

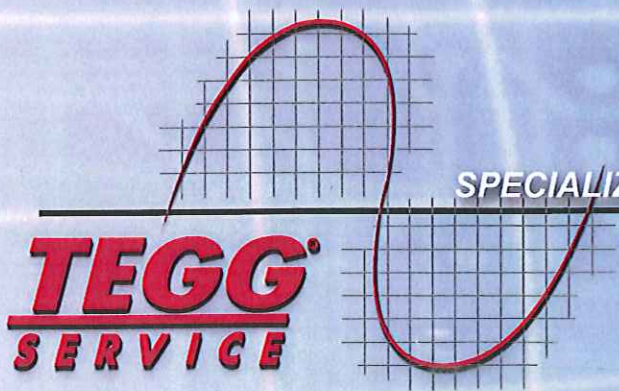
# ALLBRITE ELECTRIC SERVICE, INC.

4450 N.W. 126th AVE., SUITE # 101 ♦ CORAL SPRINGS, FL 33065

PHONE: (954) 583-6788 ♦ FAX: (954) 323-5513

Providing **TEGG** Electrical Services

**Your  
Electrical System Specialist  
GUARANTEES  
“Failure Is Not An Option”**



SPECIALIZING IN ELECTRICAL SYSTEM RELIABILITY  
SERVICE ♦ PRODUCTS ♦ EDUCATION

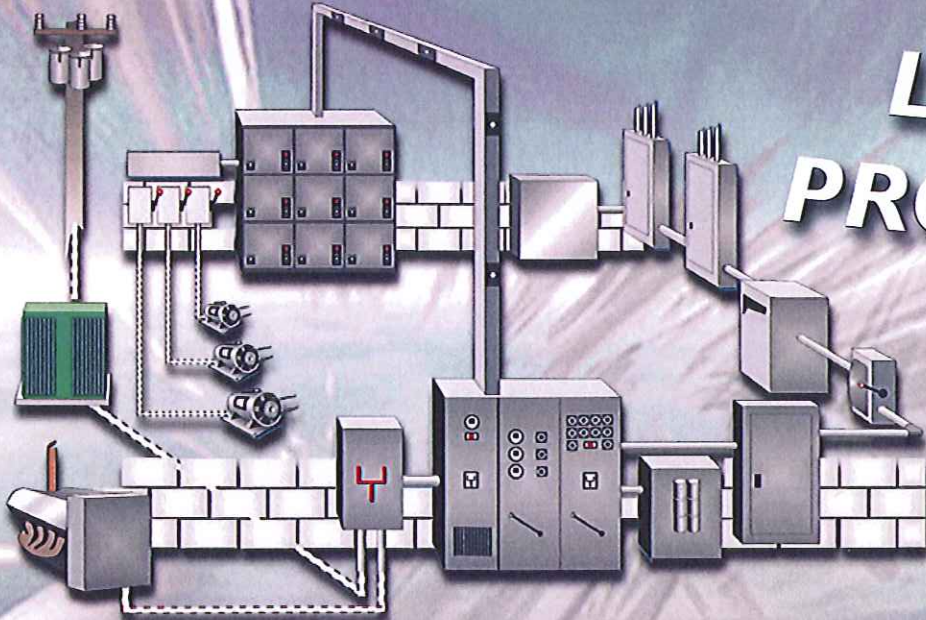


# GUARANTEED PROGRAMS

**TEGG**  
**SERVICE**

For Your  
*Electrical Distribution System*

**LIFETIME  
PROTECTION**



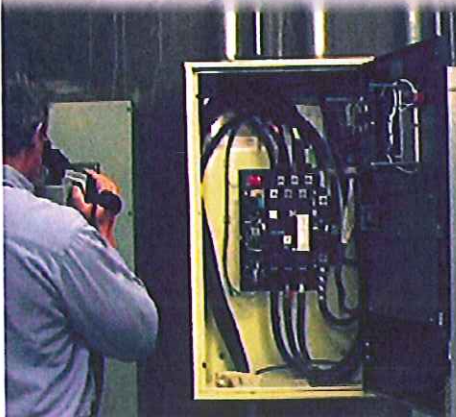
## **TEGG PRIME**

- ✓ Energized and de-energized testing
- ✓ De-energized preventive maintenance
- ✓ Guaranteed repair or replacement on components that suffer a sudden and accidental breakdown
- ✓ Provides overtime for guaranteed repairs
- ✓ Includes extra expediting service (express freight)
- ✓ Includes downstream resultant damage protection for EDS
- ✓ Includes temporary power
- ✓ Includes emergency generator if required



