Standard Form Information General Application Tips

The customer name and service address entered in the application form must exactly match the customer name and service address associated with the AEP Ohio account (refer to AEP Ohio bill for this information). Additionally, the AEP Ohio account must be in the customer's correct legal name. If the customer name on the account needs to be revised, please call the AEP Ohio Customer Solutions Center at 800-672-2231 prior to submitting an application.

All generator equipment information entered in the application form (generator/inverter model numbers, quantity, electrical properties, etc.) must exactly match what is shown on the submitted specification sheets, electrical one-line diagram, site diagram, etc. Additionally, equipment information must be properly entered using the units indicated on the application form.

Site Diagram

It must clearly display the house/building(s) and location of the generator, AEP Ohio meter and generator AC disconnect switch. It must also include the customer name and service address, installer name, and date as well as a north arrow and geographic references such as streets, driveways, AEP Ohio poles or transformers, etc. If there are any existing generators, include the same items and information for them.

Electrical One-line Diagram

It must be a legible schematic diagram of the entire generating equipment system. A title block with the customer name, service address, installer name and date must be included. It should contain all of the electrical equipment from the AEP Ohio meter to the generator including switches, fuses, breakers, panels, transformers, inverters, energy source, wire size, equipment ratings and transformer connections. Besides the Generlink and DirectPower devices all other meter collar devices used to connect a behind-the-meter (BTM) distributed energy resource (DER) are not approved for use in the AEP Ohio service territory. Clearly indicate any 3-phase transformers in the customer facility and their primary and secondary winding configurations. If there are no 3-phase transformers also indicate that on the drawing. If there are any existing generators, include the same items and information for them. The diagram must be signed and stamped by a licensed Professional Engineer if the generating equipment system is greater than 50 kW.

Technical Specifications and Documents

Submit the technical specifications literature of each component of the generating equipment system (i.e. inverters, photovoltaic modules, wind turbines, other generators, battery systems or other interface devices) which must be for the specific equipment that will be installed. A critical item for inverters is the UL 1741 approved or IEEE 1547 compliance documentation.

The technical specifications and requirements of IEEE 1547 are needed for the interconnection of all generating equipment systems, and meeting them will be sufficient for most installations. Additional technical requirements may be necessary for some limited situations. For example, when a transformer configuration within the generating equipment system, elsewhere in the customer-generator's electrical system or at the AEP Ohio transformer consist of any three-phase delta connected windings.

Proof of Insurance

Customers must maintain sufficient amounts of insurance coverage to meet its construction, operating and liability responsibilities. A copy of the customer-generator's "Certificate of Liability Insurance" or for residential customers, a current copy of the Home Owner's Declaration Page that lists Property and Liability coverage is acceptable proof. The submitted proof of insurance must indicate the current policy period, customer's service address, and the named insured must match the customer name associated with the AEP Ohio account. If the customer is an entity who is self-insured, then written notification from an authorized representative of the entity attesting to have sufficient insurance coverage may be acceptable proof of insurance.

Generating Equipment System Disconnect Switch

A readily accessible, lockable, visible-break isolation device shall be located between the Area EPS and the DER.

- AEP standards require a single isolation device between the Area EPS and all DER Facilities at a customer's premise. This is to allow the company to isolate all DER Facilities with a single operation.
    - Exceptions to the single isolation device standard are at the discretion of the Area EPS Operator and require prior approval. Exceptions will only be considered following a written request from a Professional Engineer stating the necessity for multiple isolation devices.
- The isolation device shall be installed in addition to any other disconnect type devices that may be required by other applicable codes or standards.
- The isolation device may be required to be fused or non-fused by the Area EPS Operator. It may be required to be properly fused for the size (ampacity) of the wires in a "line side tap" connection configuration, or to be non-fused when the disconnect is not intended to provide overcurrent protection.

Note: AEP strongly encourages all customers to ensure that their important loads are not electrically behind the DER isolation switch so that the load can continue to be served by AEP even when the DERs must be isolated by opening this switch.

- AEP standards require that the isolation device should be immediately adjacent to the AEP meter (within 6 feet and between 4 to 6 feet above grade) and be clearly marked with labeling that easily identifies the DER Disconnect Switch which will isolate energized equipment from the utility grid. Figures 3, 4, and 5 below are presented as examples for consideration.
    - Exceptions to the standard location for the isolation device requires prior approval by the Area EPS Operator and will only be considered following a written request stating the necessity for an exception.
    - If the Area EPS Operator approves an exception for the location of the disconnect, a permanent plaque must be placed next to the existing meter clearly stating the location of the isolation device at the premise.

