SLAC National Accelerator Laboratory Implements IRISS Custom Solutions

By Jason Bricker, Level II Thermographer, IRISS Inc. & Mike Flynn, Field Service Manager, Industrial Electrical Company

Overview:

SLAC (Stanford Linear Accelerator Center) National Accelerator Laboratory has been helping create the future for over 50 years. The name SLAC National Accelerator Laboratory pays homage to the legacy of the lab and its connection to Stanford University and the Department of Energy (DOE). There have been six scientists who have been awarded Nobel prizes for work done at SLAC and more than 1,000 scientific papers are published each year based on research at the lab.

Case Study

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Having a circuit breaker fail that powers very expensive and critical experiments at the laboratory can be potentially disastrous. Industrial Electrical Company Field Service Manager, Mike Flynn, recently received a call from SLAC to assist them in resolving a failed circuit breaker on some very old switchgear. According to Flynn, SLAC does have an Infrared Scanning Preventative Maintenance program in place but was not able to open the panel in question due to the high Arc Flash Incident Energy levels on the switchgear and the unique construction of the equipment. Due to the location of the breaker that failed and not being able to access the load side for Thermography, the failure had come without any advance warning.

Flynn worked closely with SLAC representative, Alex Wu, PdM Group Manager, and presented him with the only natural solution which was IRISS Inc. Infrared Inspection Windows. Mike Flynn, with the help of IRISS expert Jason Bricker, was able to design windows for a custom fit on the panels to enable infrared inspection of all critical connections and components. Like most people, Alex had thought that IR windows only came in maximum 4" round sizes. However, once he realized that IR Windows come in large format rectangular sizes but that custom designs were available at very low cost he commented, "We are definitely on to something."

In the end, one (1) standard CAP-CT-12 with 9.3"W x 5.0"H viewing area, four (4) standard CAP-CT-24 windows with 20.9"W x 5.9"H viewing area and two (2) custom CAP-CT windows with 13.5"W x 2.4"H viewing area were deployed. The custom windows involved special sizes, mounting configuration and color matching. Only IRISS has the ability to provide custom IR Window solutions like this in the marketplace today.

Figure 1 Final installation showing all seven (7) IR windows installed

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Figure 2 CAP-CT-24 and custom CAP windows at SLAC

Figure 3 Custom CAP-CT window in open position for IR inspection of load side of breakers

Alex Wu is now working closely with Mike Flynn evaluating this solution to show the ROI to SLAC senior management and they have begun evaluating future projects on other parts of the electrical distribution network at SLAC. This solution, in conjunction with the regular Infrared inspections they are now able to perform, enable the critical experiments at the laboratory to continue without the risk of an unexpected loss of power. Wu stated that, “Ensuring that experiments at SLAC run uninterrupted will no doubt contribute to further scientific advancement for mankind.”

IRISS looks forward to working on the next phase of implementation with SLAC and Industrial Electrical Company in Q4 2017.

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