## **TEGG PREMIUM**

- ✓ Provides full energized testing and analysis
- ✓ Minor services such as exterior cleaning of equipment
- ✓ Comprehensive Electrical Systems Analysis reporting
- ✓ Guaranteed repair or replacement on components that suffer a sudden and accidental breakdown
- ✓ Provides overtime for guaranteed repairs



# TEGG BASIC

- ✓ Utilizes thermographic and ultrasonic technology for analysis of the electrical system
- ✓ 90-day guaranteed repair or replacement
- ✓ Guaranteed repair service during normal business hours



# TEGG BUILDERS

- ✓ Begins at the end of the new construction regular warranty period
- ✓ Energized testing
- ✓ De-energized testing optional
- ✓ Guaranteed repair or replacement on components that suffer a sudden and accidental breakdown
- ✓ Provides overtime for guaranteed repairs
- ✓ Includes extra expediting service (express freight)
- ✓ Includes downstream resultant damage protection for EDS
- ✓ Includes temporary power
- ✓ Includes emergency generator if required



FEATURES	BASIC	PREMIUM	PRIME
Visual Inspection	Yes	Yes	Yes
Infrared Thermographic Inspection	Yes	Yes	Yes
Ultrasonic Inspection	Yes	Yes	Yes
Comprehensive IR Report	Yes	Yes	Yes
TEGGTask View	Yes	Yes	Yes
Predictive and Proactive Service	No	Yes	Yes
Electronic Equipment Inventory	No	Yes	Yes
Energized Testing and Analysis	No	Yes	Yes
De-Energized Testing & Analysis	No	Optional	Yes
De-Energized Preventive Maintenance	No	Optional	Yes
<b>GUARANTEED SERVICE</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Guaranteed Repair and Replacement	90 Days	Life	Life
24 X 7 Emergency Call Out	Yes	Yes	Yes
Overtime for Repairs on Guarantee	No	Yes	Yes
Downstream Resultant Damage Repairs	No	No	Yes
Express Shipments for Repairs	No	No	Yes
Temporary Power (Wiring)	No	No	Yes
Emergency Power (Generator)	No	No	Yes

