ELECTRICAL FAILURES ARE A MAJOR CAUSE OF LOSSES
INFRARED THERMOGRAPHIC TESTING CAN PREVENT ELECTRICAL FAILURES

The Largest Single Cause of Dollar Losses and More than 30% of all Fire Losses

Production processes, goods in storage, even the routine day-to-day administrative functions of a normal business all require a dependable source of electric power. According to industry statistics, electrical failure is the leading cause of industrial dollar losses. Depending on the specific electrical equipment involved, its usage and the severity of the event, losses may range from a few thousand dollars to millions of dollars in property damage, lost production capacity and/or loss of products in storage. Further, an electrical failure may trigger a fire that destroys the entire facility. Indeed, industry figures show that more than 30% of all fire losses are caused by electrical failure.

Infrared Thermographic Testing Can Prevent Such Losses

The likelihood of electrical failure can be greatly reduced by performing infrared thermographic testing to detect problems before they result in failure. Infrared thermography can detect such conditions as loose or corroded connections, faulty contacts, or overloaded or unbalanced circuits. These conditions often cannot be detected by the naked eye prior to failure. They do, however, result in elevated temperatures that can be detected by infrared thermographic testing. Corrective action can then be taken before failure results.

Historically, many facilities have relied on scheduled outages to visually inspect, clean, and tighten connections in major switchgear to protect against failure. A typical shutdown of a large site could involve an entire weekend and require significant manpower to accomplish. The problem with this approach is not only the logistics and expense but that many problems cannot be detected by visual inspection. It has also been shown that frequent tightening of connections can lead to over-torquing which in itself may result in failure. These issues can be alleviated by performing infrared thermographic testing before scheduled outages to help pinpoint the electrical connections requiring attention. By doing so, corrective action can be focused only on those items that need to be addressed.

Infrared Testing should be an Integral Part of the Electrical Maintenance Program

Infrared thermographic testing should be performed on a regular frequency as an integral part of the electrical maintenance program. CNA Boiler & Machinery Risk Control bases recommended test frequencies on the criticality of equipment and on National Fire Prevention Association (NFPA) and InterNational Electrical Testing Association (NETA) guidelines. Generally, the recommended test frequency will be a maximum of one year for an industrial facility, a facility with spoilable goods in storage or any other location where the loss of electrical power would result in a significant monetary loss or would endanger personnel. At other locations, the recommended maximum test frequency may range up to three years.

Infrared Thermographic Testing can be Cost-Effective for any Facility

Professional thermographers typically charge $900 to $1200 per day with a half day minimum. Some facilities purchase the required equipment and perform the testing in house. The more expensive equipment used by the professionals will generally have a broader focal area and can detect hot spots that might be overlooked when using a less expensive instrument that must be focused individually on each lug or connection to be examined. Generally, the less expensive instruments are used at small locations where there are fewer objects to be inspected or by larger facilities for interim inspections to evaluate suspected problems. The specific approach may vary; however, the general consensus of those who use it is that infrared thermographic testing saves significant time and money and reduces the likelihood of unscheduled facility outages.