



ONTARIO COLLEGE OF TRADES

ORDRE DES MÉTIERS DE L'ONTARIO

Apprenticeship
Training Standard

Powerline Technician

Trade Code: 434A

Development Date: January 2003

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SKILL SETS

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SKILL SETS



**COMPETENCY ANALYSIS PROFILE
POWERLINE TECHNICIAN
ON-THE-JOB TRAINING STANDARDS**

← **SKILLS** →

<p>DEMONSTRATE SAFE WORKING PRACTICES</p> <p style="text-align: right;">U5420.0</p>	<p>Identify, control and eliminate potential health and safety hazards</p> <p style="text-align: right;">U5420.01</p>	<p>Select, wear, adjust, use and maintain correctly fitting protective devices</p> <p style="text-align: right;">U5420.02</p>	<p>Perform evaluation and rescue procedures</p> <p style="text-align: right;">U5420.03</p>	<p>Apply basic first aid to treat various conditions.</p> <p style="text-align: right;">U5420.04</p>	<p>Practice good housekeeping</p> <p style="text-align: right;">U5420.05</p>
	<p>Provide training and instruction to coworkers</p> <p style="text-align: right;">U5420.06</p>	<p>Work within safe physical limits</p> <p style="text-align: right;">U5420.07</p>	<p>Maintain a safe working electrical environment</p> <p style="text-align: right;">U5420.08</p>		
<p>COMMUNICATE AND INTERACT WITH OTHERS</p> <p style="text-align: right;">U5421.0</p>	<p>Communicate with co-workers</p> <p style="text-align: right;">U5421.01</p>	<p>Communicate with customers and external organizations</p> <p style="text-align: right;">U5421.02</p>	<p>Report hazards, incidents, injuries, and environmental impacts</p> <p style="text-align: right;">U5421.03</p>	<p>Maintain documentation</p> <p style="text-align: right;">U5421.04</p>	
<p>PREPARE JOB PLAN</p> <p style="text-align: right;">U5422.0</p>	<p>Identify worksite considerations</p> <p style="text-align: right;">U5422.01</p>	<p>Determine job specifications</p> <p style="text-align: right;">U5422.02</p>	<p>Determine job material and equipment</p> <p style="text-align: right;">U5422.03</p>	<p>Establish and apply lockout, tagging and hold-off procedures to electrical equipment</p> <p style="text-align: right;">U5422.04</p>	
<p>SELECT, OPERATE AND MAINTAIN TOOLS AND EQUIPMENT</p> <p style="text-align: right;">U5423.0</p>	<p>Select, inspect, maintain, and use hand and small power tools</p> <p style="text-align: right;">U5423.01</p>	<p>Inspect, operate and maintain vehicles and auxiliary equipment</p> <p style="text-align: right;">U5423.02</p>	<p>Set up and stabilize mobile equipment</p> <p style="text-align: right;">U5423.03</p>		
<p>INSTALL, MAINTAIN AND REMOVE POWER SYSTEMS POLE</p> <p style="text-align: right;">U5424.0</p>	<p>Identify and verify pole requirements</p> <p style="text-align: right;">U5424.01</p>	<p>Frame, erect and backfill steel, wood or concrete poles</p> <p style="text-align: right;">U5424.02</p>	<p>Straighten poles</p> <p style="text-align: right;">U5424.03</p>	<p>Remove poles</p> <p style="text-align: right;">U5424.04</p>	<p>Test and assess the integrity of the poles</p> <p style="text-align: right;">U5424.05</p>
<p>MAINTAIN TRANSMISSION TOWERS AND STRUCTURES</p> <p style="text-align: right;">U5425.0</p>	<p>Conduct visual inspections on transmission towers and structures</p> <p style="text-align: right;">U5425.01</p>	<p>Service transmission towers and structures</p> <p style="text-align: right;">U5425.02</p>			

SKILL SETS



**COMPETENCY ANALYSIS PROFILE
POWERLINE TECHNICIAN
ON-THE-JOB TRAINING STANDARDS**

← **SKILLS** →

INSTALL AND MAINTAIN OVERHEAD POWER SYSTEMS U5426.0	Install and remove conductors and insulators U5426.01	Splice or repair overhead conductors U5426.02	Install accessories on conductors U5426.03	Install, maintain or remove switching devices U5426.04	Install and remove service/secondary conductors U5426.05
	Inspect overhead power systems U5426.06	Upgrade overhead power system structures U5426.07	Install and attach anchoring and guying systems U5426.08	Install, troubleshoot and maintain streetlight U5426.09	
TROUBLESHOOT OVERHEAD AND UNDERGROUND POWER SYSTEMS 5457.0	Assess and determine overhead and underground power system problems U5427.01	Diagnose problems of single and three phase transformers U5427.02	Diagnose problems in the power distribution station U5427.03	Isolate and restore power to a problem or affected area U5427.04	
INSTALL AND MAINTAIN UNDERGROUND DISTRIBUTION SYSTEMS U5428.0	Install concrete or fiberglass foundations for equipment U5428.01	Install underground cables U5428.02	Install and remove underground primary and secondary junction boxes and switching cubicles U5428.03	Terminate and splice primary and secondary underground cables U5428.04	Test cables and connections U5428.05
	Perform switching, isolating, and grounding operations of underground equipment U5428.06	Perform maintenance operations in an underground power system U5428.07			
INSTALL, MAINTAIN AND REMOVE TRANSFORMERS U5429.0	Identify and select the appropriate transformer for installation U5428.01	Install and energize pole mounted transformers U5428.02	Install, connect and energize padmount transformers and other underground system transformers U5428.03	Perform maintenance operations on transformer U5428.04	Remove a transformer U5428.05
INSTALL, OPERATE AND MAINTAIN SYSTEM PROTECTION, CONTROL AND INSTRUMENTATION EQUIPMENT U5430.0	Install, operate And/or remove power interrupting devices U5430.01	Ensure system power quality improvement U5430.02	Maintain metering transformers, metering devices and associated components U5430.03	Conduct current, voltage and phase rotation checks. U5430.04	

