Infrared Thermography

Building and Facility Electrical Systems and Equipment

Infrared thermography is the science of detecting infrared energy emitted from an object. The main goal of infrared thermography as a risk management tool is to keep your operations running and prevent and mitigate significant losses such as equipment breakdown, extra expenses due to facilities not being functional, spoilage, fire, and of course personal injury and even loss of life.

When was the last time your school district had an infrared thermography scan of its electrical and mechanical equipment? This bulletin explains the basics of infrared thermography and how it can benefit your district's electrical and mechanical systems.

Now, more than ever, our schools are reliant on electronic equipment and the building's electrical and mechanical infrastructure to keep that electronic equipment functioning, to the extent that any failure of these systems can drastically impact operations for days or weeks. We can't afford for these systems to fail. Infrared thermography should be included as a key risk management method to reduce the risk of system failure.

How does it work?

Infrared thermography scanning exposes hot spots in electrical and mechanical systems that may cause future losses. Thermography can include routine infrared scanning of electrical distribution equipment such as electrical meters, switch gears, transformers, circuit breaker panels, motors, switches, and other electrical and mechanical equipment.

What's the benefit?

Unfortunately, measuring the savings of something that did not happen is difficult. It's not until after the loss that these incidents are easier to measure, in the form of loss payments, when people and property have been impacted by a breakdown.

In a blog post about the benefits of thermography, Hartford Steam Boiler (HSB), a company that provides a variety of insurance and property risk management services, including thermography, gave the following example to illustrate potential savings.

A thermography scan helped a private school in Florida recoup $60,000 in excessive electrical charges. This "loss" was due to an electrical meter that was wired incorrectly and resulted in the excessive charges to the school. Without this scan being done, the problem never would have been found, the excessive charges would have continued to accumulate, and eventually the problem could have led to a power failure and downtime for the school.

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Preventative Maintenance

Infrared thermography is just one part of an electrical and mechanical equipment preventative maintenance program. To incorporate this into your existing PM plan, start with the qualified electrical contractor who knows your buildings, systems, and operations. Discuss their capabilities and what key critical assets they suggest be scanned.

If your electrical contractor can't help, there may be other electrical contractors that offer these services and firms that have created a niche and only offer thermography services. Another option is to discuss this service with your property insurance company. Some insurance companies provide thermography as a risk management service or can provide vendor contacts who may provide discounted thermography service for policyholders.

Check with your state and local codes as well as national consensus standards provided by organizations like the National Fire Protection Association (NFPA) for specifics on your equipment and location. Work with your qualified electrical contractor to review applicable codes and requirements and prioritize your critical assets.

Using a systematic approach will help prevent and mitigate equipment breakdown, losses, and keep your school district operating with minimal disruptions. Talk with your qualified electrical contractor to find out more about an electrical preventative maintenance program for your district.

Summary

By establishing a proactive electrical preventative maintenance program, including thermography, your district can potentially avert significant equipment, property, and out of service losses as well as protect the safety of building occupants. These losses can be a result of heat, lack of preventative maintenance, loose connections, overloaded equipment, wiring mistakes, insulation failure and lack of inspection and testing. Thermography can help identify all of these exposures and help you make decisions to prioritize the time, money, and resources needed to keep district operations running and your students and staff safe.

References

Smith, J.R. "HSB Equipment Connection." The Benefits of Infrared Thermography (blog), 2019, The Benefits of Infrared Thermography – Equipment Connection (hsb.com)

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