

# HSB ELECTRICAL RISK MANAGEMENT

Equipment is the leading culprit in commercial fires.  
Look to the equipment specialist to reduce the risks.



## HSB CAN HELP YOU DEFUSE ELECTRICAL RISKS BEFORE THEY BECOME FIRES

At least 34% of structure fires in nonresidential properties originate with equipment failure,\* and electrical equipment failure is a very common cause of these fires.

Now, HSB can help you reduce risks to insured commercial properties from fires of electrical origins, using the experience and technical skills we have built over our long history.

### **What could you save? These numbers say a lot:**

In a recent four-year period, of all equipment-based fires, 9,100 were caused by electrical distribution and lighting equipment. They resulted in 110 civilian injuries and cost more than \$297 million in direct property losses.

\*National Fire Protection Association (NFPA)

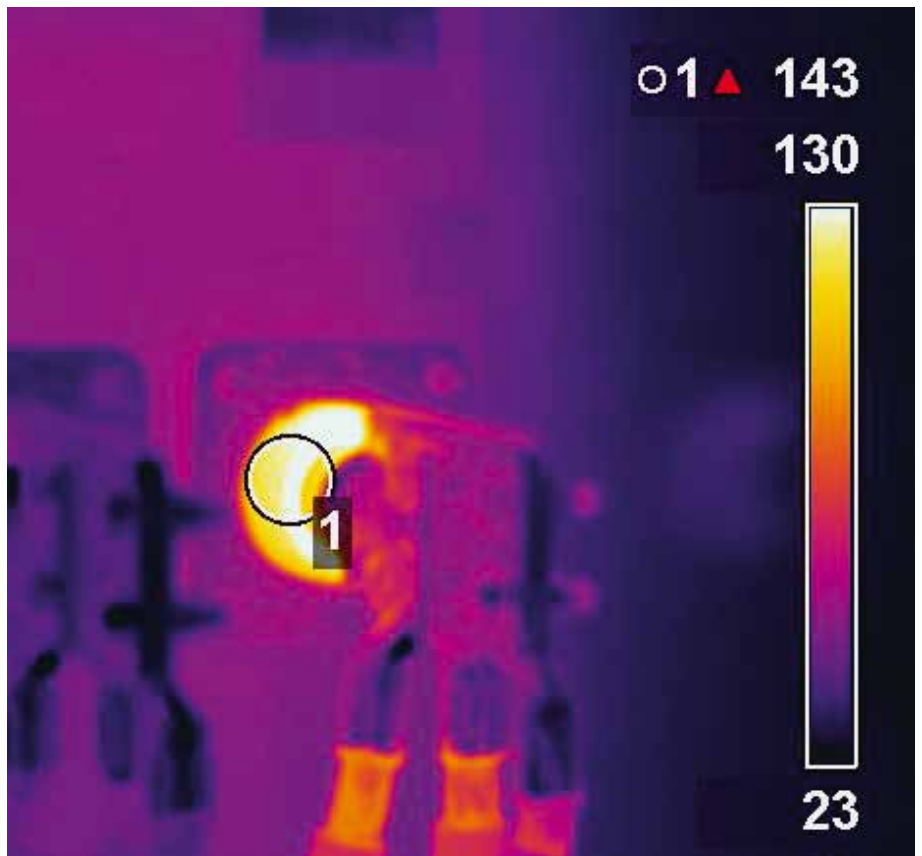


## ELECTRICAL SYSTEMS – TICKING TIME BOMBS?

Fires in commercial buildings cause billions of dollars in damages and injure more than a thousand people each year. The electrical systems in many commercial facilities are increasingly at risk, with greater potential for fires, property damage and threat to human lives. Here's why:

- America's electrical infrastructure – including building transformers and the electrical distribution systems within commercial structures – is aging
- Recent business downsizings and restructuring often result in the reduction or elimination of maintenance personnel, and key maintenance tasks fall by the wayside
- Building electrical loads have increased, in some cases beyond electrical system capacity