**SKILL
SETS**



**COMPETENCY ANALYSIS PROFILE
POWERLINE TECHNICIAN
ON-THE-JOB TRAINING STANDARDS**



HANDLE ENERGIZED CONDUCTORS USING RUBBER PROTECTIVE EQUIPMENT 5431.0	Use rubber protective equipment and barriers 5431.01	Install or remove rubber protective equipment on energized apparatus 5431.02	Relocate energized conductors 5431.03	Maintain live line devices 5431.04	Install and remove energized conductor items 5431.05
HANDLE ENERGIZED CONDUCTORS USING LIVE LINE TOOL METHOD 5432.0	Maintain live line tools and equipment 5432.01	Install protective barriers 5432.02	Change insulators and relocate conductors using live line tools 5432.03	Maintain live line components 5433.04	
SELECT, MAINTAIN AND OPERATE RIGGING AND HOISTING EQUIPMENT 5433.0	Select required rigging and hoisting equipment 5433.01	Maintain hoisting and rigging equipment 5433.02	Perform the lift or move 5433.03		

PREFACE

This training document was developed by the Workplace Support Services Branch of the Ministry of Training, Colleges and Universities (MTCU) in consultation with representatives from the industry. These Training Standards are intended to be used by the apprentice, trainers and employers as a "blueprint" for training or as a prerequisite for government accreditation/certification.

The care and maintenance of this book is the joint responsibility of the apprentice and the employer. The Training Standards were developed specifically for documenting the apprentice's acquisition of skills.

The book becomes the only record of an apprentice's training.

Please Note: Apprenticeship Training and Curriculum Standards were developed by the Ministry of Training, Colleges and Universities (MTCU). As of April 8th, 2013, the Ontario College of Trades (College) has become responsible for the development and maintenance of these standards. The College is carrying over existing standards without any changes.

However, because the Apprenticeship Training and Curriculum Standards documents were developed under either the Trades Qualification and Apprenticeship Act (TQAA) or the Apprenticeship and Certification Act, 1998 (ACA), the definitions contained in these documents may no longer be accurate and may not be reflective of the Ontario College of Trades and Apprenticeship Act, 2009 (OCTAA) as the new trades legislation in the province. The College will update these definitions in the future.

Meanwhile, please refer to the College's website (<http://www.collegeoftrades.ca>) for the most accurate and up-to-date information about the College. For information on OCTAA and its regulations, please visit: <http://www.collegeoftrades.ca/about/legislation-and-regulations>

IMPORTANT DIRECTIONS TO EMPLOYERS

The Training Standards identify skills required for this occupation and its related training program.

These Training Standards have been written in concise statements which describe how well an apprentice must perform each skill in order to become competent. Competence means being able to do the performance to the required standard on request.

In using these Training Standards, trainers will be able to ensure that the apprentice is developing skills detailed for the occupation.

Employers are required to sign off and date the skills following each successful acquisition.

Employers participating in this training program will be designated as the Signing Authority and are required to attest to successful achievement by signing the appropriate box included at the end of each unit.

IMPORTANT DIRECTIONS TO THE APPRENTICE

1. All hours working for each employer should be recorded in the Employer Information section. All Performance Objectives and skills completed while working for each Employer should be recorded.
2. The "Summary of Hours" should be completed, signed and dated by both the apprentice and employer when either all terms of the training agreement have been completed or the apprentice leaves the employer.
3. It is the responsibility of the apprentice to inform the local Apprenticeship Client Services office regarding the following changes:
 - change of employer address;
 - change of apprentice name or address;
 - transfer to a new employer.
4. At the fulfilment of all terms of a Contract of Apprenticeship, the Apprentice Completion Form must be completed and signed by the current employer. Present these completed and authorized Training Standards and the Apprentice Completion Form to your local Apprenticeship Client Services office.

NOTICE OF COLLECTION OF PERSONAL INFORMATION

1. At any time during your apprenticeship training, you may be required to show this training standard to the Ministry of Training, Colleges and Universities (the Ministry). You will be required to disclose the signed Apprenticeship Completion form to the Ministry in order to complete your program. The Ministry will use your personal information to administer and finance Ontario's apprenticeship training system, including confirming your completion and issuing your certificate of apprenticeship.
2. The Ministry will disclose information about your program completion and your certificate of apprenticeship to the Ontario College of Trades, as it is necessary for the College to carry out its responsibilities.
3. Your personal information is collected, used and disclosed by the Ministry under the authority of the Ontario College of Trades and Apprenticeship Act, 2009.
4. Questions about the collection, use and disclosure of your personal information by the Ministry may be addressed to the:

Manager, Employment Ontario Contact Centre
Ministry of Training, Colleges and Universities
33 Bloor St. E, 2nd floor, Toronto, Ontario M7A 2S3
Toll-free: 1-800-387-5656; Toronto: 416-326-5656
TTY: 1-866-533-6339 or 416-325-4084.

