Infrared scanning is a safe, non-evasive proactive method of detecting potential failures in your mission critical infrastructure prior to them actually causing an outage. Infrared scanning can be used to identify any number of possible electrical problems in and around the data center including; CRAC/CRAH units (loose connections to warn bearings), UPS systems and battery backups, diesel generators, transformers and switchgear.

Remember, early detection allows maintenance personnel to take corrective action before a component fails, minimizing damage to the components and reducing repair cost. Infrared scanning of electrical components and systems should be part of any preventative maintenance program and performed on a routine basis. The use of infrared scanning to detect early indications of system failure is a preemptive measure that can minimize equipment breakdown and downtime.

With the cost of infrared equipment dropping all the time, buying and using even low-end equipment can generate tremendous cost savings. I believe that every time an electrical panel is accessed, it should be infrared scanned. Anyone authorized to work in an electrical panel or high voltage cabling needs to be trained on infrared scanning.

If any hot spots are found or any components are outside of normal operating temperatures, an electrician or facilities supervisor needs to trouble shoot the problem.
Anytime someone needs to access an electrical panel, power distribution unit or remote power panel, they should infrared scan the branch circuits and breakers for excessive heat. Even if you find yourself in an electrical panel every week, it only takes a few seconds to scan and determine if a problem exists. Though it’s unlikely that screws have loosened in the past week, they do loosen up over time.

More likely, in a busy data center it is common for IT to have added new servers into an existing rack without telling facilities management, increasing the load on a 20 amp circuit from 16 to 18 or 19 amps, pushing that circuit over the NEC guidelines of 80% of amp capacity, if it is a under load, meaning it is energized continuously for three or more hours.

I used to tell our IT people that just because there are outlets in a power strip doesn’t mean there is electrical capacity on the circuit to support the added equipment. Remember to ask before you plug in. Regardless of my best efforts to be informed of all new equipment installation into the data center, I’ve personally learned about newly installed equipment when amp probing a circuit to resolve hot spots after an infrared scan of a circuit panel.

I also recommend that anytime someone installed or replaced a branch circuit breaker, you should infrared scan it for problems. You don’t always have to wait for the circuit to trip or fail to identify a potential problem. The infrared scan can tell you right away if the breaker or wires are properly secured or if the installation dislodged adjacent wires.

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