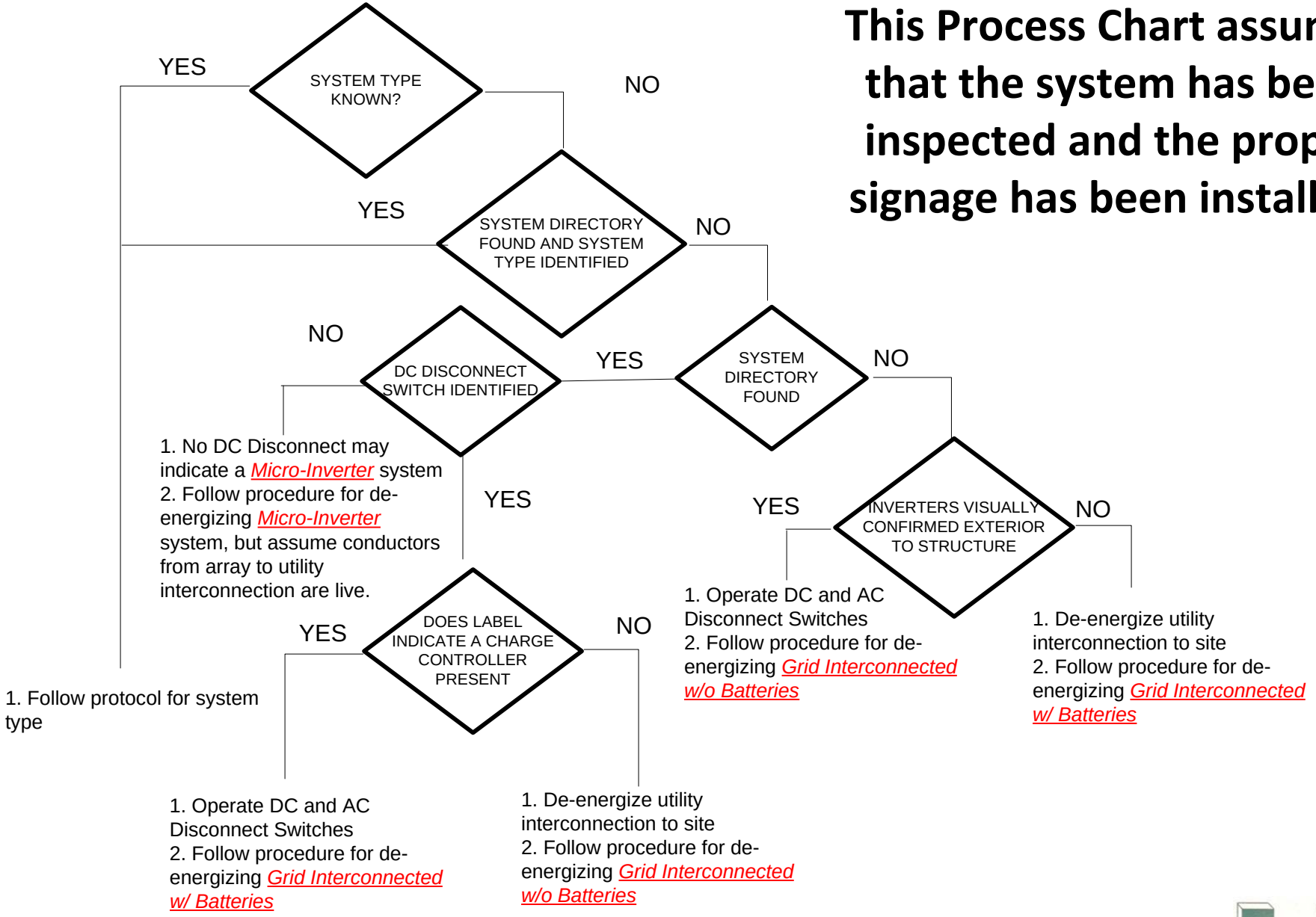
1) Address Identified

2) Check information system(s) to determine if solar electric system is on site and if type of system is known:



This Process Chart assumes that the system has been inspected and the proper signage has been installed.

