

The Energy Challenge

New Jersey's largest and oldest utility needed reliable off-grid power for its tower safety obstruction lighting along 45 miles of new transmission lines being built to maintain the reliability of the electric grid for millions of people in the Northeast.

Northern Reliability's Off-Grid Power Solution

35 Solar Obstruction Lighting Systems (SOLS), providing day and night safety lighting for transmission towers, powered entirely by renewable solar energy.

Benefits

No Generator Required

Powered entirely on photovoltaics this systems saves on fuel costs

Low Maintenance

Remote monitoring, no refueling costs and no moving parts

0 Grid-tied Power Needed

Cost-effective stand-alone source of on-site power



System Configuration:

1530 Watts of photovoltaic power installed on custom-designed tower mounting system

AGM VRLA deep-cycle battery, 1000 AmpHr capacity

FAA compliant ORGA L-866/865 Medium intensity LED strobe, with two L-810 sidelights at mid-tower for day and night lighting

Thermostatically controlled equipment shelter with dual vent gates and environmental controls to maintain optimal operating conditions

Interconnected customer SCADA network for real time smart monitoring



Project Profile, Public Service Electric & Gas (PSE&G), New Jersey

Utilities are in the business of providing reliable and cost-effective power to their customers. Northern Reliability is in the business of supporting utilities in their smart-grid infrastructure upgrades including PSE&G's new 500,000-volt transmission line being built to maintain and enhance the reliability of the electric grid for millions of people in the Northeast.

In need of proven FAA compliant obstruction lighting solutions for its new transmission powers, PSE&G chose Northern Reliability for its experience in industrial grade power solutions for off-grid applications, and its turn-key suite of solutions from engineering to installation to O&M.

Northern Reliability provided PSE&G 35 Solar-powered obstruction lighting systems, each integrating a 1530-watt solar array with a deep-cycle battery bank which stores the harvested energy to power the safety beacons during periods of low solar availability. Our team custom designed tower mounting solutions for each of the three different styles of utility towers used on the PSE&G project. The system's battery bank and controls are housed in a custom-designed SOLS environmental enclosure, located at the base of each tower.

As self-contained, stand alone power sources, Northern Reliability's SOLS systems provide cost savings to PSE&G by eliminating the need to install a second, low-voltage distribution line to power the FAA required safety beacons along the transmission line route. Obstruction safety lighting also eliminates the need to continually paint the towers for increased visibility, reducing PSE&G's ongoing maintenance costs.

"Northern Reliability's obstruction lighting and power solutions were integral to our project. We had challenging deadlines and site limitations, and their highly skilled team worked closely with us to help meet our goals."

- Randy Koncelik, Sr. Project Manager, PSE&G