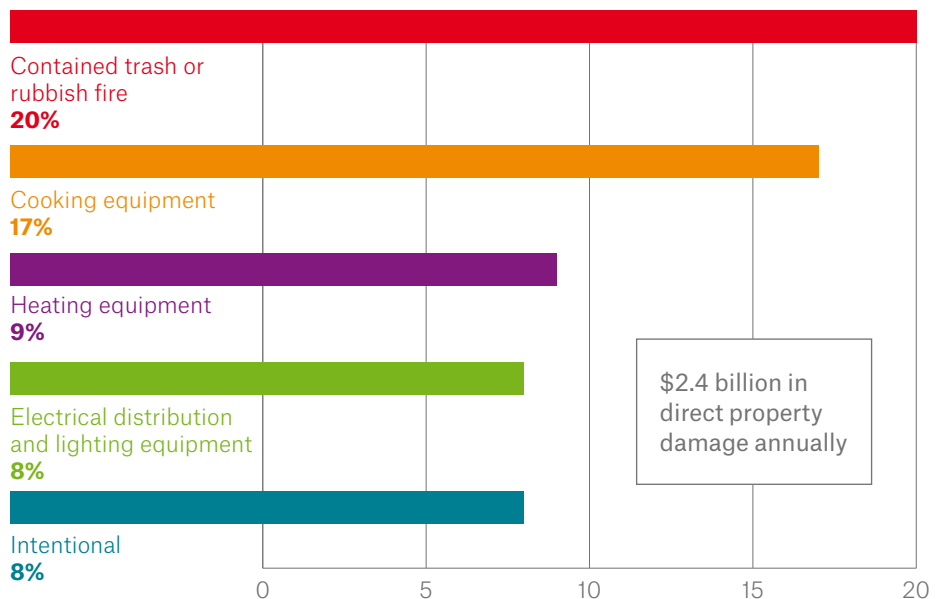
Overall, HSB trending indicates the possibility of more frequent electrical losses (and associated fires) as a result of these and other factors. We see a ticking time bomb.



### Advanced technology to detect risks

HSB's infrared thermography detects hot spots that can be indicative of electrical problems that could cause a fire. HSB thermographers spotted potential trouble in this transformer connector.

### Leading cause of structure fires in non-residential properties 2003–2006



Source: National Fire Protection Association (NFPA)

## WE SEE RISKS EVERY WEEK AT INSURED LOCATIONS

HSB conducts hundreds of thousands of physical inspections yearly across the U.S. What we see every week should be of concern to you and your clients:

- Poor maintenance of electrical systems
- Trash and other combustibles piled near electrical panels
- Standing water in electrical equipment rooms
- Water leaks seeping through electrical equipment
- No records of electrical system changes
- Frayed wiring
- Overloaded circuits
- Jury-rigged fixes not in compliance with code

These are fires waiting to happen, and we can alert you to them.



### HSB inspectors spot fire risks

HSB inspectors discovered this electrical room cluttered with combustible debris in close proximity to energized equipment. An HSB OnSight® risk report was issued to alert management to the need for corrective action.

## WHY ELECTRICAL FAILURES CAUSE FIRES

### Heat

Heat is a normal byproduct of the flow of electric current. But malfunctions to electrical systems can cause problems that generate heat much in excess of what was contemplated by code. How hot? Electrical arcing can get hot enough to melt steel. That's hot enough to spark a fire that can devastate commercial property, halt normal business operations or endanger lives. Electrical arcing can also build up slowly to smolder for days in areas hidden behind walls or ceilings until a fire ignites.

### Lack of maintenance

A significant number of electrical system failures can be traced to lack of maintenance. An inadequately maintained electrical distribution system can spell trouble. Electrical panels that are never cleaned accumulate dust and dirt deposits on their connections. When moisture accumulates on dusty or dirty electrical surfaces, it can create a short circuit, leading to a fire. Contamination can also corrode connections.

### Loose connections

Turning equipment on and off exposes electrical system components to thermal heating and cooling cycles. As electrical loads cycle between high and low demand, thermal expansion and contraction cause connections to loosen. Loose connections, even small ones, can cause excessive heat. This hot connection can lead to insulation failure or fire if a combustible fuel source is nearby.

### Overloaded equipment

Electrical loads within commercial facilities have been growing as building owners and tenants add equipment such as air conditioning and new electronic devices to already overloaded circuits. Increased electrical loads stress the electrical system beyond what it was designed to handle. It's like a two-lane road that now has to stand up to heavy truck traffic. Sooner or later, the roadway breaks down.

