equipment that comprises that facility.
- 2.4. The process by which the **equipment rating** that comprises a facility is determined.
 - 2.4.1. The scope of equipment addressed must include conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.

¹ Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

Alberta Reliability Standard

Facility Ratings

FAC-008-AB-5

- 2.4.2. The scope of **equipment ratings** addressed must include, as a minimum, both **normal ratings** and **emergency ratings**.

M2. Each **legal owner** of a **generating unit**, **legal owner** of an **aggregated facility**, and **legal owner** of an **energy storage resource** must have a documented **facility ratings** methodology that includes all of the items identified in Requirement 2, Parts 2.1 through 2.4.

R3. Each **legal owner** of a **transmission facility** must have a documented methodology for determining **facility ratings** (**facility ratings** methodology) of its solely and jointly owned facilities (except for those **generating unit**, **aggregated facility**, and **energy storage resource** facilities addressed in Requirement R1 and R2) that contains all of the following: *[Alberta Risk Rating: Medium] [Time Horizon: Long-term Planning]*

- 3.1. The methodology used to establish the **equipment ratings** that comprises the facility must be consistent with at least one of the following:
 - 3.1.1. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications such as nameplate rating;
 - 3.1.2. One or more industry standards developed through an open process such as Institute of Electrical and Electronics Engineers or International Council on Large Electric Systems; or
 - 3.1.3. A practice that has been verified by testing, performance history or engineering analysis.
- 3.2. The underlying assumptions, design criteria, and methods used to determine the **equipment ratings** identified in Requirement R3, Part 3.1 including identification of how each of the following were considered:
 - 3.2.1. **Equipment rating** standard(s) used in development of this methodology;
 - 3.2.2. Ratings provided by equipment manufacturers or obtained from equipment manufacturer specifications;
 - 3.2.3. Ambient conditions (for particular or average conditions or as they vary in real-time); and
 - 3.2.4. Operating limitations.²
- 3.3. A statement that a **facility rating** must respect the most limiting applicable **equipment rating** of the individual equipment that comprises that facility.
- 3.4. The process by which the **equipment rating** that comprises a facility is determined.
 - 3.4.1. The scope of equipment addressed must include transmission conductors, transformers, relay protective devices, terminal equipment, and series and shunt compensation devices.
 - 3.4.2. The scope of **equipment ratings** addressed must include, as a minimum, both **normal ratings** and **emergency ratings**.

M3. Each **legal owner** of a **transmission facility** must have a documented **facility ratings** methodology

² Such as temporary de-ratings of impaired equipment in accordance with good utility practice.

Alberta Reliability Standard

Facility Ratings

FAC-008-AB-5

that includes all of the items identified in Requirement 3, Parts 3.1 through 3.4.

R4. Reserved.

M4. Reserved.

R5. Reserved.

M5. Reserved.

R6. Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit**, **legal owner** of an **aggregated facility**, and **legal owner** of an **energy storage resource** must have **facility ratings** for its solely and jointly owned facilities that are consistent with the associated **facility ratings** methodology or documentation for determining its **facility ratings**. *[Alberta Risk Rating: Medium]*
[Time Horizon: Operations Planning]

M6. Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit**, **legal owner** of an **aggregated facility**, and **legal owner** of an **energy storage resource** must have evidence to show that its **facility ratings** are consistent with the documentation for determining its **facility ratings** as specified in Requirement R1 or consistent with its **facility ratings** methodology as specified in Requirements R2 and R3 (Requirement R6).

R7. Reserved.

M7. Reserved.

R8. Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit**, **legal owner** of an **aggregated facility**, and **legal owner** of an **energy storage resource** subject to Requirement R2 must provide requested information as specified below (for its solely and jointly owned facilities that are existing facilities, new facilities, modifications to existing facilities and re-ratings of existing facilities) to the **ISO**, **legal owners** of a **transmission facility** and **operators** of a **transmission facility**: *[Alberta Risk Rating: Medium]* *[Time Horizon: Operations Planning]*

8.1. As scheduled by the requesting entities:

8.1.1. **Facility ratings**; and

8.1.2. Identity of the most limiting equipment of the facilities.

8.2. Within 30 **days** (or a later date if specified by the requester), for any requested facility with a thermal rating that limits the use of facilities under the requester's authority by causing any of the following: 1) an **interconnection reliability operating limit**, 2) a limitation of **total transfer capability**, 3) an impediment to generator deliverability, or 4) an impediment to service to a major load center:

8.2.1. Identity of the existing next most limiting equipment of the facility; and

8.2.2. The thermal rating for the next most limiting equipment identified in Requirement R8, Part 8.2.1.

Alberta Reliability Standard

Facility Ratings

FAC-008-AB-5

M8. Each **legal owner** of a **transmission facility**, **legal owner** of a **generating unit**, **legal owner** of an **aggregated facility**, and **legal owner** of an **energy storage resource** subject to Requirement R2 must have evidence, including a copy of a dated electronic note, or other comparable evidence to show that it provided its **facility ratings** and identity of limiting equipment to the **ISO**, **legal owners** of a **transmission facility** and **operators** of a **transmission facility** in accordance with Requirement R8.

C. Compliance

[Intentionally left blank.]

D. Regional Variances

None.

E. Associated Documents

AESO Information Document #2017-004RS, *FAC-008-AB-3 Facility Ratings* and any amendments made thereto from time to time

Version History

Version	Effective Date	Description of Changes
AB-5	The later of (i) July 1, 2029, and (ii) the first day of the first calendar quarter 3 months following Commission approval	Revised based on NERC FAC-008-5, approved by FERC in Docket No. RD21-4-000. The revisions to FAC-008-AB-3 include modifying the Applicability section including removing the Appendix 1 process, amending language for Requirements R4, R5, and R7 to “Reserved” to reflect their retirement by NERC, and adopting Requirement R8.
AB-3	2019-12-01	Unbolded “real-time”.
AB-3	2019-01-01	Initial Release.