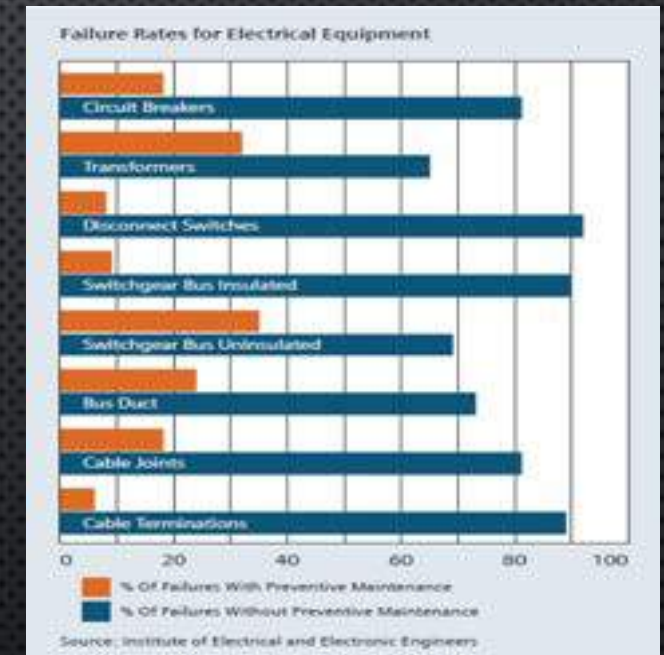


CSA Z463 – MAINTENANCE FOR ELECTRICAL SYSTEMS

THE ELECTRICAL MAINTENANCE PROGRAM CONSISTS OF THE FOLLOWING:

- RISK MANAGEMENT PROCESS FOR ELECTRICAL EQUIPMENT FAILURES
- DETERMINING EQUIPMENT FAILURE MODES
- DETERMINING MAINTENANCE STRATEGIES, TASKS AND FREQUENCY
- PLANNING OF MAINTENANCE SHUTDOWN AND PRIORITIZING TASKS
- ROUTINE INSPECTIONS
- THOROUGH REVIEW OF THE INSPECTION REPORTS SO CORRECTIVE MEASURES CAN BE PRESCRIBED
- INVENTORY OF SPARE PARTS FOR CRITICAL COMPONENTS
- ELECTRICAL EMERGENCY PREPAREDNESS



MOL INVESTIGATION...

AN INVESTIGATOR WILL:

- DETERMINE SCOPE OF WORK
- DETERMINE LICENCE REQUIRED (*MAINTENANCE OR CONSTRUCTION*)
- DETERMINE IF PERMIT WAS TAKEN OUT
- REVIEW WORKERS TRAINING RECORDS
- REVIEW H&S ELECTRICAL SAFETY PROGRAM AND POLICIES
- DETERMINE IF REASONABLE PRECAUTIONS WERE TAKEN
- DETERMINE WHETHER TO CHARGE THE WORKER OR EMPLOYER

MOL INVESTIGATION...

DO YOU HAVE DOCUMENTATION “QUALIFYING” WORKERS?

- THE TERM “COMPETENT WORKER” IS GONE – REPLACED BY “QUALIFIED WORKER”. QUALIFICATIONS REQUIRE TRAINING, DOCUMENTATION, MEASURING AND MONITORING WORKERS UNDERSTANDING OF HAZARDS AND POSSIBLE INJURY

HAVE WORKERS DEMONSTRATED AN ABILITY TO PERFORM DUTIES SAFELY?

- IS THIS DOCUMENTED?

HAVE WORKERS READ AND UNDERSTOOD THEIR SAFE WORK PRACTICES AND IS THIS DOCUMENTED?

- IS THE ELECTRICAL SAFE WORK PRACTICES POLICY COMPLIANT WITH THE LATEST CSA Z462 STANDARD?

CLOSING

- *QSR WISHES TO HELP FULFILL EMPLOYERS ELECTRICAL SAFETY NEEDS AND REDUCE WORKER OCCUPATIONAL RISKS AND INJURY. PLEASE CAREFULLY CONSIDER THIS INFORMATION AND THE ASSOCIATED BENEFITS*
- *QSR WOULD BE HAPPY TO AUDIT YOUR ELECTRICAL SAFETY PROGRAM AND PROVIDE AN ESTIMATE FOR A COMPLIANT ELECTRICAL SAFETY PROGRAM AND WORKER TRAINING. THANK YOU*
- *IN ONTARIO, THE MOST COMMONLY CITED CAUSE OF AN ELECTRICAL-RELATED FATALITY IS: IMPROPER INSTALLATION OR PROCEDURE, AND LACK OF HAZARD ASSESSMENT, ACCOUNTING FOR 70% OF FATALITIES*

SOURCE: ONTARIO ELECTRICAL SAFETY REPORT

CLOSING



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Engineering Services

- Electrical studies
- Arc-flash analysis, report and labels
- Electrical safety programs, policies, and procedures
- Electrical maintenance programs for safety and risk reduction
- Hazardous area classification studies
- Electrical engineering services

Training & Auditing Services

- Electrical awareness (*electrical workers*)
- Electrical awareness (*non-electrical workers*)
- Contact Release (*and volt testing review*)
- Electrical Safety Program and Policies Roll-out training
- Auditing workers understanding and compliance of safety procedures
- See available courses next page



Dear Engineering, H&S, Maintenance and Operations professionals,

QSR Electrical Engineering is a Sarnia based engineering firm specializing in *electrical safety programs*; since 2015 we have been providing complete electrical safety services and solutions with nearly 20 years of industrial electrical experience.



