

California Independent System Operator Corporation
Fifth Replacement Tariff

Plant Level:

- (1) Plant three phase voltage and current
- (2) Status of ancillary reactive devices
- (3) Status of all plant circuit breakers
- (4) Status of plan controller
- (5) Plant control set points
- (6) Position of main plant transformer no-load taps
- (7) Position of main plant transformer tap changer (if extant)
- (8) Protective relay trips or relay target data

Inverter Level:

- (1) Frequency, current, and voltage during frequency ride-through events
- (2) Voltage and current during momentary cessation for transient high voltage events (when used)
- (3) Voltage and current during reactive current injection for transient low or high voltage events
- (4) Inverter alarm and fault codes
- (5) DC current
- (6) DC voltage

The data must be time synchronized, using a GPS clock or similar device, to a one millisecond level of resolution. All data except phase angle measuring unit data must be sampled at least every 10 milliseconds. Data recording must be triggered upon detecting a frequency ride-through event, a transient low voltage disturbance that initiated reactive current injection, momentary cessation or reactive current injection for a transient high voltage disturbance, or an inverter trip. Each recording will include as a minimum 150 milliseconds of data prior to the triggering event, and 1000 milliseconds of data after the event trigger. The Asynchronous Generating Facility must store this data for a minimum of 30 days. The Asynchronous Generating Facility will provide all data within 10 calendar days of a request from the CAISO or the Participating TO.

The Asynchronous Generating Facility must install and maintain a phase angle measuring unit or functional equivalent at the entrance to the facility or at the Generating Facility's main substation transformer. The phase angle measuring unit must have a resolution of at least 30 samples per second. The Asynchronous Generating Facility will store this data for a minimum of 30 days. The Asynchronous Generating Facility will provide all phase angle measuring unit data within 10 calendar days of a request from the CAISO or the Participating TO.