![conEdison logo]

Con Edison Default IEEE 1547-2018 / 1547a-2020 Settings

The settings presented below are intended to conform to IEEE 1547-2018 and 1547a-2020. For inverter-based systems, these default settings shall be input into UL 1741 SB certified smart inverters interconnecting to the Con Edison Electric System with the following Interconnection Application Dates: 1) Systems >50 kW: the effective date of the 2023 update to the New York State Standardized Interconnection Requirements (NYSSIR), and 2) Systems ≤ 50 kW: On or after June 1st, 2023. Settings other than these defaults, within the ranges allowable in IEEE 1547-2018 and 1547a-2020 may be required on a case-by-case basis and are subject to review and approval by Con Edison.

I. **Operating Categories**

Performance Category	Inverter-Based	Synchronous Generator
Normal	B	A
Abnormal	III	I

II. **Frequency Disturbance Trip**

	Inverter-Based		Synchronous Generator	
Trip Function	Freq. (Hz)	Clearing Time (s)	Freq. (Hz)	Clearing Time (s)
OF2	62	0.16	62	0.16
OF1	61.2	300	61.2	300
UF1	58.5	300	58.5	300
UF2	56.5	0.16	56.5	0.16

III. **Frequency Droop**

Parameters	Inverter-Based	Synchronous Generator
db_{OF} (Hz)	0.036	0.036
db_{UF} (Hz)	0.036	0.036
k_{OF} (p.u.)	0.05	0.05
k_{UF} (p.u.)	0.05	0.05
$T_{response}$ (s)	5	5

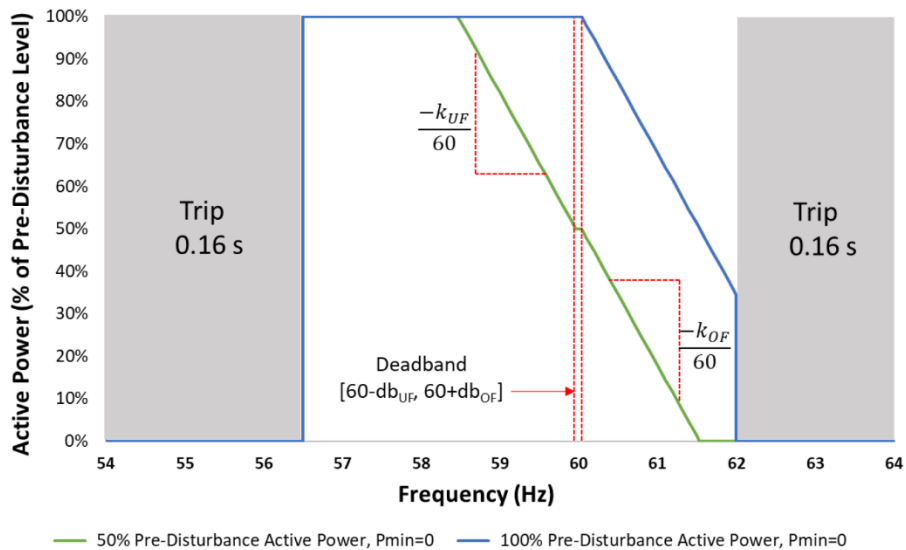
Figure 1: Example Frequency Droop Curves

IV. Voltage Disturbance Trip

Trip Function	Inverter-Based		Synchronous Generator	
	Voltage (p.u.)	Clearing Time (s)	Voltage (p.u.)	Clearing Time (s)
OV2	1.2	0.16	1.2	0.16
OV1	1.1	2	1.1	2
UV1	0.8	3	0.8	3
UV2	0.5	1.1	0.5	0.16

V. Enter Service Criteria [1]

Parameters	Inverter-Based	Synchronous Generator
Frequency Minimum (Hz)	59.5	59.5
Frequency Maximum (Hz)	60.1	60.1
Voltage Minimum (p.u.)	0.917	0.917
Voltage Maximum (p.u.)	1.05	1.05
Enter Service Delay (s)	120	120
Enter Service Duration (s)	120 (for >50 kW) / 30 (≤50 kW)	120
Enter Service Type	Linear ramp (for >50 kW) Randomized time delay (≤50 kW)	Linear ramp for all systems

VI. Fixed Power Factor

Parameters	Inverter-Based	Synchronous Generator
Constant PF Active	No	No
Power factor	0.95	0.97
Power Factor Excitation	INJ	INJ