APPRENTICE RECORD

Apprentice Name: _____

Contract Number: _____
(If applicable)

EMPLOYER INFORMATION

Name: _____

Address: _____

Telephone: _____

Summary of Training:

Dates of Employment: From _____ To _____

Performance Objectives signed off:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Employer Signature

Date

Apprentice Signature

Date

APPRENTICE RECORD

Apprentice Name: _____

Contract Number: _____
(If applicable)

EMPLOYER INFORMATION

Name: _____

Address: _____

Telephone: _____

Summary of Training:

Dates of Employment: _____
From To

Performance Objectives signed off:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Employer Signature Date

Apprentice Signature Date

APPRENTICE RECORD

Apprentice Name: _____

Contract Number: _____
(If applicable)

EMPLOYER INFORMATION

Name: _____

Address: _____

Telephone: _____

Summary of Training:

Dates of Employment: From _____ To _____

Performance Objectives signed off:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

_____	_____	_____	_____
Employer Signature	Date	Apprentice Signature	Date

APPRENTICE COMPLETION FORM

Apprentice Name: _____
Print

Signature

Social Insurance Number: _____

Skill sets when completed should be signed off by the Employer on the following page and presented with this completion form to your local Apprenticeship Client Services office. Any supporting documentation should also be attached.

In-School Completed: Yes () No () Not Applicable ()
(proof to be provided)

Hours completed as Yes () No () Not Applicable ()
per Contract:

Employer Name: _____

Address: _____

Telephone: _____

Signature

MTCU USE ONLY:

Recommended for Exam: Yes () No ()

Signature

Consultant/Office Code

You will be required to disclose this signed form to the Ministry of Training, Colleges and Universities in order to complete your program. The Ministry will use your personal information to administer and finance Ontario's apprenticeship training system. For further information please see the notice/declaration for collection of personal information that is referenced in the table of contents of this training standard.

SKILL SET COMPLETION FORM

SKILL SETS	TITLE	SIGNING AUTHORITY
U5420.0	Demonstrate Safe Working Practices	_____
U5421.0	Communicate and Interact with Others	_____
U5422.0	Prepare Job Plan	_____
U5423.0	Select, Operate and Maintain Tools and Equipment	_____
U5424.0	Install, Maintain and Remove Power System Poles	_____
U5425.0	Maintain Transmission Towers and Structures	_____
U5426.0	Install and Maintain Overhead Power Systems	_____
U5427.0	Troubleshoot Overhead and Underground Power Systems	_____
U5428.0	Install and Maintain Underground Distribution Systems	_____
U5429.0	Install, Maintain and Remove Transformers	_____
U5430.0	Install, Operate and Maintain System Protection, Control and Instrumentation Equipment	_____
U5431.0	Handle Energized Lines Using Rubber Protective Equipment	_____
U5432.0	Handle Energized Lines Using Live Line Tool Method	_____
U5433.0	Select, Maintain and Operate Rigging and Hoisting Equipment	_____

U5420.0 DEMONSTRATE SAFE WORKING PRACTICES

GENERAL PERFORMANCE OBJECTIVE

Demonstrate safe working practices and procedures by: identifying, controlling and eliminating potential health and safety hazards; selecting, wearing, adjusting, using and maintaining personal protective equipment; performing evacuation and rescue procedures; applying basic first aid treatment; practicing good housekeeping; providing training and instruction; working within safe physical limits; and ensuring a safe working electrical environment.

PERFORMANCE OBJECTIVES

SKILLS

5420.01 **Identify, control and eliminate potential health and safety hazards** including electrical, chemical, pressure, gravitational, aural, and environmental by applying appropriate barriers to eliminate or reduce the potential for injury to self and others in compliance with acts, codes, regulations and directives including Safety Legislation (Occupational Health and Safety Act), and associated regulations, WHMIS (Workplace Hazardous Materials Information System), EPA (Environmental Protection Act), DGTA (Dangerous Goods Transportation Act), WSIA (Workplace Safety and Insurance Act), HTA (Highways Traffic Act), the Electricity Act CESC (Canadian Electrical Safety Code), TSSA (Technical Standards and Safety Authority), company policies and procedures, and approved safe work practices.

Date Completed

Trainer Signature

Apprentice Signature

U5420.0 DEMONSTRATE SAFE WORKING PRACTICES - Cont'd

5420.02 **Select, wear, adjust, use and maintain correctly fitting protective devices** such as hard hats, safety glasses, di-electric footwear, fall protective devices, ear protectors, respirators, and other related equipment for specific job related tasks to ensure correct fit and optimum protection in accordance with manufacturers' instructions, specifications and recommendations, government regulations, company policies and procedures and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5420.03 **Perform evacuation and rescue procedures** by: assessing the situation; organizing the rescue team; carrying out the evacuation procedure to rescue the victim; and, move to a safe place where first aid may be rendered; to ensure the safety of self and others, in compliance with government regulations and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5420.04 **Apply basic first aid to treat various conditions** including electrical contact, burns, wounds, chemical exposures, fractures, eye contamination or sudden illnesses by using methods and equipment appropriate to the injury, so that the victim is stabilized and comfortable until qualified medical assistance becomes available, in accordance with Safety Legislation and company policies and procedures.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

U5420.0 DEMONSTRATE SAFE WORKING PRACTICES - Cont'd

5420.05 **Practice good housekeeping** by: ensuring that the worksite environment is clean, organized, and free of obstructions; that related tools, materials and equipment are kept clean and in good working condition; and, that all tools and equipment are stored in a designated location for ease of access in accordance with Safety Legislation, manufacturers' recommendations, instructions and guidelines, and company policies and procedures.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5420.06 **Provide training and instruction to co-workers** by: presenting demonstrations of the on-the-job tasks; assisting in identifying areas requiring training; and, assessing personal competency and providing feedback in accordance with government regulations, and company policies and standards.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5420.07 **Work within safe physical limits** by: applying correct body mechanics when pole climbing, climbing structures, bending, and lifting; and, using safe handling procedures when transporting and relocating light, heavy or awkward loads in accordance with Safety Legislation, manufacturers' instructions or recommendations, company policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

U5420.0 DEMONSTRATE SAFE WORKING PRACTICES - Cont'd

5420.08 **Maintain a safe working electrical environment** by: maintaining safe working limits, the use of barriers, applying and performing approved grounding and bonding procedures for overhead, underground, station and vehicle equipment applications for the protection of personnel and equipment; in accordance with Safety Legislation, company standards, policies and procedures, and approved safe work practices.