There are 3 mandated electrical safety standards for all manufacturing and industrial sites. They have all been recently updated, and include:

1. Lock out tag out (CSA Z460-2020)
2. Electrical safety in the workplace (CSA Z462-2021)
3. Maintenance for electrical systems (CSA Z463-2018)

QSR specializes in electrical safety and meets current Standards by:

- Creating an electrical safety program complete with principles & controls
- Detailing an electrical safety policy to manage risks (updated every 3 years),
- Quantifying workers hazards (arc-flash study updated every 5 years),
- Training electrical hazards and mitigation techniques (every 3 years),
- Detailing an electrical maintenance policy to manage safety and reliability
- Provide Hazardous Area Classification analysis and reports

Contact us today for all your electrical safety and design needs

Keeping industry safe and productive

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ELECTRICAL SAFETY TRAINING COURSES



Course:	ELECTRICAL SAFETY AWARENESS - NON ELECTRICAL WORKERS
COURSE OVERVIEW	This course was developed specifically for process operators and operating technicians who operate electrical equipment – and write safe work permits for electrical workers. It meets the requirements of CSA Z462 and ensures an understanding of occupational electrical hazards (shock & arc-flash), safe work procedures and PPE selection & testing.
	It also covers: <ul style="list-style-type: none"> • Electrical faults (short-circuits vs. overloads) • Electrical hazards, causes and mitigation (shock & arc-flash) • Industrial electrical systems vs. the body's electrical system • Operator case studies • Thorough review of arc-flash hazards, causes and mitigating factors, labels, videos, burns and time to burn, working distance, and arc-blast • Human factors • Gloves and testing • Safe switching technique • Resetting of tripped breakers • Basic understanding of CSA Z462 electrical worker duties including the issuance of safe work permits • H&S Department responsibilities
PROGRAM CONTENT	<ul style="list-style-type: none"> • Electrical safety awareness and hazard mitigation • PPE, Switching and CSA Z462 requirements
TARGET AUDIENCE	Operators; Instrument, HVAC, battery & elevator technicians, shift supervisors, foreman, engineers, managers, H&S coordinators, building wardens, etc.
TRAINING TIME (hours):	4 hours
RECERTIFICATION	36 months

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Course:	ELECTRICAL SAFETY AWARENESS - ELECTRICAL WORKERS
COURSE OVERVIEW	This course was developed for electrical workers who operate and maintain electrical equipment. It meets the requirements of CSA Z462 ensuring an understanding of occupational electrical hazards, PPE, CSA Z462 and safe work procedures.
	Part 1 (Electrical Awareness): <ul style="list-style-type: none"> • Electrical faults, hazards (shock & arc-flash), and causes • Industrial electrical systems vs. the body's electrical system Part 2 (Arc-flash): <ul style="list-style-type: none"> • Safety standards updates • Thorough review of arc-flash hazards, causes and mitigating factors, labels, videos, case studies, burns and time to burn, working distance, and arc-blast Part 3 (PPE): <ul style="list-style-type: none"> • Clothing and layering • Gloves and testing, hearing protection, blankets • Temporary ground application & procedures, and tools Part 4 (CSA Z462): <ul style="list-style-type: none"> • In-depth review of CSA Z462 • Safe work practices • Live work (testing, troubleshooting and repairs) • Establishing an electrical safe work condition • Employer and employee responsibilities • Limits of Approach Boundaries • Human performance • Case studies of incidents • Perform risk analysis • General safe work practices: switching technique, tripped breakers, LOTO, GFCIs, CTs, etc.
TARGET AUDIENCE	Substation electricians, commercial and industrial electricians
DURATION	Full day – 8.5 hours
RECERTIFICATION	36 months

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Course:	ELECTRICAL SAFETY – CONTACT RELEASE
COURSE OVERVIEW	This course was developed for electrical workers exposed to shock hazards, and those responsible for the safe release of victims exposed to energized electrical conductors or circuit parts. The course satisfies CSA Z462 4.1.7.3.1.
	The course reviews the fundamentals and limitations of voltage testing (Low & Medium Voltage) and what to do if something goes wrong.
	Training includes: <ul style="list-style-type: none"> • Electrically Safe Work Condition • PPE • Voltage testers and Limitations • Low and Medium voltage volt testing methods • Electrical Hazards • Preparing for electrical hazardous work • Contact Release methods
TARGET AUDIENCE	Substation electricians, commercial and industrial electricians, those responsible to be an electrical standby
DURATION	2 hours
RECERTIFICATION	12 months

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- CONSIDER PUTTING PRESENTATION IN NEW WEB SITE