# How To Care For The Electrical Distribution System Within An Educational Facility

**TEGG**  
SERVICE

## Common Problems

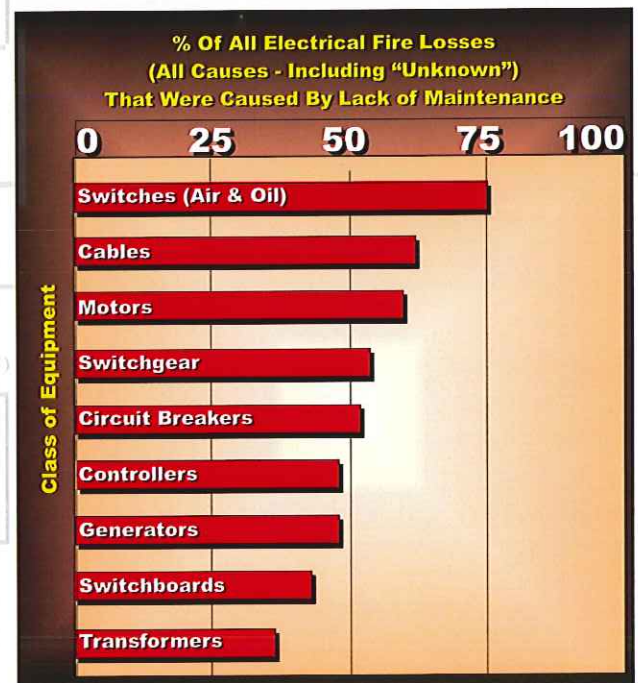
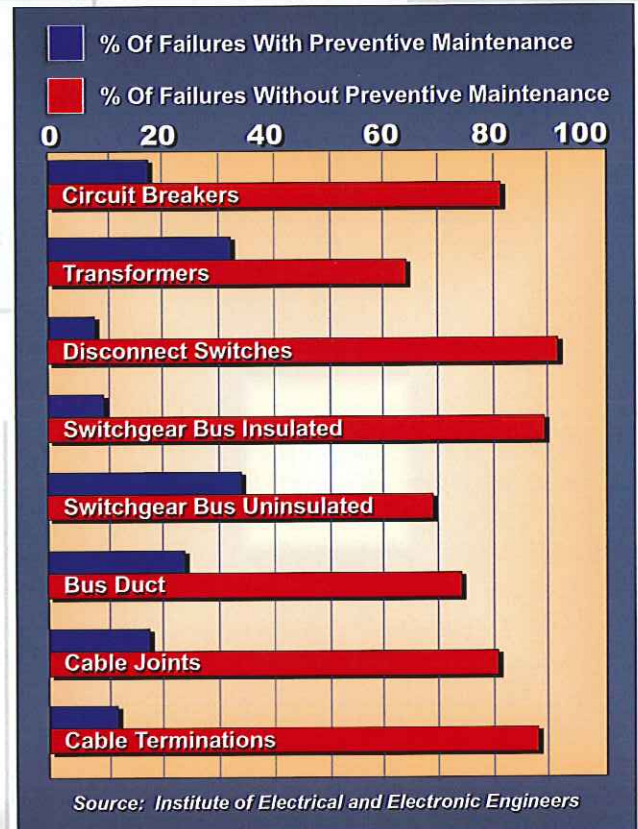
- Overloaded circuits.
- Code violations.
- Poor power quality.
  - Harmonics affecting critical systems caused by:
    - Computers.
    - Electronic lighting ballast.
    - Variable speed drives.
- Improper grounding due to:
  - New additions and upgrade.
  - Non adherence to the National Electric Code and/or IEEE 1159-1992 standards which are recommended practices for grounding of sensitive electronic equipment.
- Heavy energy usage:
  - This generates excessive amounts of heat that cause connections to loosen due to shrinkage and expansion. Loose connections cause arcing that generates extreme heat and high resistance, which is a major safety concern and also results in an inefficient use of power.
- Budget constraints.
- Inadequate surge protection.
- Insufficient backup generators.
- GFI certification.
- De-energized work to clean, tighten, lubricate and test is difficult to schedule.
- Aging infrastructures.
- Multiple and various types of facilities over wide regions.
- Maintenance department has many responsibilities.
- Limited tax allocations for preventive maintenance.

## Critical Areas

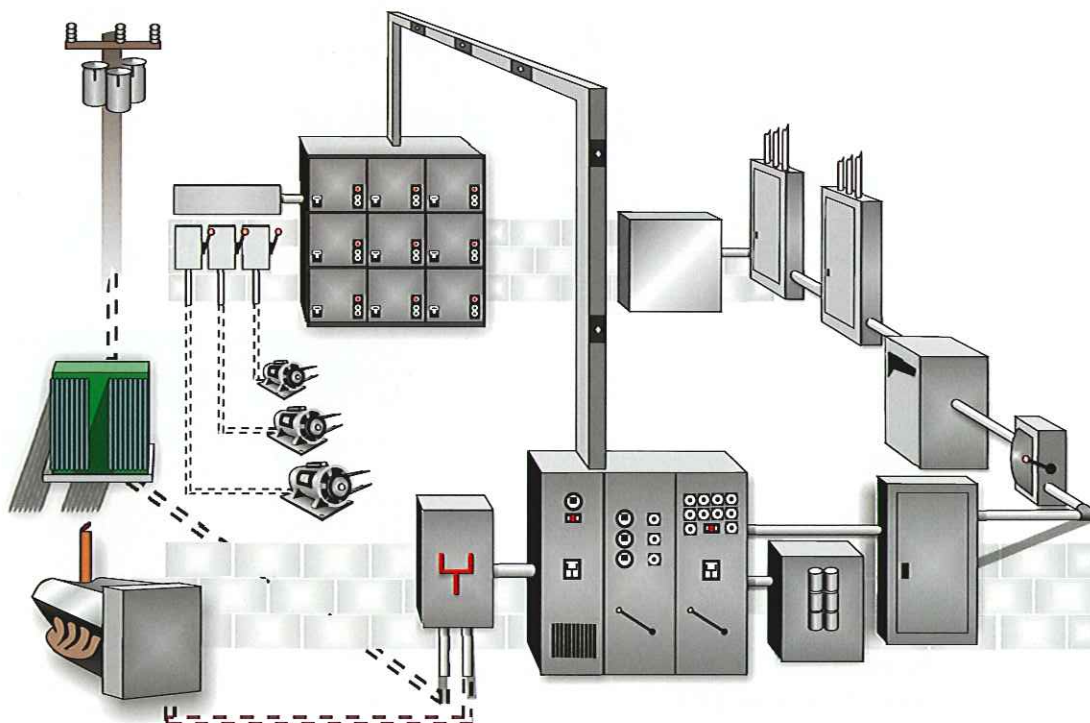
- Incoming service.
- Redundant incoming services, power supplies and back up emergency generation.
- Main transformer(s) oil & dry.
- Bus duct.
- Computer rooms.
- Databases and registries.
- Data collection centers.
- Security/surveillance systems.
- Lighting.

