S.O.P. 340.1 – ELECTRIC WORK PERMIT

MAINTENANCE & OPERATIONS SECTION

October 2020

I) PURPOSE:

1) To ensure that a reliable plan is in place for the safest possible means of working on energized equipment.

II) DESCRIPTION:

1) What is required for completing an Energized Electrical Work task when there are exposed energized electrical conductors or circuit parts that you may approach and/or interact with that can expose you to an electric shock or create an arcing fault that results in an arc flash. Depending on the voltage level you may only be exposed to electric shock as the voltage may not be high enough to sustain an arcing fault. An arc flash hazard can exist when energized electrical conductors or circuit parts are exposed or are within equipment in a guarded or enclosed condition, if a person is interacting with the equipment in a manner that could cause an electrical arc. Under normal operating conditions, enclosed energized equipment that has been properly installed and maintained is not likely to pose an arc flash hazard. As a Qualified Electrical Worker, it is more likely that you will be exposed to shock than to arc flash if you are not wearing appropriate PPE and using appropriate tools.

III) DEFINITIONS:

1) Arc Flash Hazard:

   An arc flash is a phenomenon where a flashover of electric current leaves its intended path and travels through the air from one conductor to another, or to ground. The results are often violent and when a human is in close proximity to the arc flash, serious injury and even death can occur. According to NFPA 70E, if you work on live equipment operating at 50 volts or more, then you must perform an arc flash hazard assessment. Even if you always deenergize equipment before working on it, an arc flash hazard assessment should be performed to determine the type of PPE to use when verifying that power is off.

2) Boundary, Limited Approach:

   An approach limit at a distance from an exposed energized electrical conductor or circuit part within which a shock hazard exists.

3) Boundary, Restricted Approach:

   1) An approach limit at a distance from an exposed energized electrical conductor or circuit part within which there is an increased likelihood of electric shock, due to electrical arc over combined with inadvertent movement, for personnel working in close proximity to the energized electrical conductor or circuit part.

4) Risk Assessment:

   1) An overall process that identifies hazards, estimates the potential severity of injury or damage to health, estimates the likelihood of occurrence of injury or damage to health, and determines if protective measures are required.

5) Shock Hazard:

   1) A dangerous condition associated with the possible release of energy caused by contact with or approach to energized electrical conductors or circuit parts.

6) Qualified Persons:

   1) (i.e. those permitted to work on or near exposed energized parts) shall, at a minimum, be trained in and familiar with the following: 1910.332(b)(3)(i), (ii), (iii) and 1910.332(c). The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment. VA Long Beach considers this person at minimum to be a Journeyman level Electrician.

IV) PROCEDURES:

1) Identify what work will need to be performed on the energized piece of equipment, what type of equipment you will be working on, and what is the voltage utilized by this equipment.
2) Determine the safe access to the work site.
3) Perform an arc flash analysis to determine the arc flash boundary, limited approach boundary, and restricted approach boundary.
4) Establish what PPE will be required per NFPA 70E.
5) Identify the closest disconnecting means for shutting down power in the event of an emergency.
6) Electrical Shutdown requires Utility and Service Impact Form, Activity Hazards Analysis (AHA), and VA Long Beach Electrical Work Permit (VALB EWP). Assure forms are signed and dated where required.
7) Electrical energized work will require an AHA and VALB EWP. Assure forms are signed and dated where required.
8) The AHA and VALB EWP documents must be completed by the Contractor's Journeymen Electrician or Electrical Subcontractor's Journeyman Electrician as specified on the VALB EWP.
9) Energized and De-Energized work being conducted on electrical equipment as specified on the VALB EWP form requires a signature from the Director or Associate Director.
10) All energized and de-energized work of electrical equipment will require, at minimum one Journeyman Electrician (Qualified Person) and one additional Journeyman Electrician or Apprentice with minimum one Journeyman Electrician as Safety Watch.
11) Each Qualified Person and Safety Watch as specified on the VALB EWP will be required to provide a copy of their credentials, such as license or certification.
12) All electrical equipment is considered energized until verified to be deenergized by a Journeyman Electrician as specified on the VALB EWP with the proper metering tool(s). This should be confirmed on the load side of disconnecting means and at the equipment being worked on as listed on the VALB EWP.
13) Personal Protection Equipment (PPE) is required for Category 2 or greater on all electrical work.
14) Each Qualified Person who is physically engaged in working on the equipment as specified in the VALB EWP will provide their own PPE, to include Lockout/Tagout.

15) OSHA 1910.147 The control of hazardous energy (Lockout/Tagout) and tag shall be properly filled out. Contractor may exceed but at a minimum, must meet the requirements set for lockout tagout by the VALB.

16) The information on each Lockout/Tagout should tell those in the area that there is danger present, and that the tag should not be removed, or the equipment operated. Tags must have empty lines where operators can fill out additional information about why the Lockout/Tagout procedure is being implemented. Assure you legibly print your name, company's name, telephone number where you can be contacted 24/7, and expected completion date.

17) When equipment that is being de-energized as specified in the VALB EWP is complete and is found to still be energized after testing, stop work and re-energize equipment. Confirm that equipment is returned to its original state and immediately contact your Point of Contact from the VALB Electric Shop. VALB Electric shop will assess and make recommendations to the Project Manager on how to proceed.

18) Energized electrical work will require the use of insulated electrical tools. All work conducted on the equipment as specified in the VALB EWP, will be inspected by the VALB Electric Shop before the equipment is placed back to its original state. VALB Electric Shop will confirm Lockout/Tagout is removed, and equipment is reenergized.

V) DOCUMENTATION:

1) Record all data by filling out VA Long Beach Electrical Work Permit which can be obtained from Electric Shop. Ensure you record information in the LOTO Record Book and submit paperwork to supervisor for review and signatures.

VI) FOLLOW-UP RESPONSIBILITY: Chief of Maintenance & Operations

VII) REVIEW AND REISSUE DATES:

1) Review Date: Annually

2) Reissue Date: October 2021