

## CUSTOMER'S STANDBY GENERATION INSTALLATIONS

### 11.01 SCOPE

#### Non-Parallel Operation (Open Transition)

This chapter includes details of **Customer Installed** Residential, General Service, or Farm Service standby generator installations, where the transfer switch is provided by the customer and the Customer owned emergency standby generators are not to be operated in parallel with OPPD's electric distribution system. OPPD recognizes that some customers have a specific need for an alternate source of electrical power. This alternate source will normally be used only when OPPD's electrical service to them is unavailable.

OPPD requires notification and consultation for all standby generator installations. For general assistance in planning such installations, please telephone Customer Sales and Services Division, 636-3536, or OPPD's area office.

Please telephone Joel Haskins, 636-3335, Seth McClintock, 636-3319, or OPPD's area office for inspection of such an installation. See Section 1.02 for telephone numbers.

### 11.02 SAFETY

The following rules will assist the electrical Contractor in making a safe and acceptable installation:

1. OPPD's Electrical Service Designer shall be contacted for assistance on jobs involving an alternate source of electrical power.
2. All wiring and equipment shall comply with local ordinances, state laws, the National Electrical Code, and the rules and regulations of OPPD.
3. All wiring and equipment shall have the approval of the local inspection authority.
4. The Mechanical design of the switch shall ensure that all ungrounded conductors are positively opened from the normal source before connection is made to the alternate source and will positively open the alternate source before connection to the normal source.
5. The transfer switch shall be connected only on the load side of the OPPD metering equipment.
6. OPPD Metering Services shall inspect and approve all open transition switches.

### **11.03 GENERATOR FREQUENCY AND VOLTAGE**

The emergency standby generator shall be rated 60 Hertz alternating current and the generator voltage rating should be the same as the service voltage supplied by OPPD. If the Customer's standby generator voltage rating is not the same as OPPD's service voltage, the Customer must supply the necessary step-up, or step-down transformer(s).

For service voltage over 600 volts, or for general assistance in planning such installations, please telephone Customer Sales and Services Division, 636-3536, or OPPD's area office. See Section 1.02 for telephone numbers.

### **11.04 CONNECTION**

The Customer may supply all or a portion of his electrical load from the emergency standby generator. The Customer shall install a transfer switch or contactor to transfer all ungrounded conductors of the emergency load to either the generator or normal supply. For Service voltages of 600 volts or less, an air-break type of throw-over switch of adequate electrical capacity must be furnished, installed, and connected by the customer or his Contractor. Manually operated switches shall be of the double-throw type.

All transfer devices must:

- A. Prevent connecting the generator to the load until after the load is disconnected from OPPD's system: "break-before-make."
- B. Positively prevent accidental connection of the generator to OPPD's system at any time. The general arrangement of the wiring and equipment shall prevent any accidental connection between the normal (OPPD's) supply and the alternate supply.
- C. Provide for visible inspection by OPPD of the transfer switch or device position. Mechanically interlocked breakers or other contacts utilized in a manufacturer's assembly meeting the UL 1008 Transfer Switch standard, with visible means of determining the switch position, are acceptable. Field-engineered interlock solutions are not acceptable. Kirk-key interlocks on manufactured switchgear may be acceptable depending on the key type and other factors.
- D. Be on the customer's side of the revenue meter.
- E. Transfer switches and other transfer devices or assemblies must be a manufacturer's assembly listed by an approved testing agency for use as transfer equipment.

Automatic transfer systems must be approved by OPPD. Automatically operated switches shall be of the electrically operated and mechanically held type. The mechanical design of the switch shall be such that it will positively open all ungrounded conductors from the normal source before connection is

made to the alternate source, and will positively open the alternate source before connection is made to the normal source. On automatically operated switches, a mechanical interlock is required, and it must be of such design that it cannot be readily disabled, disconnected, improperly adjusted, removed, or otherwise made inoperative. No type of oil filled throw-over switch may be used.

Any questions regarding the above are to be referred to Joel Haskins, 636-3335, Seth McClintock, 636-3319, or OPPD's area office. See Section 1.02 for telephone numbers.

#### **11.05 EMERGENCY STANDBY GENERATOR INSTALLATION**

The Customer shall install, own, and maintain the entire installation except for OPPD's meter.

- A. The generator service disconnect and overcurrent protection may be an integral part of the generator.
- B. Individual dwelling units must have a single service disconnect and overcurrent protection on the load side of the transfer switch, except services rated 300 amperes or larger shall be permitted to have two such disconnecting means. Other occupancies may have two to six sets of service disconnects and overcurrent protection on the load side of the transfer switch.

#### **11.06 OPPD PROVIDED FARM DISCONNECT OR TRANSFER SERVICE**

A farm service disconnect switch service, or a transfer switch service, provided by OPPD, at a cost to the customer as shown in item G, rate 470 of OPPD's Electric Rate Schedules and Service Regulations manual is available to farms served at 120/240 volt, single phase, 3-wire. In addition, these farms must meet OPPD's definition of a farm as stated in definition #9 of Section A-3 of OPPD's Service Regulations. Ownership of all equipment provided with this service is retained by OPPD.

#### **11.07 PARALLEL OPERATION**

For parallel, (closed transition), operation, see OPPD's Distributed Generation (DG) Manual. Refer also to OPPD's Service Regulations D-7 and D-8.

Any operation of generation in closed transition with the OPPD system requires a signed and executed 'OPPD Agreement for Closed Transition Operation of Distributed Generation' between OPPD and the DG owner and owner's receipt of 'DG Certificate of Permission'. See DG Manual for details.

Single-phase socket detent metering, as shown on drawing 11.08, shall be provided by the customer, only for single phase customer's who want to sell their excess power back to OPPD.