### Wiring mistakes

The electrical system in a commercial building is dynamic. Over time, businesses and tenants change, new equipment gets installed and building additions are made. Under pressure to complete a job on time and within budget, employees or contractors can make mistakes that can cause electrical fires later.

### Insulation failure

Any insulation system can degrade with age, heat and contamination. But higher electrical loads can generate more heat and accelerate insulation deterioration. System design is also a factor; insulation can fail where electrical cables come in close proximity to one another.

### Overlooked

People believe mechanical equipment has a potential for failure because it has moving parts; pumps, motors and gears can break. But in many insureds' minds, electrical distribution systems don't have the same loss potential because they have no moving parts. But being static does not mean "maintenance-free."



## PUT HSB'S ELECTRICAL RISK SPECIALISTS ON YOUR TEAM

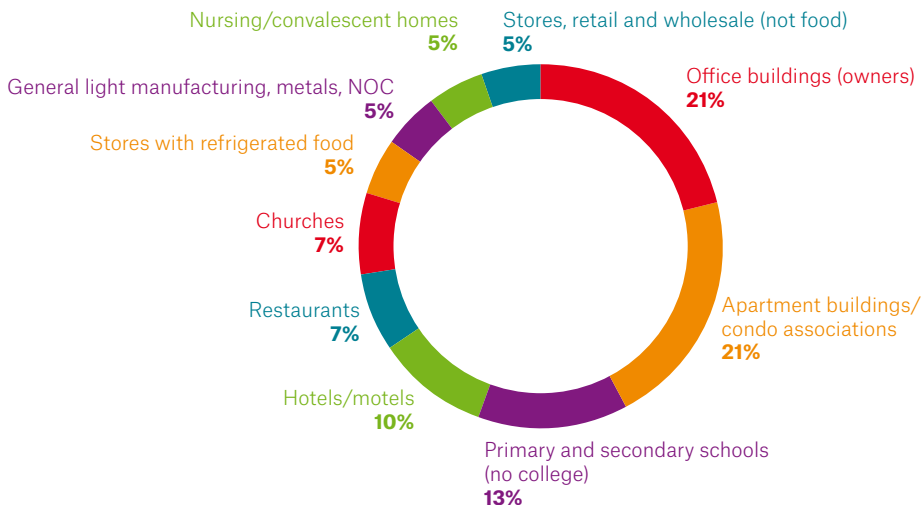
HSB's knowledge and loss prevention for boilers and pressure vessels is well recognized. But we're equally strong in electrical risk management. Electrical equipment failures have been an HSB loss leader for some time. In fact, electrical system breakdowns are now the third most frequent type HSB experiences. That's why we've been focused on understanding electrical risks and have developed effective solutions to manage and reduce them.

We bring a unique mix to the challenge: new ideas, extensive resources and loss data, experience and proven loss prevention technologies. HSB Engineering has electrical engineers, infrared thermographers, hundreds of field inspectors qualified to identify electrical risks, researchers and PhDs, including actuarial, reliability benchmarking and risk analysis groups working on electrical risks.

### Trust our experience

As equipment specialists, we understand how businesses, industry and institutions use electrical equipment and the fire risks that can stem from it. We know the types of equipment we'll find in different businesses, the failure modes for that equipment and where to look for hidden electrical problems. This knowledge and experience enable us to help you assess the risks of electrical fires within your book of business.

### HSB claim data show that 10 types of businesses make up 50% of electrical equipment breakdown claims with fire



## Tailored electrical risk management solutions

Our electrical risk management approach sees every customer as unique. We can tailor an electrical risk management solution to your needs and requirements, drawing on proven methodology based on hundreds of engagements with major clients across a wide range of business sectors. Our risk management consultants have the full range of technical skills and insurance experience needed to help you define, build and deliver a successful electrical risk management solution.

### Electrical risk analysis for your business

Which of the business classes and properties you insure pose the greatest risk potential for fires? HSB can help you identify areas in your book of business to focus on to reduce risk.

HSB owns one of the world's largest databases on equipment breakdown and its causes. This body of knowledge allows us to conduct extensive data mining and develop analytics to help identify sources of risk, reduce electrical losses and reduce underwriting risk.

