



## Maximize The Service Life Of Your Electrical Distribution System

### Risk Solutions

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### Introduction

Every year The Hartford Steam Boiler Inspection and Insurance Co. (HSB) investigates numerous electrical distribution system failures. The primary reasons for these failures are loose or high resistance electrical connections, excessive moisture and lightning.

To help you achieve reliable and uninterrupted service of your electrical distribution system, we are offering the following comments and suggestions:

### Safety

Only qualified and trained persons should ever work on electrical equipment. When service is performed on any electrical circuit, it is important to note that all OSHA and NFPA 70E electrical safety precautions must be followed. Working near electrical equipment can represent significant shock hazards to personnel.

### Design

The installation and operation of your system should be checked to ensure that you are keeping the electrical loading within the design capability.

Electrical loads can be shifted to ensure that circuits are properly loaded and balanced.

### Infrared

Most electrical faults can be eliminated or reduced by proper preventive maintenance to your system. A major aid in helping to identify potential problems is infrared (thermographic) testing.

By performing a thermographic survey of all cable runs, busways, and electrical distribution and control panels, "hot spots" or heat imbalances can be detected. These hot-spots may indicate loose or corroded connections, or overload conditions that need to be corrected.



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## Connections

Panels that are located in high dirt or dust areas should be deenergized and all connections checked for tightness. While the panel is deenergized, all dust and dirt should be removed. All cable runs, busway systems and electrical panels should be checked to ensure that moisture seals and insulation are intact and in good condition.

## Testing

One key area of preventive maintenance is to test and recalibrate all meters and relays to ensure that they are in proper working order. Circuit breakers that are not frequently operated should also be cycled during this testing period. If undervoltage or overvoltage relays are installed, verify that the drop-out setpoints are properly set. Verify that any lightning arresters or surge protective devices (SPDs) have not been destroyed by frequent protective activations.

## Cost

- The cost of unscheduled and unwanted breakdowns of your electrical system will be more than the cost for scheduled preventive maintenance.
- Even when machinery insurance is available, the deductible may still account for a considerable out of pocket expense.
- Having insurance may be of little comfort when your distribution system has failed and the business suffers long non-productive recovery periods.
- Businesses occupancies with tenants will risk relocation costs and customer dissatisfaction when unexpected outages affect losses of personal belongings and disruption of tenants daily routines and schedules.

## HSB help

- The local HSB inspector can assist in finding a local contractor who will take responsibility of your electrical distribution system.
- Please give HSB a call. We are ready to assist you in effectively managing your electrical risks.

*Our advice is intended to complement the equipment manufacturers' recommendations - not replace them. If you have doubts about any particular procedure, contact your equipment service representative.*