ELECTRICAL DISTRIBUTION SYSTEM MAINTENANCE

District Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date Prepared Date Revised:

OBJECTIVE

To ensure adequate safety to persons engaged in maintenance and operation of electrical distribution facilities.

RATIONALE/PURPOSE

An effective switch maintenance program is essential to:

* Ensure electrical distribution system reliability.
* Develop predictive maintenance programs.
* Determine capital improvement budgeting.
* Develop loss trend analysis.
* Ensure system isolation capability.

METHODS/PROCEDURES

The following methods and procedures are recommendations that illustrate methods used by the electrical industry for electrical distribution system facilities.

**Plan for the Maintenance and Operation of an Electrical Distribution System**

Guidelines for maintaining and operating records for electrical distribution system should include:

* Overhead and underground line inspection and maintenance records, including pole inspection and line patrol records.
* Before digging adhere to state law requirement of notifying California 811 Underground Service Alert (USA) by dialing [811](https://www.california811.org/) at least two working days before excavation.
* Substation inspection and maintenance records
* Recloser and sectionalizer records
* Line voltage regulator records
* Distribution transformer record.

**This model form/template must be customized to meet your Agency’s needs.**

* Service interruption reports and summaries of experience
* Up-to-date system maps
* Emergency restoration plan

SAFETY CONSIDERATIONS

Effective maintenance and operation of electrical facilities can help to prevent damage to property, environment, and injury to the public and employees by:

* Reviewing arc-flash warnings
* Wearing appropriate PPEs when working in, around, or on electric facilities/equipment
* Precluding electrical equipment and distribution system damage
  + Inspection and testing frequency
    - Visual observations
    - Mechanical and electrical testing
* Facilitating operations and maintenance personnel safety
  + Identify safe work practices;
    - Identify hazards
    - Switching lockout/tagout
    - Safety signs and/or warning lights

COST BENEFIT

* Reduce system failure
* Avoid costly repair and replacement
* Create a manageable capital improvement budget
* Enhance system reliability

INSPECTION FORMS/CHECKLISTS/DOCUMENTATION/ASSETS

* Distribution Inspection Cycles

REFERENCES

Electrical work shall comply with the latest revisions to the following codes and standards:

1. National Electrical Code (NEC) - [National Fire Protection Association (NFPA) No. 70](https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=70).
2. National Electrical Safety Code [(NESC) - ANSI C2](https://www.techstreet.com/ieee/standards/ieee-c2-2017?_bt=224075084340&_bk=+nesc%20+code&_bm=b&_bn=g&_bg=24308510286&gclid=EAIaIQobChMI4NDRps_m6gIVUCCtBh3PTAMJEAAYASAAEgJDbvD_BwE&gateway_code=ieee&product_id=1914980).
3. Cal OSHA [8 CCR – 2299-2599](https://www.dir.ca.gov/title8/sub5.html) (Low Voltage) and [2700-2889](https://www.dir.ca.gov/title8/sub5.html) High Voltage.
   * 1. Title 8, Division 1, Chapter 4, Subchapter 5 (Electrical Safety Order).
4. Group 1 Low Voltage, Group 2 High Voltage safety Order.
5. Occupational Safety and Health Act (OSHA).
   * 1. Title 29 CFR 1910 Subpart S – Electrical.
     2. Title 29 CFR 1926 Subpart K, Subpart V – Electrical.
6. [NFPA 70E](https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=70E)- Standard for Electrical Safety Requirements for Employee Workplaces.
7. International Electrical Testing Association (NETA) Section 7.