

Substation Protection

A worldwide perspective,
\$96 billion is lost to electricity theft every year and NERC CIP-014 non-compliance penalties up to **\$1 million** per day.

SpotterRF Compact Surveillance Radar

- Full perimeter interior and exterior security
- Assist and help with NERC CIP-014
- Prevents theft detection before it happens
- Reduce false alarms
- Easy to deploy, small, low power and weight
- Save 1/3 cost of other systems

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Protection Beyond Fences



Perimeter Dangers



*"CIGRE claims that any given substation has an **88% probability** of losing between \$1,500 to \$20,000 in a year from copper theft alone, not to mention the damage and costs of repair. Additionally, there is a **10% chance** that a substation will lose up to **\$400,000** in a single year."*

To a worldwide perspective, using data from Northeast Group, \$96 billion is lost to electricity theft every year. SpotterRF is currently changing the industry in reducing the staggering \$96 billion lost every year.

TEST: Sensei Solutions recorded 1300+ alarms per day over a 90 day period when using video analytics without radar.

RESULTS: SpotterRF Radar the number of alarms plummeted down to 20 real alarms per day and more impressive is that there were no false alarms when using the radar in the test.

SpotterRF was able to capture every real alarm proving their unparalleled performance through algorithms.



SpotterRF Benefits

Used by 8 of the top 10 utilities in America, SpotterRF for years has helped substations by enhancing the existing security system.

- Assist and help with NERC CIP-014.
- Reduce false alarms.
- Help eliminate the risk of copper theft.
- Detecting and tracking the geolocation of humans, vehicles, animals or drones and automatically classifies them. By using a PTZ camera, video feed is cued onto the target, and deterrents are automatic activated until the target is no longer a threat.
- Cover the entire inside area of the substation and well beyond the fence line. Some substations also use the radars to activate security lighting based on motion within and outside the fences. This provides not only a green approach to security by lowering energy costs but also improves customer relations by reducing light pollution in residential neighborhoods.



NERC CIP Challenges

NERC has been enforcing CIP-014 standards on substations to keep critical infrastructure safe. It is now known that only 9 substations need be rendered inoperable in order to cut power to the whole of America. That is why NERC has placed CIP non-compliance penalties that can range up to \$1 million per day.

SpotterRF Radar helps many current utilities with the NERC CIP-014 standard, eliminating fines while reducing the risk of burglars.

False alarms to the police can range

from \$50 to \$400 per false alarm. False alarms are 94%-99% of all burglar calls, and are less expensive than a \$20,000 burglary, but can add up quickly by using legacy technology as the primary security solution. SpotterRF provides a viable solution by nearly eliminating all nuisance alarms.

SpotterRF causes substations to improve the current and existing security systems by adding automated detection and tracking which is often very difficult to achieve in such remote locations.

NERC CIP-014
Copper Threats
Outside Threats
False Alarms
Drones

ROI: SpotterRF vs Optical



SpotterRF Radar

2 SpotterRF Radar/1 PTZ Thermal Camera Hardware & Licensing Fee*

1st Year Cost: **\$26,100**

2nd Year Cost: **\$200** Camera Licensing Fee

Standard Optical

Hardware/7 Thermal Camera Hardware & Licensing Fee

1st Year Cost: **\$36,400**

2nd Year Cost: **\$1,400** Camera Licensing Fees

* Mid-sizes substations

Saving Time, Money, and Resources

SpotterRF is known for protecting critical sites and infrastructure. Our open design allows for seamless integration to all existing platforms and surveillance equipment allowing for substations to spend less time, money, and resources.



Quick setup time & install



Low maintenance & cost



Configuration on all platforms



Offer turnkey solution



24/7 Weather Surveillance



Classify targets

Substation Protection

Example SpotterRF Coverage for Stations



Design layout is focused on exterior fence approached with some interior coverage.



Design layout is focused on interior approached with some exterior coverage.



“The distinct advantage... is notifications of activity outside the perimeter of the site with video verification so the threat can be identified and responded to before they ever enter the site... SpotterRF... most comprehensive detection in a substation environment, but the most cost-effective total solution based on the ability to mount equipment on existing structures.”

— Jerry Klapak, VTI Security

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