



Photovoltaic System Application and Checklist – For Residential Systems *S 15 kW

Add this application in addition to the City Building/Electrical Permit.

Jurisdiction: _____

Project Name: _____ Contact Name: _____

Contractor Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone/Cell: _____ Fax: _____ Email: _____

Project Location: _____

I, _____ have read the information below and acknowledge that all required documents have been provided. I understand that omissions in the required information will result in delays in the review process.

Signature: _____ Date: _____

How to complete this permit application:

- A. Fill out basic permit form per jurisdiction (this will either be an electrical or building permit form).
- B. Complete Photovoltaic System Application and Checklist.
- C. Include site plan showing location of major components on the property. This drawing need not be exactly scale, but is should represent relative location of components and show elevation. The sire plan must also show compliance with International Fire Code minimum access and pathways. Additionally, include a photo that shows the proposed access point to verify compliance with IFC 605.11.3.1.
- D. Include electrical diagram showing PV array configuration, wiring system, overcurrent protection, inverter, disconnects, required signs, and AC connection to building.
- E. Include specification sheets and installation manuals (if available) for all manufactured components including, but not limited to PV modules, inverter(s), combiner box, disconnects, and mounting system.
- F. Inquire with the jurisdiction to find out the number of copies of components A-D should be submitted.
- G. It is illegal to install prior to contacting Ameren. Call Ameren Solar customer service line at 833-803-1376.

Steps to completing a photovoltaic project:

- Step 1. Concurrently submit this permit application (see all necessary components, above) and then Net Metering/Interconnection Application to electric utility.
- Step 2. Work can begin after the jurisdiction’s permit is approved. Note: Some contractors will not begin work until the Net Metering/Interconnection application is approved by the utility, although this is not a requirement.
- Step 3. Notify jurisdiction when ready for inspection step.
- Step 4. Notify electric utility when inspection is passed.
- Step 5. Electric utility will schedule its inspection and meter exchange.
- Step 6. Electric utility will provide permission to operate (PTO).

Structural Review of PV Array Mounting System:

Roof Information:

This section is for evaluating roof structural members that are site built. This includes rafter systems and site built trusses. Manufactured trusses and roof joist systems, when installed with proper spacing, meet the roof structure requirements as well.

1. Is the array to be mounted on a defined, permitted roof structure? Yes No

2. Roof Age: Structure: <5 yrs. 05-10 yrs. 020-30 yrs. 030+ yrs.
 Covering: < 5 yrs. 05-10 yrs. 020-30 yrs. 030+ yrs.

3. Is the roofing type lightweight (Yes=composition, lightweight masonry, metal, etc..... _____
{No= heally masonry, slate, etc...}

4. Does the roof have a single covering? Yes No

5. Provide method and type of weatherproofing roof penetrations (e.g. flashing, caulk)

6. Roof Construction: Rafters Trusses Other: _____

7. Describe rafter or truss system.

a. Rafter Size: _____ x _____ inches

b. Rafter Spacing: _____ inches

c. Maximum unsupported span: _____ feet, _____ inches

8. Are rafters or trusses in good condition, i.e. have not been adversely altered and no visible damage? Yes No

9. Is the rafter or truss design unusual or abnormal? Yes No

10. Are the rafters or trusses made out of non-standard materials? Yes No

11. Have the rafters or trusses been modified in any way (e.g. drilled holes, etc.) Yes No

Need a structural engineer's stamp: if you answered "No" to question #8 or "Yes" to any of the questions numbered 9-11, a structural engineer's stamp will be required by the local jurisdiction issuing the permit. A framing plan is also required if strengthening the rafters/trusses is necessary.

(Structural Review of PV Array Mounting System-continued)

Mounting System Information:

This section provides information on how the PV modules will be mounted to the roof. It is very important to have enough attachment points to adequately spread the dead load across as many roof-framing members as needed so that the point loads created at attachment point account for additional snow load (the Kansas City region has a 20 psf ground snow load).

12. Is the mounting structure an engineered product designed to mount PV modules with no more than 18" gap beneath the module frames? Yes No

Need a structural engineer's stamp: If you answered "No" to question #12, a structural engineer's stamp will be required by the local jurisdiction issuing the permit. Must include design for uplift including system to rafter detail as well as a framing plan if strengthening the rafters trusses is necessary.

13. Fill out information on the mounting system below:

d. Mounting System Manufacturer _____ Product Name & Model# _____

e. Total Weight of PV Modules and Rails _____ lbs.

f. Total Number of attachment points _____

g. Weight per attachment points (b+c) _____ lbs.

h. Maximum spacing between attachment points on a rail _____ inches

See product manual for maximum spacing allowed based on maximum design wind speed. To ensure proper weight distribution: For each successive rail attachment points should occur on rail ends and then should be staggered based on 16" or 24" on Center rafter spacing.

i. Total surface area of PV Modules (square feet), _____ ft²

j. Distributed weight of PV Module on roof (b+f) _____ lbs/ft²

k. Mounting frame to rafter framing: Self-ballasted Penetrating

If penetrating, please provide for fasteners:

Type: _____ Size: _____ Number: _____ Spacing: _____ inches

14. Additionally, please attach a cross-section detail that shows rafter size, spacing, number of attachment points, span Dimensions, and approximate roof slope.

Electrical Review of PV System (Calculations for Electrical Diagram)

In order for a PV system to be processed using this application, the following must be true:

1. PV modules, utility-interactive inverters, and combiner boxes are identified for use in PV systems.
2. The PV array is composed of 4 series strings or less per inverter.
3. The AC interconnection point is on the load side of service disconnecting means (690.64(B))
4. A standard electrical diagram can be used to accurately represent the PV system.

