

## ARE THE SOLAR PANELS ON YOUR ROOF PROTECTED FROM ELECTRICAL ARCS AND GROUND FAULTS?

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Solar powers largest growth period in New Jersey was in 2011 and 2012 with many roof top installations being installed. These installations were constructed prior to the adoption of the most recent code (National Electric Code NEC 2014) and most likely were not designed with the newly required arc/ground fault specifications.

### SO, WHAT DOES THAT MEAN FOR YOU?

Most likely, nothing if your system is well maintained on a monthly basis. But there are no guarantees that a fault might not occur even on a well-maintained system.

Chances are that the solar panel system was designed and installed in accordance with the code at the time of the installation and the system is safely operating. But with the adoption of the new code came new requirements that has added levels of protection that can detect faults in the system. In addition, code changes added a rapid shut down system that acts as a panic button and can disconnect certain parts of the solar array to provide a better and safer system and help avoid potential roof fires that could lead to structure fires and extensive damage.

### DO YOU NEED TO UPGRADE YOUR SYSTEM NOW?

It's not currently code-required, but if you want that comfort level of knowing that there is more protection, it may warrant an upgrade. But upgrades do not come cheap; some of the hurdles that one may face can range from replacing inverters and associated wires and strings, to just swapping out combiner boxes.

Many previously-installed solar panel arrays are typically 600-volt systems using a 600-volt inverter. Unfortunately, many of the inverter manufacturers do not currently offer a line of 600-volts inverters because systems have generally been increased to 1000-volts and 1500-volts. Therefore, if the system would require an inverter change, selections may be limited and an alternate design might be required.

### IN SUMMARY

If your building has an older solar array built prior to the new electric code, chances are that arc/

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ground fault protections may not be in place; however, the system may be able to be modified to provide some or all of the new protections.

Whitman has experience in reviewing and designing upgrades to existing arrays and provides full turn-key design and support services. Whitman has more than 270-megawatts of solar design experience in multiple States, that's about 43,200 houses.

If you have any questions regarding solar panel systems or would like a quote to review an existing solar array, please contact Carey Ruetsch, Vice President of Engineering at 732-390-5858, or [cruetsch@whitmanco.com](mailto:cruetsch@whitmanco.com).

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