Figure 3: Sample Labeling

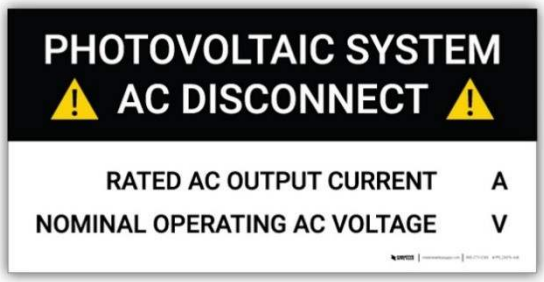

Figure 4: Sample Labeling

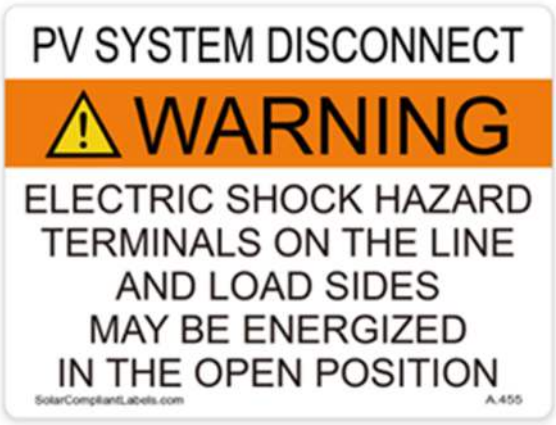

Figure 5: Sample Labeling

- AEP expects this isolation device to be properly maintained in good working condition by the interconnecting DER Customer. Where used for isolation of a DER unit that continues to produce

voltage after isolation from the Area EPS, the isolation device shall be capable of withstanding 220% of the DER rated voltage across the device for an indefinite duration.

- A knife-blade switch that conforms with the National Electric Code and has a visible break/open is an example of an appropriate isolation device for overhead installations.
- The disconnect switch itself must be readily accessible, lockable, visible-break isolation device such that AEP Ohio can lock the position of the switch in place using a padlock (a lockable cover on the switch does not meet this requirement), and plainly indicate whether it is in the open (off) or closed (on) position.

Supply-side Connections

A direct connection of the generating equipment system to the service conductors outside the main service equipment panel between the point of service and the service disconnecting means is not permitted. A supply-side connection of the generating equipment system can only take place on the supply-side of the main disconnect means or the service conductors within the main service equipment panel when suitable for that purpose. If connected on the service conductors a self-piercing connector is not recommended; instead, an insulated clamp style connector is preferred.

AEP Ohio will allow supply-side connections outside of the main service equipment panel provided the Authority Having Jurisdiction (AHJ) (i.e. State, City or County Building/Electrical Inspector) has provided documentation authorizing the connection. This in turn places full liability and responsibility on the AHJ and customer-generator. (The generator installer or certified electrician is NOT the AHJ with regard to supply-side connections). If there is no AHJ with the proper documents, as is often the case for many residential and some non-residential projects, then a supply-side connection will not be approved. AEP Ohio does not authorize nor accept the responsibility and liability of a supply-side connection outside the main service equipment panel.

A direct connection of the generating equipment system inside a meter enclosure or meter base for AEP Ohio metering is not permitted unless it is a UL Approved (SOLAR Ready type) meter• load center combination enclosure. At present other such meter bases are not available.

Inspections

The customer is responsible for ensuring the generating equipment system is inspected by the local authority that has jurisdiction for generator installations in their area and that all appropriate permits are acquired. AEP Ohio is not responsible for inspections, but does make a field verification to confirm the generating equipment system installed matches what was submitted on the application.

Application Fee

The application fee is $50 plus $1/kW of the generating system nameplate capacity rating when it is a Level 2 expedited review; otherwise, it is $100 plus $2/kW of the generating system nameplate capacity rating as a Level 3 standard review. The criteria for determining if the generating system is a Level 2 or 3 is available in our Minimum Requirements for Interconnection Service or section 4901:1-22-07 of the Ohio Administrative Code. Upon submission of the application, an invoice for the application fee will be generated and sent by PowerClerk to the party indicated in the application form as being responsible for the application fee. Instructions for payment are included on the invoice. No application fee payments should be submitted without the associated invoice number the payment is to be applied to. Pre-payments will cause a delay.

Meter Change Fee

To accommodate participation of Schedules NEMS or COGEN/SPP a dual register meter that measures the energy delivered and received is installed at actual cost, borne by the customer. With most meters currently in use this cost is typically $319 for residential and $195 for nonresidential customers. In some cases the meter may already be capable of measuring the flow of electricity in both directions, but for various reasons AEP Ohio may change the meter at no cost to the customer. If there is a cost borne by the customer, the responsible party for the meter change fee will be notified prior to AEP Ohio making a meter change. Payment of the meter change fee invoice must be made in order to advance the project to the meter installation process.

Construction Cost

The customer must pay the full actual cost for all construction on the AEP Ohio system required to accommodate the safe operation of the generator. The customer will be notified of the estimated cost. A construction agreement will be secured and payment must be received by AEP Ohio before any construction is performed. In many cases there is no construction required when the generator capacity is not greater than the AEP Ohio facilities providing electric service.

Changes to Generating Equipment Systems

AEP Ohio must be notified immediately of any generating equipment system changes at any time to ensure the safety and electric service reliability are not impacted. If there is an expansion to the generator or the addition of another type of generator, then a new application identifying the new and existing generators must be submitted. If removal of the generator occurs after the initial installation is completed, the customer must notify AEP Ohio.

Interconnection Service Agreement

The Interconnection Service Agreement will be prepared by AEP Ohio.

The generator must not be placed in service until AEP Ohio provides a Permission to Operate notification.