

ELECTRICAL SAFETY PROGRAM DEVELOPMENT CHECKLIST

This checklist can be used to assist with development or the review of an existing Electrical Safety Program or electrical safety documentation for gaps or omissions. This is not intended to be a protocol for an Internal Electrical Safety Audit of an Electrical Safety Program.

Note:

Danatec Electrical Safety Division has available a detailed Internal Electrical Safety Audit process and question set in its Licensed Electrical Safety Program “Product in a Box”. Contact Unlimited PPE (www.unlimitedppe.com) for more details on Danatec Electrical Safety Division products and services.

Table 1 - Electrical Safety Program Development Checklist

Question	Yes	No
Do you have an established Occupational Health and Safety Management System (OHSMS)?		
Have you reviewed your jurisdiction specific OH&S Regulations and any specific electrical safety requirements?		
Do you have an established Pre-Job Briefing and Planning checklist for energized electrical work?		
Do you have an established Hazard Identification, and Risk Assessment process? Specifically do you have a Field Level Hazard Assessment (FLHA) or equivalent document that is used in the field by workers at the work task location just before they complete the work task? <ul style="list-style-type: none"> - Does your company have a general Risk Assessment Procedure/Process? - Does your company have a Risk Matrix with Risk Level defined as Low, Medium or High? - Are the electrical hazards of arc flash and shock identified on the FLHA or equivalent document that your company uses? - Does the FLHA identify specific information to be documented for Arc Flash Risk Assessment and Shock Risk Assessment? - Does the FLHA identify any Electrical Specific PPE, Tools & Equipment on it? - Does the FLHA allow for the Qualified Electrical Worker to document confirmation of Absence of Voltage verified? - Does the FLHA allow for Electrical Emergency Response requirements to be documented? 		
Do you have an established Lockout/Tagout program and does it address the isolation of electrical equipment?		
Do you have a documented Electrical Safety Program with a “Framework / Table of Contents” consistent with the requirements of Occupational Health & Safety Management System Standards such as CSZ Z1000 for Canada or COR?		



Document: ELECTRICAL SAFETY PROGRAM		Subject: Pre-Development Checklist for Effective Change Management	
Issued By: UPPE	Approved By: TWB	Rev #: 3.0	Rev Date: Dec. 12, 2017



Question	Yes	No
If you have an Electrical Safety Program did you include content to identify applicable Regulations, Codes & Standards?		
If you have an Electrical Safety Program did you include an Appendix with Acronyms, and Definitions?		
Did you use the CSA Z462 <i>Workplace Electrical Safety</i> standard as a resource and the basis for policies and practices in the Electrical Safety Program if you have one developed?		
Do you have Management Commitment to the Electrical Safety Program?		
Has Management allowed for annual budget \$ to be assigned to electrical safety (e.g. Electrical Safety Program maintenance, training, Electrical Specific PPE, Tools & Equipment specification and procurement, engineering incident energy analysis studies, etc.)?		
If you have an Electrical Safety Program does it document its Purpose, Principle and Scope?		
If you have an Electrical Safety Program do you document Roles & Responsibilities related to controlling and implementing energized electrical work with specific policies defined for certain worker roles? Do the Roles & Responsibilities identify requirements related to implementing the Electrical Safety Program?		
If you have an Electrical Safety Program have you included the requirements for an Electrical Safety Watch/Stand-by Person?		
If you have an Electrical Safety Program is it available to all workers? Have you provided Electrical Safety Program Roll Out Training to Qualified Electrical Workers?		
Do you have someone assigned as an Electrical Safety Program Manager to be responsible for the development, implementation and on-going maintenance of the Electrical Safety Program?		
Do staff and senior management understand that the Electrical Safety Program is an on-going endeavor and the program is required to be reviewed and updated annually?		
Do you have a formal Work Order system for assignment of energized electrical work tasks? Do you define and document the "Work Flow Process" your company uses for assignment and execution of energized electrical work tasks?		
If you have an Electrical Safety Program have you documented requirements for Safe Installations, Canadian Electrical Code CEC Part 1 to meet minimum requirements for the Jurisdiction Having Authority related to Construction Permits and Annual Operating Permits? Have you had an Annual Inspection completed?		
If you have an Electrical Safety Program have you documented requirements for Equipment Labeling?		