MICROINVERTER SYSTEM

DC circuits are from the solar modules to the inverter.
DC circuits are energized whenever solar modules are exposed to sunlight.

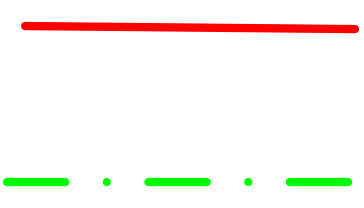
DC circuits are usually limited to directly under the solar modules for microinverter systems as the inverter is often attached to the module or to the rack which is directly underneath the module.

De-energizing ac power to the building will disconnect utility energy from the disconnecting point to the solar modules.

The ac disconnecting point may be
1) Utility meter
2) Labeled solar electric system disconnect switch
3) Labeled solar electric system breaker in a main or subpanel

DISCONNECTING SEQUENCE

1. Look for the System Directory. Usually located at the building's main service disconnecting point.
2. Disconnect utility power to building.
3. AC conductors from utility to disconnecting point are energized.
4. Avoid DC conductors immediately underneath the solar modules.



Normally energized when sunlight is present

De-energized if disconnect between the power source (utility or solar) and equipment is disconnected in off position

MICROINVERTER SYSTEM

SOLAR ELECTRIC SYSTEM DIRECTORY

AC Disconnect Switch Location is xyz

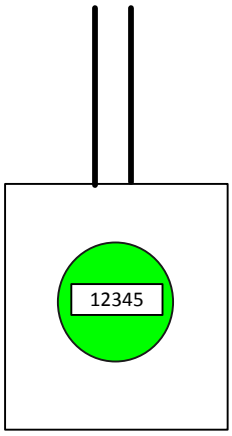
This label may be at the house's external breaker, switch or main panel (least preferred if interior)

DC conductors

(between module and inverter)

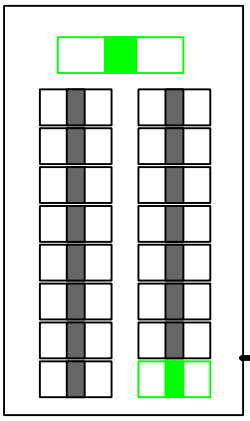
AC conductors

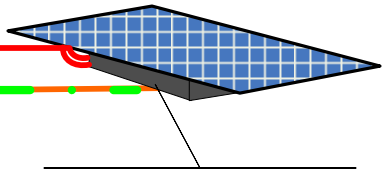
TO UTILITY



Utility Meter

Main Panel



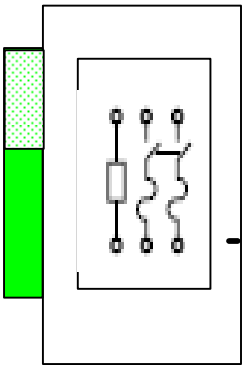


Inverter

No DC Disconnect Switch

OR

AC Utility Rated Disconnect Switch



Solar Electric System AC Disconnect Switch

Nominal ac Voltage =

Maximum ac Current =

GRID INTERCONNECTED WITHOUT BATTERY

DC circuits are from the solar modules to the inverter.
They normally are in metallic conduit.
DC circuits are energized whenever solar modules are exposed to sunlight.

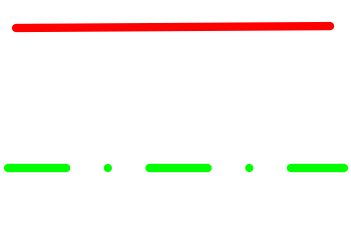
Operating the dc disconnection switch will de-energize from that point to the inverter. It will NOT de-energize from that point back to the solar modules.

De-energizing ac power to the building will de-energize the ac circuit from the disconnecting point to the inverter.