## Financial Benefits of Electrical Preventive Maintenance

- Predictive budget.
- Minimize or eliminate unexpected outages and untimely repair costs.
- Extend the EDS life/lower replacement costs.
- Lower liability risks.
- **Greatly reduce electrical fires.**
- Computerized documentation for your electrical distribution system.



# What to look for...



## Electrical Distribution Systems

Schools depend on electrical power. Dirt, dust and moisture can increase the risk of a short circuit and arcing damage to the electrical distribution system. A lack of maintenance may lead to loosening and overheating of connections. Equipment usually includes transformers, circuit breakers, electrical distribution panels and bus or cable structures, which may be concealed and difficult to access. Some schools may have large incoming transformers and sophisticated power quality control equipment. Insulation can deteriorate unnoticed and lead to the shorting out of wiring, breakers and distribution panels. A short circuit may not only damage the electrical system, but can knock out power to parts of the school, or the entire facility.



## Emergency Generators

Many educational facilities require emergency power for emergency lighting. Emergency generators are normally diesel driven, large units ranging from 600 hp to 1500 hp, and as a result, are very expensive to repair or replace.



## Power Transformers

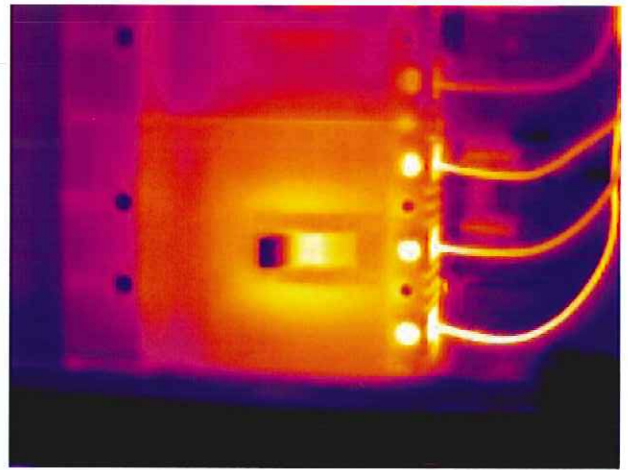
Transformers are used to drop voltage power down to a level that can be used by equipment inside a school. Transformers are expensive to repair or replace, and are subject to breakdown due to power surges, short circuits and aging insulation.

# What to look for...



## Switchgear

This is clearly a critical area for schools. Budget constraints and a shortage of manpower sometimes limits the basic preventive maintenance necessary to keep these components running safely and reliably. Cleaning, tightening, proper torquing and lubrication are recommended at least once every three years according to the NFPA.



## Distribution and Branch Panels

Electrical panels are an integral element of educational facilities' electrical distribution systems. The frequent cycling on and off of electrical loads creates heating and cooling, which can loosen connections in electrical panels and cause electrical arcing (or short circuits). Arcing can damage not just electrical equipment, but also can result in surges and electrical disturbances that can damage other expensive equipment on the premises.



## Computers / Business Equipment

Computer systems and electronic equipment are vulnerable to power surges and other electrical disturbances. With computers widely used in the classroom, a breakdown can be disruptive to learning, as well as expensive. Schools also use a wide variety of office equipment, including computers, data systems, printers, scanners, copy machines and fax machines. Fragile electronic circuitry can be damaged by power problems that originate from utility electrical lines or equipment within the school facility.