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Do you have a documented detailed Specification for detailed Arc Flash & Shock Warning or Danger labels, electrical equipment door signage, Voltage Level labels for power distribution equipment, and detailed Arc Flash & Shock Warning or Danger labeling installation requirements?		
If you have an Electrical Safety Program have you included content and requirements for Portable Cord-and-Plug-Connected electrical equipment and extension cords?		
If you have an Electrical Safety Program have you addressed requirements for the use of GFCI protection related to Portable Cord-and-Plug-Connected electrical equipment and extension cords?		
Do you have portable in-line Ground Fault Circuit Interrupters (GFCIs) available for all workers?		
If you have an Electrical Safety Program does it document policy and practice requirements for? Establishing an Electrically Safe Work Condition Energized Electrical Work Permit Temporary Power Systems and Temporary Power Certificate Portable cord-and-plug connected electrical equipment Operational Readiness Checklist for Energizing & Re-energizing Electrical Equipment Working Near Overhead Power Lines & Buried Power Cables Alerting Techniques Alertness Blind Reaching Illumination Confined or Enclose Work Spaces Housekeeping Working Alone Policy Look Alike Equipment Portable Ladders No Jewelry Policy Temporary Protective Grounding Switching & Isolation Requirements		
Do you have documented Electrical Safe Work Procedures for energized electrical work tasks?		
Have you documented the Risk Assessment Procedure process as defined in CSA Z462 Clause 4.1.5.7 and CSA Z462 Annex F?		
Do you have a Risk Register Table to be used to document the Risk Assessment Procedure?		



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Do you have an Electrical Hazard Risk Assessment Matrix that is used with the Risk Register Table to complete the Risk Assessment Procedure for energized electrical work tasks?		
Do you have as-built Single Line Diagrams for your power distribution system? If you have High Voltage (>750V) power distribution equipment is the Single Line Diagram posted as required by CEC Rule 2-306?		
Have you completed an engineering arc flash incident energy analysis and applied detailed Arc Flash and Shock Warning labels to electrical equipment? Did you issue a detailed Technical Specification to the P.Eng. that was hired to complete the engineering arc flash incident energy analysis in order to control the scope of work, cost to complete the study and the requirements of the detailed report issued by the P.Eng.? Did you get a copy of the ETAP or SKM source file and any custom library files from the P.Eng. if you had a engineering arc flash incident energy analysis completed for your facility(ies)? Did you stipulate the specification for the detailed Arc Flash & Shock Warning labels? Did you identify a Maximum Allowed Working Incident Energy? Did you approve the "Operating Modes" that were determined for Minimum and Maximum Short Circuit Current? Did the P.Eng. use the "2 Second Rule" in the analysis? Were the correct Working Distances for arc flash calculations used?		
Have you identified a Maximum Allowed Working Incident energy level as a target for the P.Eng. when they review incident energy reduction strategies? Did you advise the P.Eng. of the incident energy reduction strategies you wanted evaluated (e.g. protective device settings changes, Maint. Mode Switch, Arc Flash Relay, etc.)?		
Are you aware of the 40 cal/cm2 Myth related to incident energy levels?		
Can your workers properly interpret detailed Arc Flash and Shock Warning labels that may be applied to power distribution equipment?		
If you do not have engineering arc flash incident energy analysis completed do you use and document your use of the Arc Flash PPE Category "Table Method"?		
Do your worker's identify and document the Shock Risk Assessment including documenting the maximum exposure voltage and Limited and Restricted Approach Boundaries?		
Do your qualified electrical workers identify and document when an arcing fault may exist related to an assigned energized electrical work task and then complete and document an Arc Flash Risk Assessment? Have your workers identified and do they apply the Arc Flash Boundary? Do Qualified Electrical Workers document the selection of their arc-rated clothing required for the energized electrical work task?		



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Do your Qualified Electrical Workers know that arc-rated clothing is identified by an Arc Thermal Performance Value (ATPV)?		
Are you aware that Arc Flash Suits are available with ATPVs of 65, 100 and 140 cal/cm ² ?		
Are you aware that Arc-rated Face Shields are available in a clear True Color Grey lens that enhances a worker's ability to see the work task and doesn't alter wire colors?		
Are you aware that Arc Flash Suit Hoods are available with clear True Color Grey shield lens that enhances a worker's ability to see the work task and doesn't alter wire colors? Do you have a hood ventilation system that vents the air to the front of the hood? Do you have a LED lamp mounted on the front of your Arc Flash Suit Hood to improve illumination of the work task?		
Do you define and control the work tasks that Qualified Electrical Workers can perform (i.e. low voltage versus high voltage work tasks)? Do you designate and confirm that a Qualified Electrical Worker is qualified and competent and further assigned the status of Low Voltage (<750V) or High Voltage (>750)? Has this designation process been documented?		
Do you have in place and use an "Energized Electrical Work Permit"?		
Do you document that an Electrically Safe Work Condition is established related to energized electrical equipment before working on it (e.g. repair and alteration)?		
Do you have an established Overhead Power Line Encroachment Policy? Do you have a Power Line Encroachment Authorization Permit process in place?		
Do you have Overhead Power Line safety related policies and training for your workers?		
If you have an Electrical Safety Program do you have detailed content of requirements for Electrical Specific PPE, Tools & Equipment as follows? Minimum Specification Procurement Selection Three Level System Inventory Management Performance Management Individual vs Shared Assignment Pre-Use Checks Care, Use & Maintenance (including laundering requirements) Frequency of Inspection & Testing		



