

MSI has a history of developing solutions utilizing artificial intelligence for metering, monitoring, and management of electrical systems since 2002. Development of MSI's technology has been supported by the Department of Defense and the National Institute of Science and Technology for development of artificial intelligence used in metering, monitoring and management of electrical energy. MSI has also been supported by the New Mexico Small Business Assistance (NMSBA) Program receiving technical assistance from Sandia National Laboratories (SNL) and Los Alamos National Laboratory (LANL) to develop monitoring of PV systems since 2011.

Support by Sandia National Laboratories

Our first project with SNL was to innovate an affordable technology to locate defective solder joints and parallel arcing to frames of solar modules to prevent PV module electrical fires before they happen by detection of overheating of solar module conductors. In 2013, a team of Sandia scientists led by Jay Johnson evaluated MSI's solution (US Patent # 9,464,946) in the Sandia DC arc fault generation facility. Sandia Technical Report SAND2018-0876 documents this support. In 2019 Sandia has provided testing in their PV array.

Support by Underwriter Laboratory (UL)

The new UL PV Innovations Program was established to develop test procedures for innovations like the Solar Guardian®. Solar Guardian has engaged with the Underwriter Laboratory PV Innovations program to learn what is required to attain UL Certification for PV system components.

Need for Continued DoE and Underwriter Laboratory Support

Rapidly moving the Solar Guardian® System to market readiness will benefit from continued collaboration with SNL and UL. These organizations have the necessary equipment and expertise to perform independent testing, validation and certification to meet requirements for safety, reliability, and durability. For example, SNL has the ability to perform live bench testing on full scale solar arrays to validate that the Solar Guardian system is ready for manufacturing and release to the market. Solar Guardian will again work with UL PV Innovations Program to develop a test procedure to ensure our product and manufacturing processes meet the requirements for UL Certification.