Date Completed

Trainer Signature

Apprentice Signature

Employer/Sponsor Name

Employer/Sponsor Signature

U5421.0 COMMUNICATE AND INTERACT WITH OTHERS

GENERAL PERFORMANCE OBJECTIVE

Communicate and interact with others by: communicating with co-workers, customers and external organizations; reporting hazards, incidents, injuries and environmental impacts; and maintaining documentation.

PERFORMANCE OBJECTIVES

SKILLS

5421.01 **Communicate with co-workers** including supervisors, office, planning and engineering staff, control room staff, stores personnel, and joint health and safety committees, using verbal, written, electronic, and visual methods, to relate work processes, reports, and documentation, ensuring that information communicated is clear, concise, accurate, timely and of sufficient detail in accordance with company standards.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5421.02 **Communicate with customers and external organizations** including the general public, contractors, commercial, and institutional groups, using written, verbal, and electronic methods to respond to outages, work process enquiries, complaints, or requests, ensuring that the information communicated is clear, concise, timely, and effective in accordance with standard company policies and procedures.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

U5421.0 COMMUNICATE AND INTERACT WITH OTHERS - Cont'd

5421.03 **Report hazards, incidents, injuries, and environmental impacts** to the appropriate authorities including supervisory personnel, police, fire station, medical, and environmental response team, by using written, verbal, or electronic communication methods in accordance with government regulations, Safety Legislation, EPA and company policies and procedures.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5421.04 **Maintain documentation** including service reports, work orders, time sheets, injury reports, log sheets, vehicle inspections, tailboard reports, utility work protection code information, and maintenance records in accordance with design specifications, government regulations, manufacturers' instructions, recommendations and specifications, company policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

Employer/Sponsor Name	Employer/Sponsor Signature
_____	_____

U5422.0 PREPARE JOB PLAN

GENERAL PERFORMANCE OBJECTIVE

Prepare the job plan by: identifying worksite considerations; determining job specifications; and determining job material and equipment.

PERFORMANCE OBJECTIVES

SKILLS

5422.01 **Identify worksite considerations** including underground plant utilities, overhead utilities, police, traffic control, and railway utilities, taking into account power outages/interruptions, customer needs, worksite safety, and work efficiency in compliance with AHJ (Authorities Having Jurisdiction), government regulations, company policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5422.02 **Determine job specifications** including job methods, assignments and the work process by identifying: site hazards; requirement for safety barriers; sequential order of work; methods required to complete the task; and, the responsibilities of the workers; to ensure the effectiveness of the work plan, in compliance with company policies and practices, government regulations, and safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

U5422.0 PREPARE JOB PLAN - Cont'd

5422.03 **Determine job material and equipment** by: assessing work orders and/or instructions, and job plans, to ensure that material and equipment identified are the correct ones for the application, in accordance with company policies and procedures, and standards of IEEE (Institute of Electrical and Electronic Engineers), ANSI (American National Standards Institute), CEA (Canadian Electrical Association), CSA (Canadian Standards Association), ASTM (American Society for Testing Materials), UL (Underwriters Laboratories), and any other government regulations, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5422.04 **Establish and apply lockout, tagging and hold-off procedures to electrical equipment** prior to commencing maintenance, overhaul or construction functions of new or existing equipment in accordance with Safety Legislation, Work Protection Code and company policies and procedures.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____
	Employer/Sponsor Name	Employer/Sponsor Signature
	_____	_____

U5423.0 SELECT, OPERATE AND MAINTAIN TOOLS AND EQUIPMENT

GENERAL PERFORMANCE OBJECTIVE

Select, operate and maintain tools and equipment by: selecting, inspecting, maintaining and using hand and small power tools; inspecting, operating and maintaining vehicles and auxiliary equipment; and, setting up and stabilizing mobile equipment.

PERFORMANCE OBJECTIVES

SKILLS

5423.01 **Select, inspect, maintain, and use hand and small power tools** by: noting their safety features; carrying out visual inspections to identify defects, unsafe conditions or deficiencies; cleaning; repairing; adjusting; lubricating; testing; and, storing; ensuring power tools are in safe operating condition and are used as prescribed in manufacturers' instructions, recommendations and specifications in accordance with Safety Legislation, company directives, policies, and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5423.02 **Inspect, operate and maintain vehicles and auxiliary equipment** by: carrying out pre-operational checks and inspections; performing scheduled inspections; cleaning; lubricating; and, performing minor repairs as prescribed by manufacturers' instructions, recommendations and specifications, Safety Legislation, EPA, HTA, government regulations, and company directives, policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

U5423.0 SELECT, OPERATE AND MAINTAIN TOOLS AND EQUIPMENT -
Cont'd

5423.03 **Set up and stabilize mobile equipment** including RBD (radial boom derrick), aerial device, and conductor stringing equipment by: ensuring worksite conditions will support equipment; interpreting load charts; performing stability inspection such as functional tests; carrying out current leakage tests when required; ensuring adequate vehicle and equipment grounding; and, setting up barriers for traffic or pedestrian control; as prescribed by manufacturers' instructions, recommendations, and specifications, Safety Legislation, HTA, government regulations, and company directives, policies and procedures, and approved safe work practices.

Date Completed

Trainer Signature

Apprentice Signature

Employer/Sponsor Name

Employer/Sponsor Signature

U5424.0 INSTALL, MAINTAIN AND REMOVE POWER SYSTEM POLES

GENERAL PERFORMANCE OBJECTIVE

Install, maintain and remove power system poles by: identifying and verifying pole requirements; framing, erecting and backfilling poles in an isolated or de-energized environment; straightening poles; removing poles; testing and assessing the integrity of poles; conducting visual inspection on transmission structures to identify defects; and maintaining transmission structures.