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Do you have a detailed specification for Electrical Specific PPE, Tools & Equipment that was used to procure it?		
Have you procured and made available rubber insulating gloves with leather protectors for qualified electrical workers?		
Do you have available cotton liner gloves for use with rubber insulating gloves		
Do you have insulated hand tools (e.g. screwdrivers) for Qualified Electrical Workers? Do you know the "Approved Mark" for insulated hand tools for Canada?		
Do you have insulating hand tools (e.g. hot sticks for high voltage work tasks) for Qualified Electrical Workers?		
Are the Electrical Specific PPE, Tools & Equipment properly stored and regularly inspected?		
Are you completing minimum maintenance on energized electrical equipment?		
Do you have a documented Electrical Equipment Maintenance Program? Does the Electrical Equipment Maintenance Program address maintenance priority based on arc flash incident energy management?		
Are you aware of and do you have a copy of the CSA Z463 Guideline on electrical equipment maintenance?		
Are you aware of and do you have a copy of the NFPA 70B Recommended Practice for Electrical Equipment Maintenance?		
If you use an external Electrical Equipment Maintenance Contractor are they a NETA Accredited Corporation with NETA Approved Technicians?		
Do workers have access to manuals, single line drawings, procedures or other documentation to do the work?		
Is your electrical power distribution equipment and electrical system installation compliant with the Canadian Electrical Code (CEC) Part 1 (i.e. bonding/grounding, spacing, identification of equipment, etc.)		
Do you have appropriately certified and rated test instruments (e.g. Minimum Category III, 600V digital multi-meters for low voltage testing) available for your workers?		
Are employees and contractor workers trained in the care, use and maintenance of Electrical Specific PPE, Tools & Equipment?		
Are employees and contractor workers documenting that they have pre-use inspected and checked all Electrical Specific PPE, Tools & Equipment before they use it?		
Are the employees trained in company procedures for working on energized electrical equipment?		



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Do you establish an Electrical Work Zone using the documented arc flash and shock boundaries to establish the distance?		
Do you use red "Danger" tape to establish the Electrical Work Zone for energized electrical work?		
Does your Supervisors use spot audits and field checks to ensure the Electrical Safety Program is implemented correctly?		
Do you have a documented policy that advises all workers to report an electrical incident (e.g., shock, arcing fault or arc flash)? Do you have a specific Electrical Incident Investigation Report form?		
Have all workers been advised that all electrical incidents shall be reported as per company policies, procedures or formal reporting requirements for both shock and arc flash?		
Do you have a Qualifications & Training Matrix for electrical safety for the worker Roles you have in your Electrical Safety Program?		
Have you provided arc flash and shock training based on CSA Z462 to your Qualified Electrical Workers? Are you providing training at a minimum of a three (3) year frequency? Do you use "Blended Training" (i.e. eLearning and Instructor Led) for arc flash and shock training?		
Have you validated Qualified Electrical Worker electrical safety competency?		
Do all employees know how to activate your Emergency Response System?		
Have you provided Emergency Response training for affected workers and specifically requirements for release of shock victims?		
Do Qualified Electrical Workers have valid and current First Aid & CPR training?		
Has appropriate electrical safety awareness training been provided to Qualified Operations Workers and other Non-Electrical workers who may be exposed to electrical hazards (e.g. shock)?		
Have you completed a detailed Internal Electrical Safety Audit?		
Do you pre-qualify Electrical Contractors that will perform energized electrical work? Do you define by policy and check that the contractor's Qualified Electrical Workers have received arc flash and shock training? Do you confirm qualifications and competency of contractor Qualified Electrical Workers?		
Do you have a Management of Change process and a Management of Change Request Form available to manage changes to the ESP and your energized electrical equipment (i.e. protective device changes, changes to Single Line Diagram, etc.)?		