To schedule an inspection, please call (fill in number), email (fill in name) at (fill in email address), and/or visit us online at (fill in web address).

Required Documentation

☐ Manufacturer's specifications for the inverter
☐ Manufacturer's specifications for the module
☐ Manufacturer's specifications for the optimizer (if used)
☐ Verification that the racking system grounding and bonding is listed

Inspections Process FAQ’s

• How many inspections are required for accessory use solar PV projects? Which specific inspections are those?
  o Best Practice: “Projects that are installed per their manufacturer specifications, Minnesota state building codes, and Minnesota state electrical codes, can expect to have no more than two inspections: One Building Inspection, and one Electrical Inspection.” If not, describe your community’s protocol.

• Does the city offer inspection appointment times in lieu of appointment windows for solar PV?
  o Best Practice: “Offer inspection appointment times in lieu of appointment windows for solar PV.” If not, describe your community’s protocol.

• How many days does the City take to complete solar PV inspections after the inspection request?
  o Best Practice: “Same-day inspections, or within 5 business days after inspection request.”

• Does the city provide an online process for solar PV Inspection scheduling?
  o Best Practice: “Provide an online process for solar PV inspection scheduling.”

• What details will inspectors be looking for?
  o Reference the MN Department of Labor & Industry’s “Solar PV Resources” webpage, as well as the following four (4) inspections categories below: 1. PV Inverter, 2. Wiring Methods & Disconnecting Means, 3. System Grounding, 4. Interconnection.
    o Include link to any other local resources if applicable.

• How much will my inspection cost?
  o Best Practice: Reference pages 8-10 of the MN Department of Labor & Industry’s “Solar PV Systems and Energy Storage Systems – FAQ” Document for the “MN Solar PV System Electrical Inspection Fee Chart”; or, include your community’s own fee schedule if different.
1. **PV Inverter**
   - Is the PV system utility-interactive or standalone? 690.2
   - Is all the equipment listed for PV application? 690.4
   - Is the system grounded or ungrounded? (if ungrounded, the system needs to comply with 690.35)
   - Has DC Ground-Fault Protection been provided and properly labeled? 690.5 & 690.35(C)?
   - What is the maximum PV system voltage? 690.7
   - Is all listed equipment rated for the maximum voltage? 690.7
   - Determine the maximum circuit current for the PV Source and Output Circuit; Inverter Output Circuit; Stand-Alone Inverter Input Circuit; and DC to DC Converter Output (refer to inverter documentation)

2. **Wiring Methods and Disconnecting Means**
   - Are the conductor and cable ampacities determined at 125% before adjustment factors? 690.8 (B)
   - How are the PV Source and Output Circuit protected from overcurrent? 690.9 (A&B)
   - Do AC or DC OCPD’s have the appropriate voltage, current and interrupt ratings? 690.9(C)
   - Has arc-fault circuit protection been provided for DC source and/or output circuits? 690.11
   - Is a rapid shutdown required and if so, how is it accomplished and identified? 690.12
   - Is the PV disconnect permanently marked and installed in a readily accessible location? 690.13
   - Has the fuse disconnecting means, if required, been installed? 690.16
   - Are PV source or output circuits > 30 volts in a raceway or guarded if readily accessible? 690.31
   - Is single conductor cable used outdoors Type USE-2 or listed & labeled PV wire? 690.31(C)
     (Ungrounded systems must be labeled PV wire only. 690.35)
   - Are PV source or output circuits on or inside a building in a metal raceway and marked? 690.31(G)
   - Are all connectors polarized, guarded, latching-type or tool-safeguarded, rated to interrupt the available current or labeled "Do Not Disconnect Under Load"? 690.33

3. **System Grounding**
   - Has the system been grounded at one single point? 690.42
   - Are all exposed non-current carrying metal parts of the PV system grounded? 690.43(A&B)
   - Are the mounting structures or systems used for equipment grounding? 690.43(C&D)
   - Are the interconnecting devices used for equipment grounding listed and identified? 690.43 (C&D)
   - Is the EGC properly sized and protected if exposed and smaller than #6? 690.50, 250.122, 250 .120(c)
   - Has the grounding electrode system been installed? 690.47
   - If both are present, has the DC grounding electrode system been bonded to the AC GES? 690.47(C)
   - Was an auxiliary electrode installed at the array? 690.47
4. Interconnection

☐ Has a plaque or directory been installed at each disconnecting means (capable of interconnection) denoting all electric power sources & power production sources? 705.10
☐ Has the point of connection to other sources been installed per 705.12? 690.64
☐ Is the supply side disconnect readily accessible and within 10’ of the connection point? 705.12 (A)
☐ Are the utility interactive inverters connected to the system through a dedicated circuit breaker or fusible disconnecting means? 705.12(D)(1)
☐ Does the bus or conductor ampacity comply with 705.12(D) (2)?
☐ Have all the required labels been applied? (See appendix 1 “NEC Labelling Requirements”)

Appendix 1 – “NEC Labelling Requirements”

<table>
<thead>
<tr>
<th>Section</th>
<th>Location of Label</th>
<th>NEC Labeling Requirements</th>
<th>Location of Label</th>
<th>Label Text and Appearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>690.5(C)</td>
<td>Shall appear on the utility interactive inverter or be applied by the installer near the ground fault indicator at a visible location</td>
<td>WARNING</td>
<td>690.54</td>
<td>All interactive system(s) points of interconnection with other sources shall be marked at an accessible location at the disconnecting means as a power source and with the rated ac output current and the nominal operating ac voltage.</td>
</tr>
<tr>
<td>690.35(F)</td>
<td>Shall be labeled with the following warning at each junction box, container box, disconnect, and device where energized, ungrounded circuits may be exposed during service.</td>
<td>WARNING</td>
<td>690.35</td>
<td>ELECTRICAL SHOCK HAZARD</td>
</tr>
<tr>
<td>690.13(B) 690.15</td>
<td>Each PV system disconnecting means shall be permanently marked to identify it as a PV system disconnect.</td>
<td>WARNING</td>
<td>690.13</td>
<td>ELECTRICAL SHOCK HAZARD</td>
</tr>
<tr>
<td>690.53</td>
<td>A permanent label for the direct current PV power source indicating the information specified in (1) through (5) shall be provided by the installer at the PV disconnecting means.</td>
<td>WARNING</td>
<td>690.53</td>
<td>ELECTRICAL SHOCK HAZARD</td>
</tr>
<tr>
<td>690.31(G)(3)</td>
<td>The following wiring methods and enclosures that contain PV power source conductors shall be marked: (1) Exposed raceways, cable trays, and other wiring methods (2) Covers or enclosures of pull boxes and junction boxes (3) Conduit bodies in which any of the available conduit openings are unused</td>
<td>WARNING</td>
<td>690.31</td>
<td>PHOTOVOLTAIC POWER SOURCE</td>
</tr>
</tbody>
</table>