PERFORMANCE OBJECTIVES

SKILLS

5424.01 **Identify and verify pole requirements** including type, class, size, position, and site location requirements by: referring to sources including work orders, written or verbal instructions, underground plant locates, technical documentation, drawings, staking data material, and easements, in accordance with municipal guidelines, company directives, policies and procedures, Safety Legislation, HTA, government regulations, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5424.02 **Frame, erect and backfill steel, wood or concrete poles** in an isolated or de-energized environment by: preparing hole and setting the pole; using the appropriate equipment including RBD, crane, backhoe, block and tackle, and pike pole method; and, framing pole to utility configuration standards; in accordance with company policies and procedures, manufacturers' instructions, recommendations, and specifications, CSA, Safety Legislation, HTA, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

U5424.0 INSTALL, MAINTAIN AND REMOVE POWER POLE SYSTEMS - Cont'd

5424.03 **Straighten poles** by: loosening the soil around the pole using spud bar, spoon, shovel, auger, or backhoe; straightening poles by RBD, backhoe, block and tackle, and pike poles; attaching temporary or permanent guying systems; and, following all material and equipment manufacturers' instructions, recommendations, and specifications; in accordance with company directives, policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5424.04 **Remove poles** by loosening soil around the pole using appropriate methods; selecting, hoisting or pulling equipment including pole jack, RBD, backhoe, overhead crane, or gin pole; using block and tackle equipment and attaching it to a suitable position; removing, storing, or positioning pole in a secure location such as a pole trailer; and backfilling hole; and, following all material and equipment manufacturers' instructions, recommendations and specifications; in accordance with company directives, policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5424.05 **Test and assess the integrity of the poles** by: visually inspecting the condition of the base; checking elevated locations of stress or compressive forces acting on the pole; drilling core samples in wood; hammering and sonic testing; and, following all material and equipment manufacturers' instructions, recommendations and specifications; in accordance with company directives, policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

Employer/Sponsor Name	Employer/Sponsor Signature
_____	_____

U5425.0 MAINTAIN TRANSMISSION TOWERS AND STRUCTURES

GENERAL PERFORMANCE OBJECTIVE

Maintain transmission towers and structures by: conducting visual inspections to identify defects and deteriorated or broken attachments; and, servicing or replacing defective equipment.

PERFORMANCE OBJECTIVES

SKILLS

5425.01 **Conduct visual inspections on transmission towers and structures** to identify defects and deteriorated or broken attachments including broken insulators, bent steel, inadequate or sub-standard grounding, guy wires, anchor points, structural bolts and hardware, defective conductors, and connector clamps so that the poles and timbers are checked and assessed in accordance with company policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

5425.02 **Service transmission towers and structures** by: accessing the work at an elevated height using appropriate fall protection equipment; installing, removing or replacing defective equipment including insulators, timbers and hardware; clamping and unclamping conductors; relocating conductor to an alternate position; repairing conductors or connectors; and, using required tools, materials, and equipment; ensuring that the maintenance work is completed in accordance with company directives, policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
_____	_____	_____

Employer/Sponsor Name	Employer/Sponsor Signature
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U5426.0 INSTALL AND MAINTAIN OVERHEAD POWER SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Install and maintain overhead power systems by: installing and removing conductors and insulators; splicing or repairing overhead conductors; installing accessories on conductors; installing, maintaining or removing switching devices; installing and removing service/secondary conductors; inspecting overhead power systems; upgrading overhead power system structures; installing and attaching anchoring and guying systems; and, installing, troubleshooting and maintaining streetlight systems.

PERFORMANCE OBJECTIVES

SKILLS

5426.01 **Install and remove conductors and insulators** by: following required procedures; using conventional and tension stringing methods, equipment, hardware, and tools; identifying and applying equipotential grounding or bonding techniques to tie in, clamp in, remove, or relocate conductors; and, applying rigging techniques during sagging, relocating, or removing conductors; in accordance with Safety Legislation, AHJ, manufacturers' instructions and recommendations, company directives, policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5426.02 **Splice or repair overhead conductors** by: applying live line work methods; isolating and applying grounding and bonding techniques to de-energize the conductor; using required tools, equipment, hardware and barriers specific to the selected methods during the repair, so that overhead conductors are spliced or repaired; in accordance with Safety Legislation, manufacturers' instructions, recommendations and specifications, company directives, policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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U5426.0 INSTALL AND MAINTAIN OVERHEAD POWER SYSTEMS - Cont'd

5426.03 **Install accessories on conductors** including spacers, vibration dampers, conductor measurement equipment and aircraft markers using required methods of installation and appropriate hardware, tools and equipment, so that installation is completed in accordance with manufacturers' instructions, recommendations and specifications; company directives, policies and procedures; and, approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5426.04 **Install, maintain or remove switching devices** including gang operated, loadbreak and non-loadbreak, high voltage, air break, gas filled, oil filled, in- line switches, line openers, and mid span opener devices by applying live line or de-energized techniques and using appropriate hardware, tools and equipment, so that the installation, maintenance or removal is completed in accordance with manufacturers' instructions, recommendations and specifications; company directives, policies and procedures; and, approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5426.05 **Install and remove service/secondary conductors** including spun buss, open wire, triplex, and quadraplex using appropriate tools, equipment and hardware in a live line environment so that installation and removal is completed in accordance with manufacturers' instructions, recommendations and specifications; municipal guidelines; company directives, policies and procedures; and, approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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U5426.0 INSTALL AND MAINTAIN OVERHEAD POWER SYSTEMS - Cont'd

