

Generation Interconnection Requirements at Voltages 34.5 kV and Below (GIR) Addendum 2024

This Addendum will take effect on June 1, 2024. Requirements below are in addition to the *Generation Interconnection Requirements at Voltages 34.5 kV and Below (GIR)*. This Addendum supercedes “Distribution Generation Interconnection Requirements – for NET METERING Addendum 2020”

All kW figures below are the aggregation of all generator(s) maximum continuous kW (AC) capacity on the Supplier/Generator side of the Point of Common Coupling (PCC).

Requirements:

1. All inverters must be UL 1741 SB certified. This provides certification to applicable sections of IEEE Std 1547.1-2020, which is based on IEEE Std. 1547-2018.
2. Frequency and voltage ride-through parameters must be configured according to:
 - a. Inverters: Category II or III in IEEE Std. 1547-2018
 - b. Synchronous Generators: Category I in IEEE Std. 1547-2018
3. A power factor capability of at least -0.90 to 0.90 will be required as per IEEE Std. 1547-2018.
 - a. Example: Some inverter datasheets state: 0 - 1 power factor (ind/cap). This exceeds the required capability above.
 - b. Often, SaskPower requires generators to be operating at non-unity power factor to regulate voltage within SaskPower Electric Service Requirements (ESR).
 - c. SaskPower may require (especially on remote rural situations) lower than 0.90 power factor to regulate voltage within SaskPower ESR.
 - d. The Supplier may opt for a larger kVA rated facility to avoid kW limitations when the facility is required to operate at non-unity power factor.
4. Volt/Var (Voltage – Reactive Power) Control Mode to be **enabled** using IEEE Std. 1547-2018 default parameters. SaskPower may specify different parameters.
5. Volt/Watt (Voltage – Active Power) Control Mode is highly recommended to be **enabled** for DERs > 25 kW to avoid tripping on overvoltage during some system events.
6. Facility designs > 100 kW must be approved by a P.Eng. This requirement may be imposed on new ≤ 100 kW facilities in the future.
7. Non-export / limited export facilities greater than 25 and up to 100 kW:
 - a. The design (including drawings) must be approved by a P.Eng.
 - b. A protection philosophy document is required
 - c. Facilities must trip within 1 second of exceeding the real power export limit.
8. Non-export / limited export facilities greater than 100 kW nameplate DER capacity:
 - a. The design (including drawings) must be approved by a P.Eng.
 - b. A protection philosophy document is required
 - c. Facilities must trip within 1 second of exceeding the real power export limit.
 - d. Reverse power flow protection must be provided by a capable protective class relay using a 32R element and a breaker.

SaskPower will be releasing a major update to the GIR in the near future. It will include the above requirements along with other requirements.