The ac disconnecting point may be
1) Utility meter
2) Labeled solar electric system disconnect switch
3) Labeled solar electric system breaker in a main or subpanel.

DISCONNECTING SEQUENCE

1. Look for the System Directory. Usually located at the building's main service disconnecting point.
2. Disconnect utility power to building and operate dc Disconnect Switch.
3. AC conductors from utility to disconnecting point are energized.
4. Avoid dc conductors immediately underneath the solar modules to the dc disconnect switch.



Energized when sunlight is present

De-energized if disconnect between the power source (utility or solar) and equipment is disconnected in off position

GRID INTERCONNECTED WITHOUT BATTERY

SOLAR ELECTRIC SYSTEM DIRECTORY

DC Disconnect Switch
Location is abc
AC Disconnect Switch
Location is xyz

This label may be at the house's external breaker, switch or main panel (least preferred if main panel is inside)

DC conductors

Maximum Charge Controller Current

DC conductors in metallic conduit in building interior

Solar Electric System DC Disconnect Switch

Max dc Voltage
Max dc Current
Operating dc Voltage
Operating dc Current

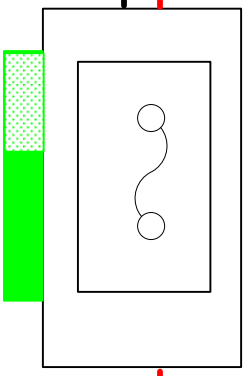
AC conductors

TO UTILITY

12345

Utility Meter

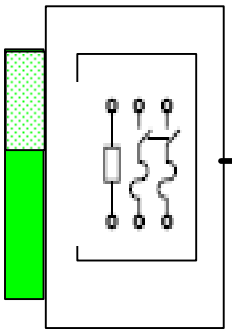
Main Panel



DC Disconnect Switch or Fused Combiner Box

Inverter

OR



AC Utility Rated Disconnect Switch

Solar Electric System AC Disconnect Switch

Nominal ac Voltage =
Maximum ac Current =

GRID INTERCONNECTED WITH BATTERY

DC circuits are from the solar modules to the inverter. They normally are in metallic or PVC conduit. DC circuits are energized whenever solar modules are exposed to sunlight.

De-energizing ac power to the building will de-energize the ac circuit from the disconnecting point to the inverter.

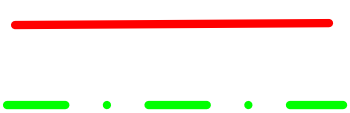
The ac disconnecting point may be
1) Utility meter
2) Labeled solar electric system disconnect switch
3) Labeled solar electric system breaker in a main or subpanel

HOWEVER, turning off the ac disconnecting point will NOT DE-ENERGIZE the inverter's emergency power circuit.
This circuit powers the building's important electrical systems such as: furnace, well, computers, refrigeration, etc.

These circuits are often grouped together in a separate solar electric panel. These circuits are energized until the inverter is turned off, which is accomplished by turning off the battery power switch to the inverter [BATTERY SHUT DOWN BREAKER].

DISCONNECTING SEQUENCE

1. Look for the System Directory. Usually located at the building's main service disconnecting point.
2. Disconnect utility power to building, and operate DC Disconnect Switch.
3. AC conductors from utility to disconnecting point are energized unless meter is pulled.
4. AC conductors from Inverter to Battery Powered Panel are energized unless INVERTER SHUT DOWN BREAKER is OFF.
5. Avoid DC conductors immediately underneath the solar modules to the DC Disconnect Switch.