5426.06 **Inspect overhead power systems** by: performing a visual check of poles, vegetation growth, debris, connectors, insulators, conductors, switches, transformers, and associated hardware; identifying, assessing, and reporting problem areas including damaged poles, leaking transformers, defective insulators, sub-standard framing, damaged conductors, inoperable switching devices, and defective lightning arresters, so that corrective actions may be determined in accordance with manufacturers' recommendations and specifications; company policies and procedures; and, approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5426.07 **Upgrade overhead power system structures** by re-framing or re-configuring system components including poles, conductors, crossarms, insulators, and associated hardware using the selected work methods suitable for the application, in accordance with manufacturers' recommendations; company design standards, policies and procedures; and, approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5426.08 **Install and attach anchoring and guying systems** including span, down, strut, arm, storm guying systems, power installed screw anchor, slug, swamp, expansion, rock anchors, and associated hardware by: selecting the appropriate tools and equipment for installation including radial boom derrick, and backhoe; using a dynamometer for load testing the anchor points; and, using hoisting devices for tensioning the guying system, so that anchoring systems are installed in accordance with design specifications; manufacturers' instructions, recommendations and specifications; company policies and procedures; and, approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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U5426.0 INSTALL AND MAINTAIN OVERHEAD POWER SYSTEMS - Cont'd

5426.09 **Install, troubleshoot and maintain streetlight systems** by: using information, tools and equipment including schematics, wiring diagrams and test meters; positioning new components; connecting to the power supply either through an individual photo voltaic control system or a pilot wire system; visually inspecting during troubleshooting; determining malfunctions by testing components including power supply, relays, bulbs, fuses, starters and ballasts; and, maintaining by replacing defective items, cleaning glass globe, removing and/or eliminating debris buildup in streetlight head; so that streetlight systems are in full operation, in accordance with design specifications; municipal guidelines; manufacturers' instructions, recommendations and specifications; CESC guidelines; CSA standards; company policies and procedures; and, approved safe work practices.

Date Completed

Trainer Signature

Apprentice Signature

Employer/Sponsor Name

Employer/Sponsor Signature

U5427.0 TROUBLESHOOT OVERHEAD AND UNDERGROUND POWER SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Troubleshoot overhead and underground power systems by: assessing and determining system problems; diagnosing problems of single and three phase transformers; diagnosing problems in the power distribution station; and, isolating and restoring power to a problem or affected area.

PERFORMANCE OBJECTIVES

SKILLS

5427.01 **Assess and determine overhead and underground power system problems** by: visually inspecting; verifying the condition of apparatus using metering devices including electronic display ammeters/voltmeters, potential indicators and phasing testers, feeder prints, and fault indicators; and, referencing trouble reports, operator and customer data, and other external sources; so that corrective actions may be determined in accordance with design specifications; manufacturers' instructions, recommendations and specifications; company policies, procedures and guidelines; and, accepted safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5427.02 **Diagnose problems of single and three phase transformers** by: using required tools and equipment to check for voltage irregularities, abnormal current levels, transformer failure; and, verifying the condition of switches, loose or corroded connections, defective surge arresters, current limiting devices, bushings, substandard grounding, and oil leaks; so that problems are identified in accordance with company design standards; manufacturers' specifications and recommendations; CESC specifications; company policies and procedures; and, approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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U5427.0 TROUBLESHOOT OVERHEAD AND UNDERGROUND POWER SYSTEMS - Cont'd

5427.03 **Diagnose problems in the power distribution station** by: verifying the condition of fuses, taps, reclosers, metering devices, station service equipment, grounding devices, power system quality improvement devices, switches, buss connections, fault indicators, cable termination points, security and fire systems, Supervisory Controlled And Data Acquisition (SCADA) equipment, and other apparatus within the confines of the distribution station; so that problems or defects are identified in accordance with company design standards; manufacturers' specifications and recommendations; company policies and procedures; and, approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5427.04 **Isolate and restore power to a problem or affected area** by: checking for breakdowns caused by material failure, tree growth, debris, animals, climatic abnormalities, vehicular accidents, and any other interference; paralleling feeders and/or sectionalizing; operating switches, openers, and opening devices/connections; pruning or removing debris; making temporary repairs in coordination with and through the direction of the controlling authority; or, performing a self administered sequence of operations either by remote operation (SCADA) or local operation in accordance with operating diagrams, feeder prints, switching orders, company policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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Employer/Sponsor Name	Employer/Sponsor Signature
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U5428.0 INSTALL AND MAINTAIN UNDERGROUND DISTRIBUTION SYSTEMS

GENERAL PERFORMANCE OBJECTIVE

Install and maintain underground distribution systems by: inspecting trench condition and installing foundations; installing underground cables; installing and removing underground primary and secondary junction boxes and switching cubicles; terminating and splicing primary and secondary underground cables; testing cables and connections; performing switching, isolating, and grounding operations of underground equipment; and performing maintenance operations in an underground power system.

PERFORMANCE OBJECTIVES

SKILLS

5428.01 **Install concrete or fiberglass foundations** for equipment including switching kiosks, padmount transformers and submersible vaults by: locating designated area, depth or elevation of duct work; inspecting trench condition; identifying the prescribed corridor; checking for non-interference with other utility components; and, removing debris; so that installation is completed in accordance with design specifications, lot plans, survey information, municipal codes, manufacturers' recommendations, company policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5428.02 **Install underground cables** by: using appropriate work methods and cable pulling equipment; correctly identifying cables by meggering or ringing them out; identifying cables with labeling equipment; and, terminating the cables to their designated location; so that cables are installed in accordance with design specifications, lot plans, survey information, municipal codes, manufacturers' recommendations, company policies and procedures, and approved safe work practices

Date Completed	Trainer Signature	Apprentice Signature
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U5428.0 INSTALL AND MAINTAIN UNDERGROUND DISTRIBUTION SYSTEMS - Cont'd