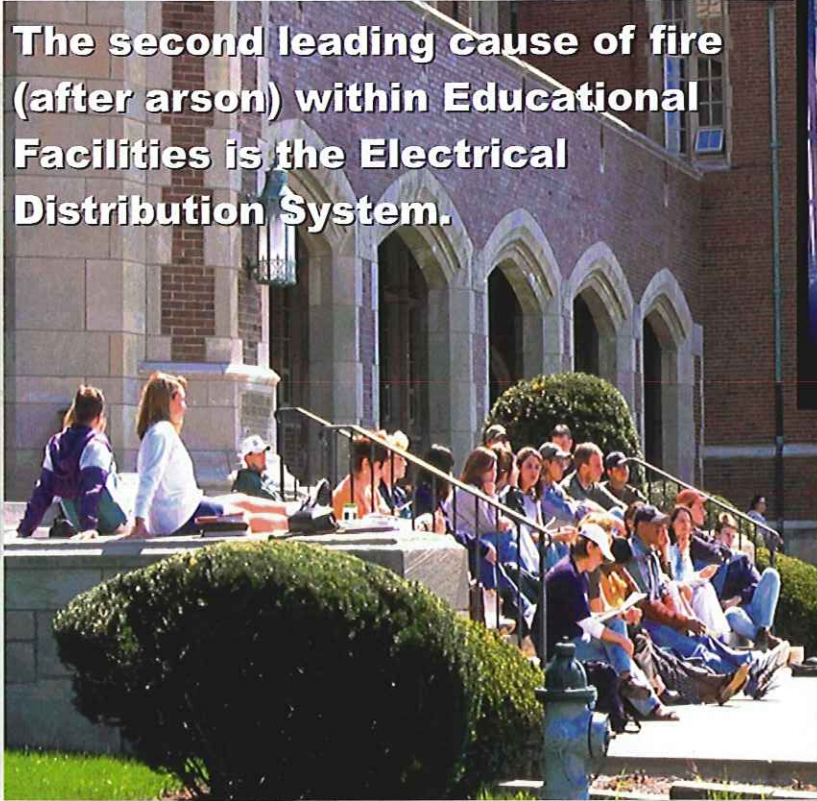
## Motors/Compressors/Condensers Air Conditioning System

Schools need air conditioning to provide a proper environment for learning and other activities. Students cannot focus when they are uncomfortable. Air conditioning systems generally include air conditioning units and a wide variety of air handling fans, blowers, dampers and other mechanical and electrical parts. Newer and larger schools may operate complex air conditioning systems like those found in commercial facilities. Most air conditioning breakdowns result from either electrical breakdown of the driving motors or mechanical parts breaking in the compressor.

## Power Quality

Variable speed drives, computers or any device that converts AC to DC can negatively affect power quality. These devices do generate higher frequency, current harmonics. In excessive levels, damaging heat will be generated affecting system components: motors overheat, automatic transfer switches may not function, transformers overheat, nuisance breakers trip or fuses fail, microprocessor based equipment can malfunction, causing data loss and reduction in available system capacity.

**The second leading cause of fire (after arson) within Educational Facilities is the Electrical Distribution System.**



### PRIMARY CAUSES OF ELECTRICAL LOSSES

• Loose connections/parts	30.3%
• Moisture	17.4%
• Line disturbance (other than lightning)	10.4%
• Defective/inadequate insulation	9.9%
• Overloading/inadequate capacity	2.4%
• Accumulation of dust, dirt and oil	2.2%
• Lightning	8.1%
• Foreign objects/short circuiting	7.3%
• Collision	3.9%

## Equipment Loss Examples:

Severe arcing caused extensive damage to a high school's electrical system when workers connected cables to new air conditioning chiller units. Repairs had to be rushed so renovations could be completed in time for the new school year.

**Total Loss: \$76,927**

During a night high school football game, the lights on one side of the field and the parking lot went out. The fire department was called as poles and transformers sparked and smoked. Two transformers and underground wiring had to be replaced.

**Total Loss: \$55,908**

Underground wiring short-circuited, damaged electrical system components and cut off power to a school. Without refrigeration, the cafeteria staff had to discard hundreds of pounds of raw meat.

**Total Loss: \$102,510**

Arcing destroyed a 16-switch electrical distribution panel. The breakdown kicked out the school's main breaker, causing the school to close temporarily.

**Total Loss: \$50,131**

The motor on a 20-ton air conditioning unit short-circuited. Another unit was rented to keep the school open during repairs.

**Total Loss: \$46,474**

A transformer leaked oil from a bushing onto a load break elbow, resulting in arcing. The breakdown caused a voltage surge that damaged the school telephone systems.

**Total Loss: \$34,465**