Electrical: Self-Assessment Survey

Electrical systems and equipment need to be evaluated and inspected to ensure proper working conditions. By completing an electrical self-assessment survey on each building, you will be able to identify any electrical concerns and take corrective action, thus reducing your chances of an electrical fire.

The items listed below will describe the categories that the Electrical Assessment Survey, attached at the end of this document, was developed from and the concerns associated with each one of them. These categories should be referred to when answering the questions in the assessment survey.

Electrical System Age



All electrical equipment has a limited-service life. Behind outlets and switches is a system of wires, panels, circuit breakers, bus bars and transformers. Repeated surges, power outages, load changes, moisture and dirt all impact the service life. As a result, any electrical systems that are greater than 30 years old have a much greater occurrence of failure. Identifying and evaluating these facilities can determine what steps should be taken to reduce the potential for electrical system failure and/or fire.

Electrical Preventative Maintenance (EPM) Program

As electrical equipment ages, an increase in failures occur. More than two-thirds of electrical system failures can be prevented by a routine preventive maintenance program. Studies show that the failure rate of electrical equipment is three times higher for components that are not part of a scheduled preventive maintenance program as compared with those that are. This program translates to: is the electrical system clean, cool, and dry and are the connections tight? In general, it is recommended that once every three years, preventive maintenance is conducted on electrical equipment by a qualified electrician or licensed electrical contractor.

Electrical Preventative Maintenance (EPM) Program

Recurring electrical problems, such as blown fuses, tripped breakers, flickering lights or overheated appliance cords can be symptoms of overloaded circuits, improper grounding, non-code wiring, loose connections and a host of other serious adverse conditions. These events also can indicate potential problems with connected equipment, such as motors and transformers, as a result of insulation breakdown, causing abnormal current draw. This increases the load on the system. A qualified electrician should be tasked with identifying the cause and implementing the required corrective action.

Missing Covers

Missing covers on junction boxes, panels, switches and receptacles expose energized circuits, creating arc flash, shock, and electrocution hazards. In addition, missing covers provide a path of entry into the interior of the enclosure, allowing dust, dirt, and debris to accumulate. Missing knockouts or covers could allow metallic objects to fall into the circuits that could arc or lodge in a way that presents a hazard when the enclosure is opened.

Maintenance

Only a qualified electrician or licensed electrical contractor should be maintaining the electrical system within your facility. It is important to determine if equipment is actually being inspected and maintained and the skill level and qualifications of those performing the work. The risk of failures and fires increase significantly when work is performed by unqualified personnel.

Temporary wiring

Temporary wiring is not compliant with the National Electrical Code (NEC) and increases the risk of electrical equipment failure and fire. Wiring extension cords or electrical conductors that are not properly routed through conduit directly into electrical panels are in violation of local and national electrical codes. In addition, temporary wiring may not be properly sized for the voltage and current. Improperly installed electrical equipment or spliced wiring also should be identified as temporary and immediately removed from service by a qualified electrician or licensed electrical contractor.

Electrical Room

Electrical equipment can and does fail, often catastrophically, with arcing that produces large amounts of heat. Any combustible material in the vicinity of the arc flash can be ignited. Access to electrical rooms should be limited to authorized maintenance or operations personnel that understand the importance of maintaining a clean, well-ventilated electrical area. Placing storage items too close to electrical panels or near electrical equipment will restrict air circulation and impede proper cooling. Excessive heat buildup will result in premature failure and shortened service life. All ventilation vents and openings in equipment rooms should be kept clean and free from obstructions. A concerted effort should be made to reduce the number of unused items and to store items in a neat and orderly fashion. Storage must be no closer than 36 inches to the electrical panels, electrical equipment, ventilation vents and openings.

Presence of Moisture

Long-term exposure of metallic electrical components to moisture causes corrosion, and the buildup of corrosion by-products can lead to premature failure. Water entering electrical enclosures can cause failures due to ground faults and arcing. Electrical equipment areas should be kept dry, and equipment should be protected from moisture. When evidence of moisture contamination is noted, equipment should be examined for damage and necessary repairs made. The source of the moisture needs to be identified and eliminated. All electrical work should be completed by a qualified electrician or licensed electrical contractor.

The attached Electrical Self-Assessment Survey should be completed for each building. This assessment will produce a score of Low, Moderate or High based on the following:

- **Low Exposure – 22-26 pts.:** Electrical exposures were found to be acceptable. Exposure to an electrical loss is low.
- **Moderate Exposure – 16-21 pts.:** Electrical exposures were found to be acceptable, however; further electrical risk assessments are recommended.
- **High Exposure – 0-15 pts.:** Scores falling into this category have a high probability of suffering an electrical loss, and a comprehensive visual inspection of the entire electrical distribution system should be completed by a qualified licensed electrical contractor.

Electrical Assessment Question	*Score
Is any part of your electrical system greater than 30 years old? **(YES- 0 points, NO- 5 points)**	
Do you have an Electrical Preventive Maintenance (EPM) Program in place that is conducted at least once every three years by a qualified electrician or licensed electrical contractor? **(YES- 5 points, NO- 0 points)**	
Has your facility noted any recurring problems, such as blown fuses, tripped breakers, flickering lights or overheated appliance cords? **(YES- 0 points, NO- 4 points)**	
Are there any missing covers on junction boxes, panels, switches or receptacles? **(YES- 0 points, NO- 2 points)**	
Who is responsible for maintaining the electrical equipment and system? (select one) Electrical ☐ Contractor **(3 points)** ☐ Maintenance Staff **(2 points)** ☐ Other **(0 points)**	
Do you have any temporary wiring within the facility? **(YES- 0 points, NO- 2 points)**	
Are combustible materials stored in the electrical room? **(YES- 0 points, NO- 2 points)**	
Have you noticed evidence of moisture or excessive dirt or dust on the electrical equipment or panels? **(YES- 0 points, NO- 3 points)**	
TOTAL SCORE	

* If a score of **0** is entered for any question, corrective actions should be taken.

Low Exposure: 22-26 pts.

Moderate Exposure: 16-21

pts. High Exposure: 0-15 pts.

Name of person completing survey:_____Date:

_____

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