HSB can help you identify higher-risk properties, using a process that looks at business type, claims history, building age and other factors. Our electrical engineering specialists and consultants can help you find the optimum loss prevention approach for your company.



## OKLAHOMA HIGH SCHOOL DESTROYED BY ELECTRICAL FIRE

The fire was spotted around 11:00 p.m. and took 60 firefighters over six hours to bring it under control. All that was left standing were portions of some exterior brick walls. This fire was started by an electrical short circuit which smoldered for over two hours before it burst into flames. Property damage totaled more than \$1.75 million. Fortunately, in this case, the incident occurred at night and there were no injuries.

## THE SERVICES YOU NEED AND ONLY WHAT YOU NEED

We offer a wide array of electrical risk management services.

### **HSB OnSight® risk identification**

HSB OnSight® inspection service provides our insurer partners with information about property casualty risk conditions, including electrical hazards, which we observe while conducting equipment inspections. HSB OnSight® risk observation service is included as a standard element of HSB's Equipment Breakdown program.

### **HSB Loss Prevention Reports**

HSB conducts more than 500,000 equipment inspections in the U.S. each year. Our post inspection Loss Prevention Reports contain critical recommendations that can help reduce the risk of fire as well as equipment-related issues.

### **HSB electrical claims service**

HSB claim adjusters and loss consultants have experience in mitigating electrical loss frequency and severity. We have a database of preferred vendors and electrical contractors for expedited service.

### **HSB Infrared Thermography Services**

HSB Thermography Services conducts infrared technology surveys to find elevated temperatures which are indicative of problems in electrical equipment. By pinpointing hot spots, equipment owners can get equipment repaired – before it fails – helping to avoid unexpected breakdowns that can halt production, knock out power and cause fires.

### **HSB Transformer Oil Gas Analyst (TOGA®)**

Transformers are found in virtually every building, industry and institution. Sudden unexpected transformer breakdowns can cause physical damage, electrical outages, business interruptions or fire. HSB's Transformer Oil Gas Analyst (TOGA®) tests can reveal a transformer's internal condition before problems might manifest themselves in equipment damage or fire.

### **HSB provider partnership**

HSB partners with TEGG Corporation, an international network of full-service, local electrical contractors. TEGG provides visual, thermographic and ultrasonic inspections of electrical systems, evaluates conditions and makes recommendations. We provide the certification required by many company underwriting standards at specified locations.

### **HSB engineering staff training**

Do you have a loss control department? We can help train your staff to identify and assess electrical risks. HSB's engineering staff will collaboratively develop training content based on your needs and specifications.



## ABOUT MUNICH RE AND HSB

Hartford Steam Boiler is proud to be part of Munich Re. Munich Re stands for exceptional risk solutions, consistent risk management, financial stability and client proximity. Munich Re – which pursues an integrated business model consisting of insurance and reinsurance – is one of the world's leading reinsurers.

HSB is a leading specialty insurer providing equipment breakdown, other specialty coverages, inspection services and engineering-based risk management that set the standard for excellence worldwide. We anticipate risks and provide forward-thinking solutions that render tomorrow's world insurable.

**The highest number of electrical equipment breakdown claims with fire come from office and apartment buildings.**



An aerial photograph of New York City, showing a dense urban landscape with numerous skyscrapers and buildings. In the center, the green expanse of Central Park is visible. The sky is clear and blue. A white rectangular text box is overlaid on the left side of the image.

## FIRE LOSSES ARE NOT INEVITABLE

Despite better building codes and new fire protection methods, fires account for numerous worker injuries, third-party liability claims and millions of dollars in property damage. Fires in commercial structures remain a significant problem. There is a better way. Throughout HSB's long history, we've proven that risks can be avoided or reduced through focused underwriting and loss prevention.

HSB developed the means to reduce electrical equipment failures for ourselves, because these failures and related risks had become common. Now, you have access to the knowledge and lessons we've learned to help you better manage your risks of electrical fires. For more information, contact your Hartford Steam Boiler representative. Or call 1-800-472-1866.

**Hartford Steam Boiler**

One State Street  
P.O. Box 5024  
Hartford, CT 06102-5024  
Tel.: (800) 472-1866  
www.hsb.com

This summary gives general information.  
For all coverages, conditions and  
exclusions, refer to the policy.

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