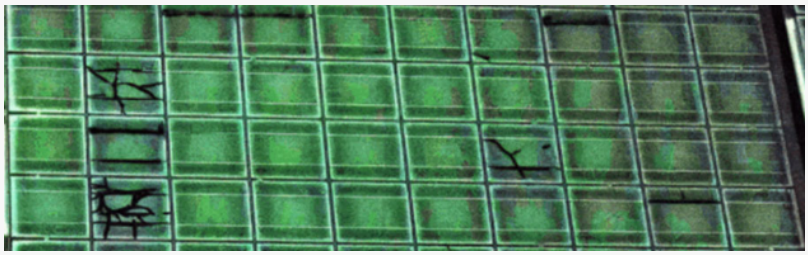
Ultraviolet Fluorescence Solar Inspection Services are Important in the Midwest

Wolf River Electric Offers Advanced UVF Diagnostics Delivering Material-Level Insights for Reliable Solar Asset Management

ISANTI, MN, UNITED STATES, March 3, 2026 /EINPresswire.com/ -- Wolf River Electric is proud to announce the expansion of its Ultraviolet Fluorescence (UVF) Solar Inspection Services, providing solar asset owners, developers, and insurance professionals across the Midwest with advanced diagnostic tools to detect hidden material-level degradation before it impacts performance, safety, and long-term system reliability.

Wolf River Electric Logo

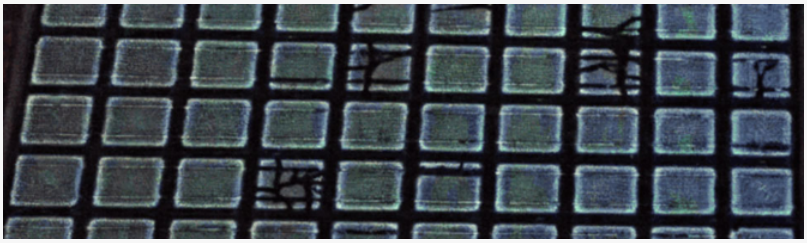


UV Fluorescence Inspection catches problems before they are visible

As utility-scale and commercial solar installations continue to grow across Minnesota, Wisconsin, Iowa, North Dakota, and South Dakota, asset managers face increasing pressure to protect their investments from weather exposure, aging materials, and environmental stress. UVF testing offers a non-destructive, highly specialized method to uncover damage that traditional visual inspections and basic electrical testing may miss.

“Solar module degradation often begins at the material level,” said Vladimir Marchenko, CEO of Wolf River Electric. “With UV Fluorescence inspection, we can identify early-stage backsheet cracking, encapsulant breakdown, moisture intrusion, and environmental wear before those

issues escalate into costly production losses or safety risks."



UV Fluorescence Inspection helps keep systems healthy

What Is Ultraviolet Fluorescence (UVF) Testing?
Ultraviolet Fluorescence testing is a non-destructive diagnostic technique that uses specialized UV light to excite fluorophores within solar panel encapsulants and polymer backsheets. When exposed to UV light, these materials fluoresce—revealing patterns that highlight hidden degradation, cracks, delamination, and other stress-related damage.

This advanced imaging process is particularly effective for solar modules featuring polymer backsheets and is commonly deployed during:
- Post-storm assessments
- Insurance claim evaluations
- Utility-scale asset audits
- Proactive operations and maintenance programs
- Pre-refinancing or asset transfer evaluations

> "With UV Fluorescence inspection, we identify backsheet cracking, encapsulant breakdown, moisture intrusion, and environmental wear before they escalate into costly production losses or safety risks."
>
> *Vladimir Marchenko, CEO of Wolf River Electric*

UVF inspections produce high-resolution imaging that detects defects invisible during standard visual reviews, providing objective and defensible documentation for asset management decisions.

What UVF Testing Can Reveal
Wolf River Electric's UVF solar module testing identifies early and advanced signs of material and environmental degradation, including:

- Material-Level Degradation
- Encapsulant yellowing and chemical breakdown
- Backsheet cracking caused by prolonged UV exposure
- Aging-related material embrittlement

Environmental Damage
- Moisture ingress compromising module seals
- Delamination and adhesive integrity failures
- Weather-induced stress damage from hail, wind, or debris

Performance Indicators
- Early-stage hotspots affecting energy output

- Seal integrity weaknesses that accelerate environmental wear

These insights are critical for systems operating in hail-prone and high-UV regions such as Minnesota, Iowa, Wisconsin, and the Dakotas, where extreme weather can silently compromise module durability.

A Comprehensive Diagnostic Approach
UVF testing is most powerful when combined with complementary inspection technologies. Wolf River Electric integrates UV fluorescence diagnostics with:
- Electroluminescence (EL) imaging for cell-level electrical defect detection
- Infrared thermography for hotspot identification
- Standard visual inspections for surface-level damage assessment

By layering these technologies, Wolf River Electric builds a complete and accurate picture of module health—allowing solar operators to mitigate risks, optimize warranty claims, and enhance O&M strategies.

Why UVF Inspection Matters for Solar Assets
Solar modules are designed for decades of operation, but environmental stress, UV exposure, and moisture infiltration can gradually weaken critical materials. Because this degradation often remains undetectable through standard performance monitoring, UVF provides an essential early-warning system.
- Key benefits of UVF solar inspection include:
- Non-destructive assessment without disassembling panels
- Early detection of hidden risks
- Objective documentation for insurance claims
- Improved long-term asset protection
- Data-driven maintenance and financial planning

For insurance professionals, UVF offers clear and defensible diagnostics that support accurate claim evaluations. For utility-scale solar operators, it provides proactive intelligence that prevents small issues from becoming major capital expenditures.

“Whether you’re managing a solar farm after a hailstorm or conducting proactive asset evaluations before a refinancing milestone, UVF testing delivers clarity,” the spokesperson added. “Our goal is to provide actionable insights that protect solar investments for the long term.”

For more information or to schedule a UV Fluorescence Solar Inspection, contact Wolf River Electric.

About Wolf River Electric
Wolf River Electric is a 100% employee-owned local renewable energy contractor dedicated to

making clean, sustainable energy accessible to businesses and homeowners. Based in Isanti, Minnesota and serving customers across Minnesota, Wisconsin, Iowa, South Dakota, and North Dakota, the company specializes in solar panel installations, battery storage systems, whole-home generators, and energy efficiency solutions. Wolf River Electric's mission is to deliver high-quality workmanship and innovative technology to help communities transition to renewable energy, and the company takes pride in its customer-focused approach and long-term support for every solar project. For more information, visit wolfriverelectric.com.

Justin Nielsen
Wolf River Electric
+1 763-229-6662
email us here
Visit us on social media:
LinkedIn
Instagram
Facebook
X
Other
