



Guidelines for infrared thermographic survey

HSB, a Munich Re company, is a technology-driven company built on a foundation of specialty insurance, engineering, and technology, all working together to drive innovation in a modern world.

Introduction

HSB Thermography Services has been chosen to provide an infrared thermographic survey of your electrical system's components. This document is to provide you with steps that can be taken to best utilize our services.

Please read this and pass it on to your staff. Your support and that of your personnel can go a long way in assuring that this visit provides the most benefits.

Purpose of infrared surveys

The visit is to seek out anomalies that may ultimately result in costly damage to equipment or a disruption in site operations. Access to operating and loaded equipment electrical panels is a requirement for detecting conditions that are possible problems. While it is recognized that not all equipment can be running all the time, it is possible to maximize the number of pieces of equipment that can be scanned if the visit is made during a time when the site is at or near full operation.

Electrical

Electrical components must be energized and loaded. An electrical load at a normal operating level is desired but in no case should the load be below 40%.

The terminal connections of equipment such as transformer bushings, circuit breakers, fuse blocks, fused disconnects, exposed bus bars, motor control relays, and various power boards are the main areas viewed.

To gain a clear line of sight between the infrared camera and the points of interest, the electrical cabinets must be accessed by having panels or doors



opened. All opening and closing of equipment must be conducted by site personnel who are properly trained and experienced in working around live electrical circuits.

Various vintages and manufactures of electrical equipment will have interlocks that may prevent opening unless a built-in bypass is used. Caution should be used when bypassing interlocks. Safety of personnel is vital. Any time a panel cover is removed, the person accessing the panel is responsible to know if it is safe to do so.

Electrical safety during thermographic surveys

It is the responsibility of the owner to provide a safe workplace and ensure that proper safety procedures are followed at all times. A qualified electrical worker knowledgeable in both electrical safe work practices and the necessary personal protective equipment will be required to open the electrical panels for the thermographer to survey the electrical components. Proper workplace safety procedures will be followed at all times during the survey.

It is noteworthy that the Occupational Safety and Health Administration (OSHA) addresses work on live electrical components in Subpart S of their General Industry Standards. Alternatively, your state may have similar regulations that would apply in this case. It is just as important to note that NFPA 70E, Standard for Electrical Safety in the Workplace, provides guidance and details that are widely recognized as best practices and generally

recognized as meeting applicable workplace safety regulations. Attending HSB employees are held to these standards.

As an example of an alternative procedure for conducting some IR scans, cabinets that are in a controlled access room may be opened prior to the visit date. The circuit can be de-energized, panels or doors opened, and then re-energized. The room can then be locked. When the thermographer makes the scan, it can be done when the site equipment is loaded. Use only this suggested method if the room can be secured and it does not violate your company safety policy.

Note: In some cases, a major piece of equipment such as a motor that has a sister unit may be scanned by having the complementary motor brought on line and the other motor taken off line and then scanned. Any heat signatures in the panel of the one just taken off line will hold their values for several minutes and allow for a good scan when the door is opened.

Exit interview

All visits conclude with an exit interview. This is meant to assure several issues are addressed.

1. Any found conditions are properly identified and classified by both the designated site personnel and the thermographer.
2. You and your staff are satisfied that the survey covered all areas of interest and any questions you have for the thermographer are answered.

Summary

This survey is a service to your site and therefore you need to be satisfied. Following this guide will go a long way in achieving your goals. The experience level of the HSB thermographer is very high. Feel free to ask for their advice on what questions you may have. However, please understand that the thermographer cannot supervise your personnel or provide advice outside the scope of their expertise.