

OPTIMIZING PV SAFETY GROUNDING

Authors:

Carson Bates
cbates@neieng.com

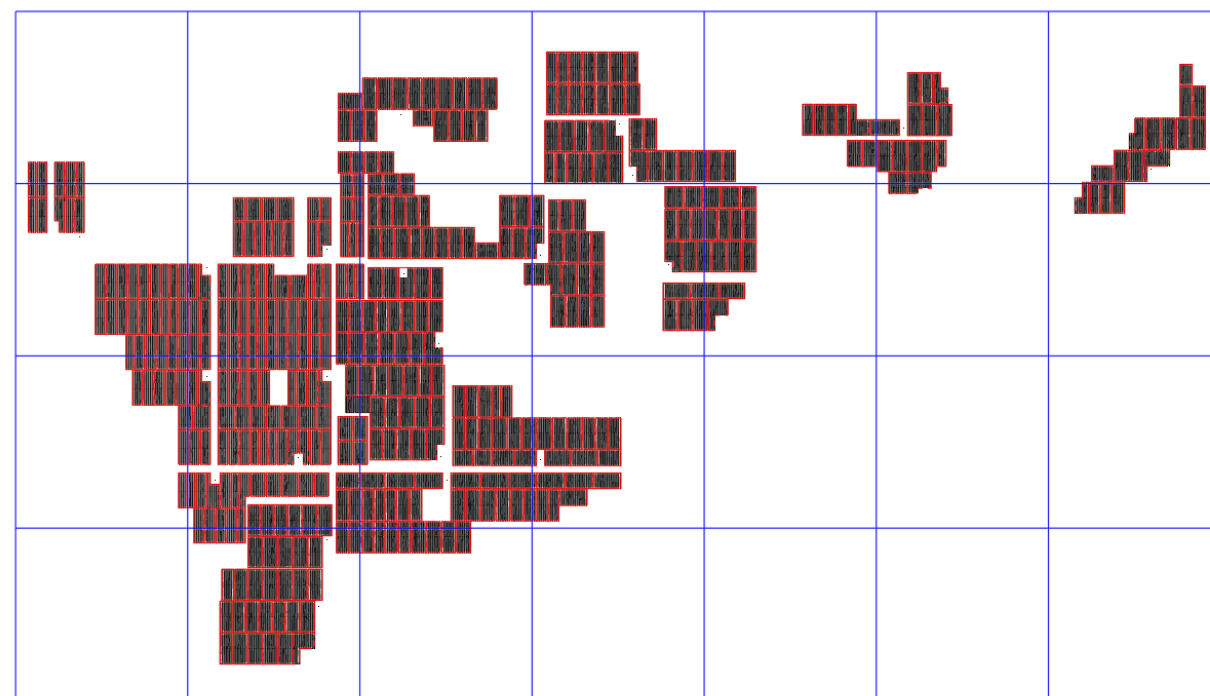
William Ciccone
wciccone@neieng.com

Louis Menard
lmenard@neieng.com

PV facilities typically have odd shapes and large layouts making the challenges for creating safe grounding solutions more apparent than in substations and other renewables technologies.

Obtaining quality soil resistivity data is influential in the analysis.

Following IEEE 2778 is recommended for collecting soil resistivity data.



Inverter Grounding

- Standard ground ring with ground rods

Trench Ground Wires

- DC connections to trackers
- AC ground wire works with concentric neutrals

PV Tracker Grounding

- Bonding piles & torque tube
- Each pile acts as a ground rod

Fence Grounding

- Distance from modules to fence
- Ground rods & isolation panels

Safety Assumptions

- Clearing time
- IEEE 80

Since the grounding network is interconnected, decisions made in all stages of the project design affect the resulting grounding network's performance and risk management for electrical hazards.