5428.03 **Install and remove underground primary and secondary junction boxes and switching cubicles** including submersibles and padmount equipment and secondary service pedestals by: using manual or mechanical rigging and hoisting equipment; placing the equipment on the foundation; and, securing or bolting down equipment for public safety; in accordance with design specifications, lot plans, survey information, municipal codes, government regulations, manufacturers' recommendations, company policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5428.04 **Terminate and splice primary and secondary underground cables** by: identifying, isolating, and de-energizing the cable; using identification equipment, spiking equipment, and grounding devices; and, using applicable techniques and procedures, and required components including tapes, elbow terminators, modular terminators, heat shrink, cold shrink type terminators, potheads, taped or premoulded stress cones, conductor sleeves, and concentric neutral sleeves; so that termination and splicing is complete in accordance with design specifications, lot plans, survey information, municipal codes, government regulations, manufacturers' recommendations, company policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5428.05 **Test cables and connections** by: checking for current and voltage stresses, prior to commissioning into service and in service; using methods and equipment including Time Domain Reflectometry (TDR), insulation megger, cable thumper, cable fault locator, and infra red heat sensing equipment, in order to detect variations in uniformity or weaknesses and to ensure that the system is operating in accordance with design specifications, municipal codes, manufacturers' recommendations, company policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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U5428.0 INSTALL AND MAINTAIN UNDERGROUND DISTRIBUTION SYSTEMS - Cont'd

5428.06 **Perform switching, isolating, and grounding operations of underground equipment** by: identifying the selected location for operation; using utility maps, SCADA systems, and operating diagrams; taking direction from the controlling authority; isolating the equipment; and, using tools and equipment including live line sticks, rubber gloves, potential indicator, and approved grounding; so that underground equipment is de-energized in accordance with design specifications, lot plans, survey information, municipal codes, government regulations, manufacturers' recommendations, company policies and procedures, and approved safe work practices.

Date Completed	Trainer Signature	Apprentice Signature
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5428.07 **Perform maintenance operations in an underground power system** by: visually checking for tracking and loose connections; cleaning, repairing, lubricating, tightening, and re-aligning components; checking components including ground connections, elbow terminator pins, bushing inserts, standoff brackets, feed thru inserts, dry well, or submersed bayonet fuses; and, removing debris or vegetation around the perimeter to allow accessibility to perform work; in order to provide security from public access into energized components and that the underground power system is maintained and secure; in accordance with design specifications, lot plans, survey information, municipal codes, government regulations, manufacturers' recommendations, company policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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Employer/Sponsor Name	Employer/Sponsor Signature
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U5429.0 INSTALL, MAINTAIN AND REMOVE TRANSFORMERS

GENERAL PERFORMANCE OBJECTIVE

Install, maintain and remove transformers by: identifying and selecting the appropriate transformer for installation; installing and energizing pole mounted transformers; installing, connecting and energizing padmount transformers and other underground system transformers; performing maintenance operations on transformers; and, removing a transformer.

PERFORMANCE OBJECTIVES

SKILLS

5429.01 **Identify and select the appropriate transformer for installation** by verifying the kVA sizing requirements, primary system voltage availability, secondary voltage requirements, single or three phase installation, transformer impedance relationship, delta or wye system configurations, overhead or underground installation, and physical size restrictions based on site requirements, in accordance with design specifications, customer requirements, manufacturers' specifications and instructions, CEC, company policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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5429.02 **Install and energize pole mounted transformers** by: drilling holes or hanging the transformer brackets; hoisting and hanging the transformer using mechanical material handling aerial device or RBD or transformer pole gin and rope blocks; attaching equipment to the pole; installing switch bracket, switch, lightning arrester, and equipment grounding; ensuring resistivity of grounding network meets standards criteria; installing the conductor stirrup; attaching primary drop leads; connecting secondary terminations; energizing the transformer; and, performing in service operational checks; so that the transformer is installed in accordance with manufacturers' recommendations, customer requirements, company design standards, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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U5429.0 INSTALL, MAINTAIN AND REMOVE TRANSFORMERS - Cont'd

5429.03 **Install, connect and energize padmount transformers and other underground system transformers** by: using hoisting and rigging equipment; connecting secondary leads; terminating primary connections on either live front or elbow connected equipment; installing required sacrificial anodes; installing equipment grounding; ensuring resistivity of grounding network meets standards; energizing the transformer; performing operational voltage checks; and, ensuring transformer is secure from public intrusion; so that the installation is in accordance with government and municipal regulations, manufacturers' recommendations, company design standards, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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5429.04 **Perform maintenance operations on transformers** by: isolating the transformer; testing resistivity of grounding network; visually checking for substandard or deteriorated connections and repair; checking for oil leaks due to broken bushings and gaskets; evaluating oil for Poly Chlorinated Biphenyls (PCB's), contaminants, and moisture content; and, replacing and replenishing oil; so that transformers are maintained in accordance with design specifications, customer requirements, CESC, EPA, manufacturers' specifications and instructions, company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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5429.05 **Remove a transformer** by: first isolating and disconnecting from both primary and secondary sources of electrical energy; secondly hoisting, lowering and securing onto a transportation vehicle; and, using equipment including RBD or bucket truck; in accordance with, CSA, design specifications, manufacturers' specifications and instructions, customer requirements, company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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Employer/Sponsor Name	Employer/Sponsor Signature
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**U5430.0 INSTALL, OPERATE AND MAINTAIN SYSTEM PROTECTION,
CONTROL AND INSTRUMENTATION EQUIPMENT**

GENERAL PERFORMANCE OBJECTIVE

Install, operate and maintain system protection, control and instrumentation equipment by: maintaining power interrupting devices; ensuring system power quality improvement; maintaining metering transformers, metering devices and associated components; and, conducting current, voltage and phase rotation checks.

