



CITY OF MESA
DEVELOPMENT SERVICES
RESIDENTIAL PHOTOVOLTAIC SYSTEM REQUIREMENTS

PROJECT STREET ADDRESS: _____

PERMIT # _____

THIS CHECKLIST CAN BE USED AS A GUIDE WHEN REVIEWING PLANS FOR A RESIDENTIAL PHOTOVOLTAIC SOLAR SYSTEM. THESE COMMENTS CAN BE CUT AND PASTED INTO YOUR ELECTRONIC DOCUMENT REVIEW. **NOTE: THIS IS TO BE USED AS A GUIDE AND NOT AS A COMPLETE COMPREHENSIVE LIST. ADDITIONAL ITEMS THAT ARE NOT INCLUDED ON THIS LIST MAY BE IDENTIFIED DURING THE REVIEW PROCESS.**

General:

- _____ 1. If plans are sealed by an architect or engineer, they must be licensed by the State of Arizona.
- _____ 2. Is the solar system being installed under an incentive program sponsored by a serving utility or government entity? If yes, answer questions 3, 4, 5, & 6.
- _____ 3. Is the de-rating of the breaker allowed under the listing of the SES manufacturer?
- _____ 4. Is the back-fed breaker listed for the proposed back feeding?
- _____ 5. Does this proposed installation meet the 2017 NEC code requirements?
- _____ 6. Is the SES going to be modified in any way that would void the listing?

Site Plan:

- _____ 7. Provide a fully dimensioned site plan, drawn to scale, include property lines, fence and gate locations, address and lot number.
- _____ 8. Include on the site plan the location of the PV installation and any other equipment being installed. Include an elevation of the wall the equipment is mounted to.

Roof Plan:

- _____ 9. Show the array configuration on the roof.
- _____ 10. Provide mounting details for the PV panel installation along with the attachment method.
- _____ 11. Provide the weight of the array. If the photovoltaic system exerts a point load greater than 40 pounds, sealed structural engineering is required.
- _____ 12. If the house is less than 30 years old and array weight is less than 5lbs/sq ft, structural engineering is not required. If either or both of these points are exceeded provide sealed structural engineering.

- _____ 13. Roof rafters, not considered pre-manufactured trusses (flat roofs), shall provide structural engineering specifying point loads and dead loads.
- _____ 14. Manufactured/Mobile homes will require structural engineering for panels located on the roof.

Electrical Plan:

- _____ 15. Provide an electrical one-line diagram and three-line diagram. Make a note at the one-line diagram that PV equipment shall be installed in accordance with the 2017 National Electric Code Article 690 and show all required sign locations, with verbiage.
- _____ 16. Provide electrical load calculations and panel schedule for the de-rate of panels.
- _____ 17. Show equipment grounding and bonding as required by NEC 690.41 through NEC 690.50.
- _____ 18. Show the disconnect, both DC and AC.
- _____ 19. For PV systems operating at 80 volts DC or greater between any two conductors shall be protected by a listed PV arc-fault circuit interrupter or other system components listed to provide equivalent protection.
- _____ 20. Provide a rapid shutdown function to reduce the shock hazard for emergency responders in accordance with NEC 690.12(a) through (D).
- _____ 21. Provide array wiring size and type. Include all wire sizing from the PV roof panel to the electrical service panel.
- _____ 22. Provide conduit size and type.
- _____ 23. Clearly show all locations that the conduit will run. Inside and outside the house.
- _____ 24. Specify the inverter type, model, manufacturer, etc.

Manufacturer's cut sheets:

- _____ 25. Provide cut sheets for the solar panels. PV panels shall be UL 1703 and UL 2703 listed as required in 2018 IRC 902.4.
- _____ 26. Provide cut sheets for the inverter. Inverters shall be UL 1741 listed as required in 2018 IRC 324.3.1.
- _____ 27. Provide cut sheets for the roof mounting system.
- _____ 28. Provide cut sheet for DC combiner (if applicable).
- _____ 29. Provide cut sheets for any photovoltaic alternative energy service panel (if applicable).