

Equipment Safety & California's Distribution Grid Interconnection Tariff Rule 21

Rule 21 requires that 3rd parties use Certified Equipment (both behind the meter and on the distribution grid) when attempting to interconnect new components to the grid. Certified Equipment is equipment that has passed through rigorous certification testing procedures done by Nationally Recognized Testing Laboratories (NRTLs). Underwriters Laboratory (UL) is one such example.

NRTLs create testing procedures for equipment that verify equipment functionality and safety to pre-set testing standards created by nationally recognized engineering groups such as the Institute of Electrical and Electronic Engineers (IEEE).

Certified equipment is tested against set standards so that the performance of the component under various conditions is predictable and certain. Predictability and certainty in relation to grid component reactions to various grid events enables responses to these events, by first responders and other interested parties, routinized, predictable and safe. Therefore, by requiring certified equipment in the interconnection process, new equipment will be expected to perform in certain, predictable ways under various grid conditions and events. Predictability also enables safety measures and routines to be created and executed.

Certification and Testing Criteria

Section L of Rule 21 provides the testing procedures and criteria for “certifying” generators or inverters. The testing procedures listed in the rule rely heavily on those described in Underwriters Laboratory (UL), Institute of Electrical and Electronic Engineers (IEEE), and International Electrotechnical Commission (IEC) documents – most notably, UL 1741 testing procedures and IEEE 1547 Standard for Interconnecting Distribution Resources with Electric Power Systems.

This Section describes the test procedures and requirements for equipment used for the Interconnection of Generating Facilities to Distribution Provider's Distribution or Transmission System. Included are Type Testing, Production Testing, Commissioning Testing, and Periodic Testing.

Equipment tested and approved (i.e. “Listed”) by an accredited NRTL meets both Type Testing and Production Testing requirements described in Rule 21 and is considered to be Certified Equipment for the purposes of interconnecting with the distribution or transmission system.

Non-certified equipment will be required to provide information on some or all of the tests described in the rule and even then there is no guarantee that a utility will approve the non-certified equipment for use on the grid.