

## CASE STUDY

### Solar Site Evaluation and Resolution

#### OVERVIEW

RLC served as Solar O&M Engineer for Alternate Power & Energy (AP&E) in Hinsdale, Massachusetts. AP&E experienced significant loss of production following the initial approval to operate from the local utility on their new 1,988 kW solar site.

*"After experiencing months of frustrating utility nuisance trips and underperforming inverter output at our Hinsdale, MA solar site, I reached out to the engineers at RLC Engineering. I needed an engineering firm that was not only familiar with the proper design of a photovoltaic system but also one that had experience working with electric utility companies. RLC Engineering quickly uncovered design errors that were causing our inverters to malfunction and worked directly with the utility company to substantially reduce having our PV system offline. RLC Engineering continues to provide support to AP&E for several of our large scale solar PV sites."*

*– Roger Gaydou, CEM, Operations Manager, AP&E*

#### THE APPROACH

- Review availability and accuracy of as-built documentation (one line, three line, site plan, test reports, equipment manuals, etc.)
- Troubleshooting utility side nuisances trips due to unbalance faults, and DTT anti islanding protection
- Power Quality Assessment
- Evaluate system monitoring site for inverter faults and lack of production
- Visual Inspection of all electrical equipment and critical connection points
- Inspection of equipment for nonconformance issues
- Document production loss problems and provide actionable plans to investigate and resolve issues

#### THE CONCLUSION

RLC led the troubleshooting effort with site personnel, the electrical contractor, Direct Transfer Trip (DTT) contractor, and the interconnecting utility to resolve many utility side nuisance trips experienced by the site. Further investigation into the site's design and construction resulted in pinpointing design errors that hindered system performance, and resulted in damage to inverters. RLC provided timely and simple resolutions that immediately led to increased production. Continued Solar O&M efforts followed to monitor system performance and provide engineering support for warranty claims. Production increased so much that the entire RLC Engineering Solar O&M consulting fees were recovered in less than a month.