14. DISTRIBUTED GENERATION INTERCONNECTION REQUIREMENTS (Cont'd)

is measured from the time the voltage reaches this level until the generator-owner's equipment ceases to energize the PCC and includes detection and intentional time delay.

The protective device shall automatically initiate a disconnect sequence from the utility system if the rms voltage rises above 165 volts (137% of nominal voltage magnitude) or above on any phase to which the generator-owner's equipment is connected and remains above this level for two cycles. The two-cycle time limit is measured from the time the voltage reaches this level until the generator-owner's equipment ceases to energize the PCC and includes detection and intentional time delay.

Frequency

The required operating range for the generators shall be from 59.3 Hz to 60.5 Hz.

The protective device shall automatically initiate a disconnect sequence from the utility system if the frequency rises above 60.5 Hz (+0.1/-0.0 Hz) or falls below 59.3 Hz (+0.0/-0.1 Hz) and remains outside these limits for six cycles. The six-cycle time limit is measured from the time the frequency reaches these levels until the generator-owner's equipment ceases to energize the PCC and includes detection and intentional time delay.

2. Additional Protection Equipment

The need for additional protection equipment shall be determined by the utility on a case-by-case basis. The utility shall specify and provide settings for those relays that the utility designates as being required to satisfy protection practices. Any protective equipment or setting specified by the utility shall not be changed or modified at any time by the generator-owner without written consent from the utility.

The generator-owner shall be responsible for ongoing compliance with all applicable local, state, and federal codes and standardized interconnection requirements as they pertain to the interconnection of the generating equipment.

Protection shall not share electrical equipment associated with utility revenue metering.

A failure of the generator-owner's interconnection protection equipment, including loss of control power, shall open the automatic disconnect device, thus disconnecting the generation from the utility system. A generator-owner's protection equipment shall utilize a non-volatile memory design such that a loss of internal or external control power, including batteries, will not cause a loss of interconnection protection functions or loss of protection set points.

All interface protection and control equipment shall operate as specified independent of the calendar date.

3. Synchronous Generators

Synchronous generation shall require synchronizing facilities. These shall include automatic synchronizing equipment or manual synchronizing with relay supervision, voltage regulator, and power factor control.

4. Induction Generators

Induction generation may be connected and brought up to synchronous speed (as an induction motor) if it can be demonstrated that the initial voltage drop measured at the PCC is acceptable based on current inrush limits. The same requirements also apply to induction generation connected at or near synchronous speed because a voltage dip is present due to an inrush magnetizing current. The generator-owner shall submit the expected