CUTSFORTH

The Power of Innovation

Cutsforth™ specializes in developing innovative new technologies and monitoring systems empowering data-driven decisions to improve availability, reliability, and operating costs.

Infrared (IR) Monitoring Case Study

Infrared Monitoring:

InsightCM™ provides online thermal imaging to automate the process of collecting and monitoring temperature using infrared cameras. Continuous monitoring gives insight into asset health under varying loads and seasons, helping engineers and analysts monitor trend data from user-selectable regions of interest (ROIs) and alarms on transformer, motor control center, breaker box, busbar hot spots, and more.

The minimum, maximum, and average temperatures of user-selectable ROIs are calculated and trended. The temperature difference between ROIs are calculated to help normalize for environmental conditions. These trends can be viewed in InsightCM along with the underlying infrared image, and are easily shared with the historian.

When monitoring a transformer, for instance, the tank temperature and the temperature of each individual bushing could be trended, alarmed on, and the temperature values shared as tags with the historian. InsightCM supports Optris Xi 410 cameras; each infrared monitoring system can connect with up to ten Xi 410 cameras.

Case Study: Large Midwest Power Generation Utility

Challenge:

Improve early detection of reliability issues with transformers and switch yard assets for a large midwestern utility.

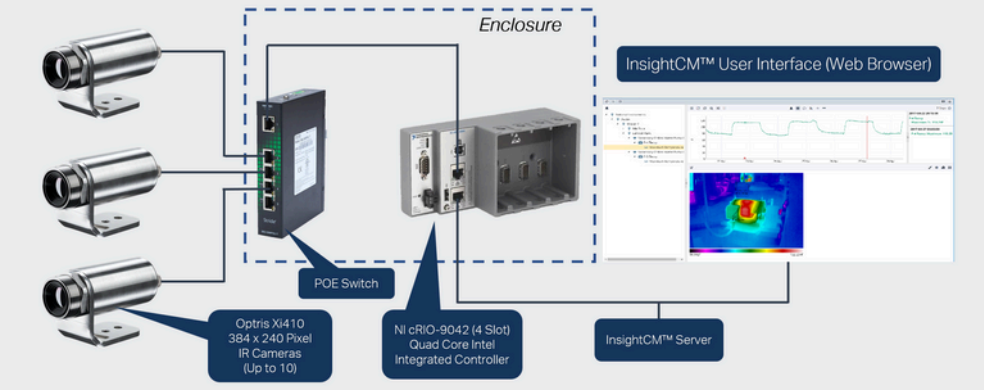
Key Findings:

The plant discovered loose busbar connections and loose connections on drops from HV lines to GSU bushings. These can lead to corona, heat buildup, and eventual arcing leading to a catastrophic failure.

Personnel also found malfunctioning rad fans, which can lead to reduced performance and unit derate. The rads required cleaning to increase performance.

Solution:

Cutsforth InsightCM and Optris Xi 410 infrared cameras provided a rugged edge-based solution for continuous acquisition of IR images and the software backend for trending, alarming, and image review.



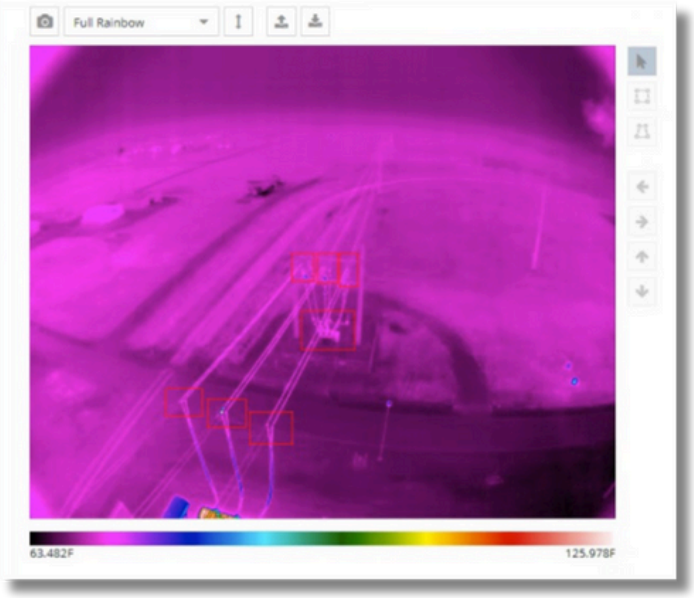
Infrared Monitoring Using InsightCM™ User Interface

Cutsforth.com/IR

For more information, contact us:

800-290-6458 x1
Cutsforth.com/Contact
info@cutsforth.com

Example Infrared Finds



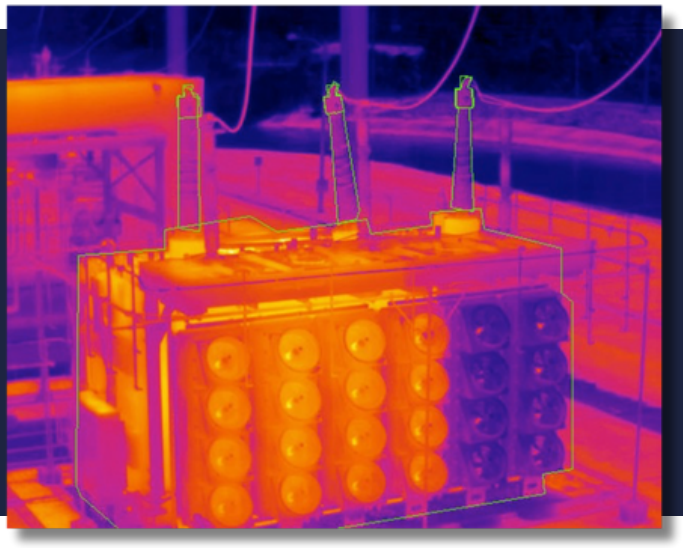
Loose Connections

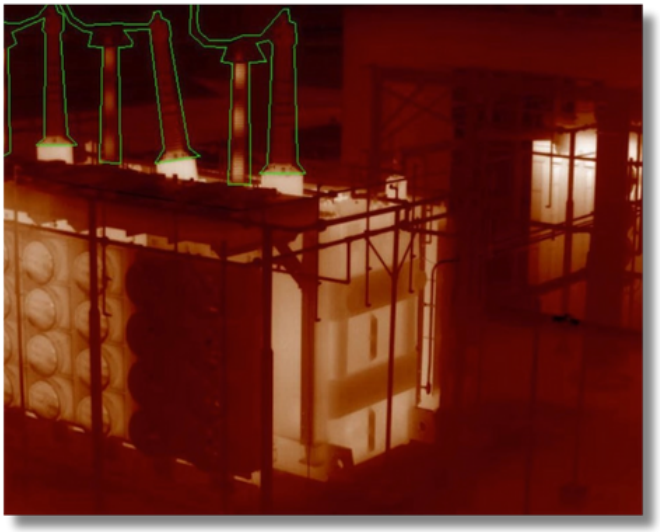
Loose connection on the high line drop to the transformer.

Found by trending max and delta between the three phases.

Radiator Fans

33% of radiator fans aren't working. This could lead to overheating of the transformer.





Multiple Concerns Detected

Bad lightning arrestor busing and radiator fans aren't working.