Energized when sunlight is present

De-energized if disconnect between the power source (utility or solar) and equipment is disconnected in off position

GRID INTERCONNECTED WITH BATTERY

SOLAR ELECTRIC SYSTEM DIRECTORY

DC Disconnect Switch
Location is abc
AC Disconnect Switch
Location is xyz

This label may be at the house's external breaker, switch or main panel (least preferred if main panel is inside)

DC conductors

DC conductors in metallic conduit in building interior

Solar Electric System DC Disconnect Switch

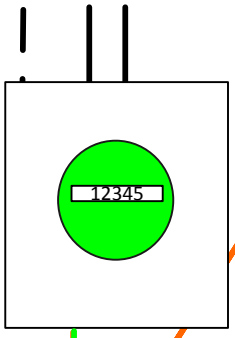
Max dc Voltage
Max dc Current
Operating dc Voltage
Operating dc Current

Battery Powered Panel is only de-energized when Inverter Shut Down Breaker is in OFF position.

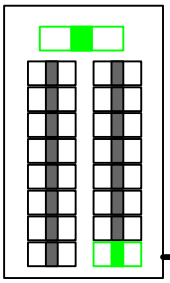
Emergency Power Panel

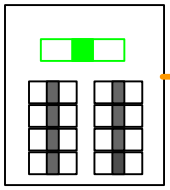
AC conductors

TO UTILITY



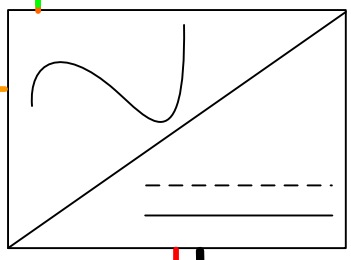
Main Panel



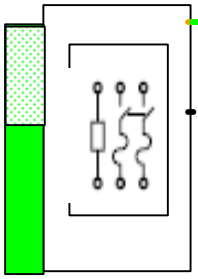


DC Disconnect Switch or Fused Combiner Box

Inverter

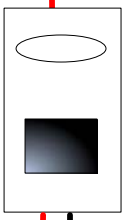


OR



AC Utility Rated Disconnect Switch

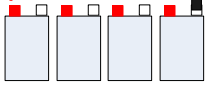
Charge Controller



Solar Electric System AC Disconnect Switch

Nominal ac Voltage =
Maximum ac Current =

INVERTER SHUT DOWN BREAKER



Battery Bank

UTILITY INTERCONNECTED

DC circuits are from the solar modules to the many combiner boxes before going on to the inverter. They normally are in metallic pv PVC conduit.
DC circuits are energized whenever solar modules are exposed to sunlight.

De-energizing ac power to the building will NOT de-energize the ac circuit from the disconnecting point to the inverter.
In fact, a building may not even be on site.

De-energizing the ac disconnecting means will de-energize the ac circuit from the disconnecting point to the inverter.

The ac disconnecting point will be
1. Labeled solar electric system disconnect switch
This switch will most likely be protected by a fence, locked enclosure, or some other barrier.

DISCONNECTING SEQUENCE

1. Look for the System Directory. Usually located at the building's main service disconnecting point.
2. Disconnect utility power to Inverter, and operate dc Disconnect Switch.
3. AC conductors from utility to disconnecting point are energized.
4. AC conductors from disconnecting point to Inverter are energized unless disconnect is in OFF position.
5. Avoid DC conductors from the solar modules to the dc Disconnect Switch.

Energized when sunlight is present

De-energized if disconnect between the power source (utility or solar) and equipment is disconnected in off position

UTILITY INTERCONNECTED

SOLAR ELECTRIC SYSTEM DIRECTORY

DC Disconnect Switch
Location is abc
AC Disconnect Switch
Location is xyz

AC conductors

DC conductors

This label should be at the Solar Electric System Utility Disconnect Switch

TO UTILITY

Solar Electric System AC Disconnect Switch

Nominal ac Voltage =
Maximum ac Current =

DC Disconnect Switch or Fused Combiner Box

12345

Inverter

Below the dashed line may not be present

Solar Electric System DC Disconnect Switch

Max dc Voltage
Max dc Current
Operating dc Voltage
Operating dc Current

Main Panel

GRID ISOLATED WITH BATTERY

DC circuits are from the solar modules to the inverter.
They normally are in metallic conduit.
DC circuits are energized whenever solar modules are exposed to sunlight.

