



## THE ELECTRICAL DISTRIBUTION SYSTEM EXPERTS

Spark Power Corp. excels in delivering integrated, end-to-end electrical distribution solutions for industrial, commercial, institutional (ICI) and utility customers across North America. Our staff of highly trained engineers, tradespersons and technicians offers best in class service to ensure the safety and reliability of your power infrastructure for years to come.



### Technical Field Services

Installation, removal, and repair

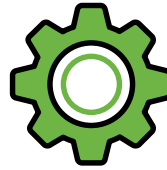
- Cables
- Circuit breakers
- Circuit switches
- Disconnects
- Panels
- Switchgear
- Transformers
- MCC's and MMC Starters
- (HV/LV), Emergency systems
- UPS's



### Technical Testing Services

Testing, maintenance, and compliance solutions

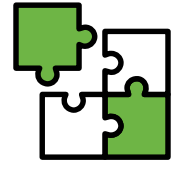
- Arc flash risk analysis
- Coordination and short circuit studies
- Infrared analysis
- Metering
- Primary or secondary injection testing
- Transformer oil sampling and testing
- OSHA and NFPA 70E maintenance programs



### Engineering Services

Engineering design and analysis

- Transmission
- Distribution
- Power plants
- Substation
- Grid modeling
- Electric heat tracing
- Power system studies
- Harmonics analysis
- Energy audits
- Power factor corrections
- Load balance studies
- HAZOP and risk assessment



### Specialty Services

The electrical services no one else does

- Double insulation power factor testing
- Transformer refurbishment
- Dialectic transformer testing
- MV megger and circuit testing

Spark Power Corp. (TSX: SPG)(SPG.WT) is a leading independent provider of integrated power solutions to industrial, commercial, and institutional customers across North America. Spark Power's 750+ employees help deliver powerful solutions that reduce costs, make the environment a priority and empower our 6,500+ customers to transition to the grid of the future. Learn more at [www.sparkpowercorp.com](http://www.sparkpowercorp.com).

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# UNDERSTANDING THE RELATIONSHIP BETWEEN OSHA AND NFPA 70E/70B

OSHA has not “adopted” NFPA 70E simply because adoption nationally would require a lengthy and expensive process. OSHA has instead referenced compliance to NFPA 70E using Section 5 (a) (1) of the Occupational Safety and Health Act of 1970, commonly referred to as the “General Duty Clause”, as their basis for implementation. The General Duty Clause states that employers “shall furnish to each of his employees: employment and a place of employment which are free from recognized hazards that are causing or likely to cause death or serious physical harm to its employees.”

## 6 POINT COMPLIANCE CHECKLIST

### 1. Have a completed and written NFPA 70E electrical safety plan:

#### **110.1 Electrical safety program: general:**

The employer shall implement and document an overall electrical safety program that directs activity appropriate to the risk associated with electrical hazards. The electrical safety program shall be implemented as part of the employer’s overall Occupational Health and Safety Management System.

### 2. Training and employee qualifications:

**110.2 (A) Training requirements:** Electrical Safety Training requirements contained shall apply to employees exposed to an electrical hazard when the risk associated with that hazard is not reduced to a safe level by the applicable electrical installation requirements.

**110.2 (A) (1) Qualified person:** A qualified person shall be trained and knowledgeable in the construction and operation of equipment or a specific work method and be trained to identify and avoid the electrical hazards that might be present with respect to that equipment or work method.

**110.3 Retraining:** Retraining in electrical safety work practices and applicable changes in this standard shall be performed at intervals not to exceed three (3) years.

### 3. Generate and post a facility electrical one-line document:

#### **120.5 Process for establishing and verifying an electrically safe work condition:**

Establish and verifying an electrically safe work condition shall include the following steps, which shall be performed in the order presented, if feasible.

**120.5 (1):** Determine all possible sources of electrical supply to the specific equipment. Check applicable up-to-date drawings, diagrams, and identification tags.

### 4. Perform an incident energy risk analysis:

#### **120.5 (A) General- an arc flash risk assessment shall be performed:**

(1) To Identify arc flash hazard (2) To estimate the likelihood of occurrence of injury or damage to health and the potential severity of injury or damage to health. (3) To determine if additional protective measures are required, including PPE.

#### **120.5 (B) Estimate of likelihood and severity:**

The estimate of the likelihood of occurrence of injury or damage to health and the potential severity of injury or damage to health shall take into consideration of the following: (1) The design of the electrical equipment and its operating time. (2) The electrical equipment operating condition and condition of maintenance.

#### **120.5 (H) Equipment labeling:**

Electrical equipment such as switchboards, panel boards, industrial control panels, meter socket enclosures, and motor control centers that are in other than dwelling units and that are likely to require explanation, adjustment, servicing, or maintenance while energized shall be marked with a label containing ALL the following information: (1) Nominal system voltage (2) Arc Flash Boundary (3) At least one of the following: (a) Available incident energy and the corresponding working distance OR Arc Flash PPE Category in Table 130.7 C (15)(a) or 130.7 C (15) (b), BUT NOT BOTH. (b) Minimum arc rating of clothing (c) Site-specific level of PPE.

### 5. Provide personal and other protective equipment:

#### **130.7 General:**

Employees exposed to electrical hazards when the risk associated with that hazard is not adequately reduced by the applicable electrical installation requirements shall be provided with, and shall use, protective equipment that is designed and constructed for the specific part of the body to be protected and for the work performed.

### 6. Establish an electrical maintenance program: NFPA 70B electrical

#### **Equipment Maintenance**

#### **NFPA 70B (5.2) Elements of an EPM program:**

(1) Responsible and qualified personnel. (2) Regularly scheduled inspection, testing, and servicing of equipment. (3) Survey and analysis of electrical equipment and systems to determine maintenance requirements and priorities. (4) Programmed routine inspections and suitable tests. (5) Accurate analysis of inspection and test reports so that proper corrective measures can be prescribed. (6) Performance of necessary work. (7) Concise and complete records.