TIIR Interim Guidance

The guidance document clarifies aspects of the TIIR to be placed into effect during the interim period for inverter-based systems. The interim period begins July 1, 2020 until the Commission provides Notice that the IEEE 1547-2018 certified equipment is readily available. During the interim period synchronous machines shall follow the TIIR as written for this technology type.

Inverter-based DER systems

All applicable inverter-based applications shall:

- be certified per the requirements of UL 1741 SA as a grid support utility interactive inverter,
- have the voltage and frequency trip settings,
- have the abnormal performance capabilities and,
- comply with other grid support utility interactive inverter functions statuses

1. **Certification per UL 1741 SA as grid support utility interactive inverters**
   In the interim period while IEEE P1547.1 is not yet revised and published, certification of all inverter-based systems:
   a. shall be compliant with only those parts of Clause 6 (Response to Area EPS abnormal conditions) of IEEE Std 1547-2018 (2nd ed.) that can be certified per the type test requirements of UL 1741 SA (September 2016);
   b. may be sufficiently achieved by certifying inverters as grid support utility interactive inverters per the requirements of UL 1741 SA September 2016) with either CA Rule 21 or Hawai'ian Rule 14H as the Source Requirements Documents. Such inverters are deemed capable of meeting the requirements of this document.

2. **Voltage trip settings for inverter-based systems**
   Applications shall have the voltage trip points specified in Tables I as follows.

Table I – Voltage Trip Settings for Cat II

Shall Trip Function	Default Setting	
	Clearing time (s)	Voltage (p.u. of nominal voltage)
UV2	0.16	0.45
UV1	10.0	0.70
OV1	2.0	1.10
OV2	0.16	1.20

3. Frequency trip settings for inverter-based systems

Applications shall have the frequency trip points specified in Tables II below.

Table II Frequency Trip Setting for Cat II

Shall Trip Function	Default Setting	
	Clearing time (s)	Frequency (Hz)
UF2	0.16	56.5
UF1	300.0	58.5
OF1	300.0	61.2
OF2	0.16	62.0

4. Other grid support utility interactive inverter functions statuses

Other functions required by UL 1741 SA shall comply with the requirements specified in Table III. For functions not activated by default, the inverter is compliant if tested to the manufacturers stated capability.

Table III: Grid support utility interactive inverter functions status

Function	Default Activation State
SPF, Specified Power Factor	OFF[1]
Q(V), Volt-Var Function with Watt or Var Priority	OFF
SS, Soft-Start Ramp Rate	ON Default value: 2% of maximum current output per second.
FW, Freq-Watt Function OFF	OFF

[1] Footnote: OFF and operating at unity PF. Or set to ON with unity PF.