There is no utility interconnection, however, there may be a generator interconnection. De-energizing ac power to the building will de-energize the ac circuit from the disconnecting point to the inverter.

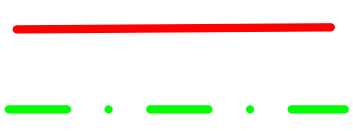
The ac disconnecting point may be:
1) Labeled generator disconnect switch

HOWEVER, this switch will NOT DE-ENERGIZE the inverter's emergency power circuit. This circuit powers the entire building. These circuits are energized until the inverter is turned off, which is accomplished by turning off the battery power switch to the inverter [BATTERY SHUT DOWN BREAKER].

In rare cases, there may be DC circuits usually emanating from a dc subpanel. Turning off the battery shut down breaker to the Inverter will NOT DE-ENERGIZE the dc circuits. They are powered directly from the battery. The electric panel's main breaker must be turned off.

DISCONNECTING SEQUENCE

1. Look for the System Directory. Usually located at the building's main service disconnecting point.
2. AC conductors from inverter to Battery Powered Panel are energized unless INVERTER SHUT DOWN BREAKER (BATTERY BREAKER) is OFF.
3. Avoid dc conductors immediately underneath the solar modules to the dc disconnect switch.
4. If a dc subpanel is present, the dc conductors to this panel usually are energized directly off the battery. If there is no disconnecting switch or breaker between the battery and the subpanel, turning off the subpanel is only way to de-energize the dc subpanel. The conductors between the battery bank and the dc subpanel will still be energized.



Energized when sunlight is present

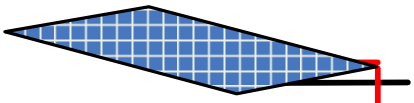
De-energized if disconnect between the power source (utility or solar) and equipment is disconnected in off position

GRID ISOLATED WITH BATTERY

SOLAR ELECTRIC SYSTEM DIRECTORY

DC Disconnect Switch
Location is abc
AC Disconnect Switch
Location is xyz

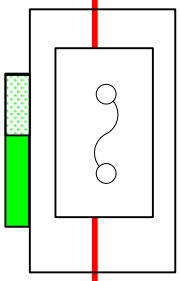
This label should be visible on the exterior of the house



DC conductors

DC metallic conduit

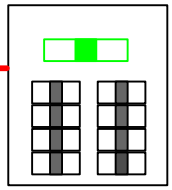
Battery Powered Panel is only de-energized when Inverter Shut Down Breaker is in OFF position.



DC Disconnect Switch or Fused Combiner Box

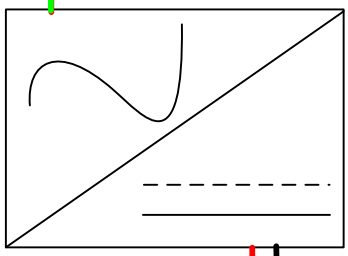
Solar Electric System AC Disconnect Switch

Nominal ac Voltage =
Maximum ac Current =



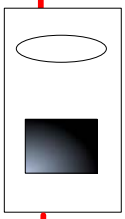
AC Conductors

Inverter

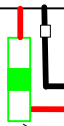


Solar Electric System DC Disconnect Switch

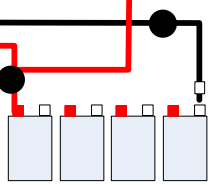
Max dc Voltage
Max dc Current
Operating dc Voltage
Operating dc Current



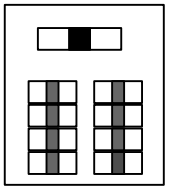
Charge Controller



INVERTER SHUT DOWN BREAKER



Battery Bank



DC Powered Circuits
(Not present in most systems)

From DC Source