VII. Volt-Var [2]

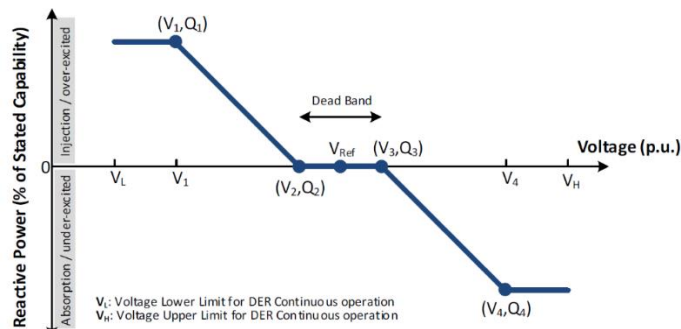| Parameters	Inverter-Based	Synchronous Generator
Volt-Var Active	Yes	Yes
V_{ref}	1	1
V_1 (p.u.) / Q_1 [†]	0.93 / 44%	0.9 / 25%
V_2 (p.u.) / Q_2 [†]	0.97 / 0%	1 / 0%
V_3 (p.u.) / Q_3 [†]	1.03 / 0%	1 / 0%
V_4 (p.u.) / Q_4 [†]	1.07 / -44%	1.1 / -25%
Open Loop Response Time (s)	5	10
Enable Autonomous V_{ref}	No	No

Figure 2: Example Volt-Var Curve

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[1] For systems >50 kW after an initial delay of 120 seconds, linear ramping is from 0% of Rated Active Power to 100% over 120 seconds. For systems ≤ 50kW, after an initial delay of 120 seconds, 100% of Rated Active Power exchange is allowed after a randomized 30 second time delay. Enter Service Criteria applies to both power import and export.

[2] Positive Q values indicate injection of reactive power (VARs) from the inverter into the grid. (-) Q values indicate absorption of reactive power (VARs) from the grid to the inverter. Inverter-based generators with a kVA rating equal to the nameplate kW rating at unity power factor are expected to operate between 0.90 PF leading and 0.90 PF lagging when producing at 100% VA. Synchronous Generators must be capable of operating between 0.97 PF leading and 0.97 PF lagging when producing at 100% VA. These power factors correspond to +/- 44% and +/- 25%, respectively, for each generator type.

VIII. Volt-Watt

Parameters	Inverter-Based	Synchronous Generator
Volt-Watt Active	No	Not Required
P_{min} ‡	P_{min} (Minimum Active Power Output)	Not Required
V_1 (p.u.) / P_1 ‡	1.07 / 100%	Not Required
V_2 (p.u.) / P_2 ‡	1.1 / P_{min}	Not Required
Open Loop Response Time (s)	10	Not Required

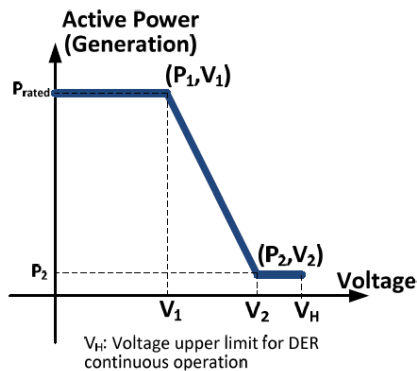**Figure 3: Example Volt-Watt Curve**

IX. Watt-Var

| Parameters	Inverter-Based	Synchronous Generator
Watt-Var Active	No	Not Required
P_3 ‡	100%	Not Required
P_2 ‡	50%	Not Required
P_1 ‡	20%	Not Required
P'_1 ‡	-20% (For import capable systems)	Not Required
P'_2 ‡	-50% (For import capable systems)	Not Required
P'_3 ‡	-100% (For import capable systems)	Not Required
Q_3 †	-44%	Not Required
Q_2 †	0%	Not Required
Q_1 †	0%	Not Required
Q'_1 †	0% (For import capable systems)	Not Required
Q'_2 †	0% (For import capable systems)	Not Required
Q'_3 †	44% (For import capable systems)	Not Required
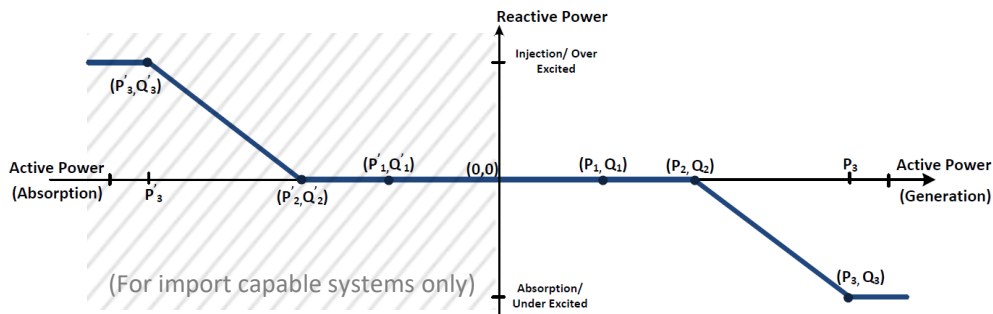
Figure 4: Example Watt-Var Curve

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‡ % of nameplate Active Power Rating.

† % of nameplate Apparent Power Rating.