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## GENERAL INFORMATION

### 14. DISTRIBUTED GENERATION INTERCONNECTION REQUIREMENTS (cont'd)

**Test 5:** With the generator and inverter output stabilized at 60 Hz and 100% of rated voltage (120 V rms) and the inverter output between 0.5 and 1.0 per unit power, ramp the generator frequency up to 60.6 Hz at a rate no greater than 0.5 Hz/second. Measure and record the frequency and voltage. The voltage must remain between 96% (115 V rms) and 104% of rated (125 V rms) and the frequency must not exceed 60.8 Hz. The inverter must cease to export power within six cycles of the frequency exceeding 60.5 Hz (8.25 ms between zero crossings). Repeat the test with the inverter output below 0.1 per unit power.

**Test 6:** With the generator and inverter output stabilized at 60 Hz and 100% of rated voltage (120 V rms) and the inverter output between 0.5 and 1.0 per unit power, ramp the generator frequency down to 59.3 Hz at a rate no greater than 0.5 Hz per second. Measure and record the frequency and voltage. The voltage must remain between 96% (115 V rms) and 104% of rated (125 V rms) and the frequency must not fall below 59.0 Hz. The inverter must cease to export power within six cycles of the frequency falling below 59.3 Hz (8.33 ms between zero crossings). Repeat the test with the inverter output below 0.1 per unit power.

It is not necessary to perform the 137% (165 V rms) test, the 110 % (132 V rms) unbalanced voltage test, or the anti-islanding test (per IEEE 929) on three-phase inverters.

### 2. Verification Testing

Upon initial parallel operation of a generating system, or any time interface hardware or software is changed, the verification test must be performed. A qualified individual must perform verification testing in accordance with the manufacturer's published test procedure. Qualified individuals include professional engineers, factory-trained and certified technicians, and licensed electricians with experience in testing protective equipment. The utility reserves the right to witness verification testing or require written certification that the testing was successfully performed.

Verification testing shall be performed at least once every four years. All verification tests prescribed by the manufacturer shall be performed. If wires must be removed to perform certain tests, each wire and each terminal must be clearly and permanently marked. The generator-owner shall maintain verification test reports for inspection by the connecting utility.

Single-phase inverters and inverter systems rated 15 kVA and below may be verified upon initial parallel operation and once per year as follows: the owner or his agent shall operate the load break disconnect switch and verify the power producing facility automatically shuts down and does not restart for five minutes after the switch is closed. The owner shall maintain a log of these operations for inspection by the connecting utility. Any system that depends upon a battery for trip power shall be checked and logged once per month for proper voltage. Once every four (4) years the battery must be either replaced or a discharge test performed.

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