PERFORMANCE OBJECTIVES

SKILLS

5430.01 **Install, operate and/or remove power interrupting devices** including reclosers, lightning arrestors, sectionalizers, fused and non-fused switching devices, current limiting devices and gang operated motor drive or non-motor drive switchgear by: recognizing the operating characteristics and associated hazards; performing functional operations on the specific equipment; performing an isolation and/or energizing sequence; using protective devices such as rubber gloves and a ground gradient control mat; and, checking for defects associated with the characteristics of the equipment; to ensure effective power system protection; in compliance with manufacturers' specifications, instructions and maintenance procedures, company directives, policies and procedures, and Safety Legislation.

Date Completed

Trainer Signature

Apprentice Signature

5430.02 **Ensure system power quality improvement** by: installing, operating and removing voltage regulators and capacitors; recognizing the operating characteristics and associated hazards of equipment; performing functional operation on the specific equipment; performing an isolation and/or energizing sequence; and, checking for defects associated with the characteristics of the equipment; to ensure system power quality improvement in compliance with CESC, manufacturers' specifications, instructions and maintenance procedures, company directives, policies and procedures, and Safety Legislation.

Date Completed

Trainer Signature

Apprentice Signature

**U5430.0 INSTALL, OPERATE AND MAINTAIN SYSTEM PROTECTION,
CONTROL AND INSTRUMENTATION EQUIPMENT - Cont'd**

5430.03 **Maintain metering transformers, metering devices and associated components** including potential transformers, current transformers, primary voltage metering devices, self contained instrument meters, A-base and S-base single and three phase central metering installations by carrying out pre installation checks, wiring or disconnecting; verifying, installing, removing and replacing equipment; and performing in-service checks of the equipment in compliance with Industry Canada, CEC, CSA, TSSA, manufacturers' specifications and instructions, company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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5430.04 **Conduct current, voltage and phase rotation checks** using equipment including digital or analog recording or instantaneous read-out amperage, voltage, and phase checking devices, by demonstrating the correct method of application for data acquisition, so that check is completed in accordance with CEC, manufacturers' specifications and instructions, company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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Employer/Sponsor Name	Employer/Sponsor Signature
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U5431.0 HANDLE ENERGIZED CONDUCTORS USING RUBBER PROTECTIVE EQUIPMENT

GENERAL PERFORMANCE OBJECTIVE

Handle energized conductors using rubber protective equipment by: using rubber protective equipment and barriers; installing or removing rubber protective equipment on energized apparatus; relocating energized conductors; maintaining live line devices; and, installing and removing energized conductor items.

PERFORMANCE OBJECTIVES

SKILLS

5431.01 **Use rubber protective equipment and barriers** including rubber gloves, blankets, hose, hoods and fibreglass auxiliary equipment by checking appropriate voltage being worked upon prior to use; selecting, testing, inspecting and maintaining equipment; identifying the electrical test expiry dates; carrying out prescribed field tests; and, checking that the storage facility is free of contaminants including moisture, ultra-violet light, corona exposure, and dirt; in accordance with industry standards, CSA, ANSI, ULC, IEEE, ASTM standards, government regulations, manufacturers' specifications and instructions, company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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5431.02 **Install or remove rubber protective equipment on energized apparatus** by: using personal protective devices; selecting and applying rubber coverup, equipment and barriers applicable to the system voltage including line hose, insulator hoods, blankets, insulated pole platforms, auxiliary arm and mast assemblies, conductor support devices and other related apparatus on energized equipment; eliminating any hazards associated with the second point of contact; in accordance with the standards of CSA, ANSI, IEEE, ASTM, ULC, Safety Legislation, manufacturers' specifications and instructions, company directives, policies and procedures and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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U5431.0 HANDLE ENERGIZED CONDUCTORS USING RUBBER PROTECTIVE EQUIPMENT - Cont'd

5431.03 **Relocate energized conductors** by: using rubber glove methods; applying barrier principles; demonstrating the correct use of personal protective devices and equipment; tying/untying and clamping/unclamping energized conductors; and, performing specific tasks on energized conductors so that they are handled in compliance with company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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5431.04 **Maintain live line devices** including connectors, insulated and non-insulated jumpers, conductor sleeves, armor rods, repair rods, and associated items on energized apparatus by: using rubber glove techniques; applying barrier principles; installing, removing, repairing/replacing and operating live line devices; demonstrating the correct use of personal protective devices; and, performing specific tasks, in accordance with the standards of CSA, ANSI, IEEE, ASTM, ULC, company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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5431.05 **Install and remove energized conductor items** including openers, dead end insulators, and fused and solid blade switches by: using rubber glove techniques; applying barrier principles; demonstrating the correct use of personal protective devices, tools, and equipment; and, applying the correct job sequence; in accordance with the standards of CSA, ANSI, ULC, IEEE, and ASTM, company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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Employer/Sponsor Name	Employer/Sponsor Signature
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U5432.0 HANDLE ENERGIZED CONDUCTORS USING LIVE LINE TOOL METHOD

GENERAL PERFORMANCE OBJECTIVE

Handle energized conductors using live line tool method by: maintaining live line tools and equipment; installing protective barriers; changing insulators and relocating conductors; and, maintaining live line components.

PERFORMANCE OBJECTIVES

SKILLS

5432.01 **Maintain live line tools and equipment** including tie sticks, lever lifts, cutters, link sticks, saddles, wire tongs and jib-equipped aerial devices by: identifying correct equipment to perform task; visually inspecting for defects and deficiencies including cracks, stress markings, missing or broken parts; checking electrical test expiry dates; maintaining cleanliness by wiping down with cleaner; and, ensuring that storage facility is free of contaminants, moisture, ultra-violet exposure, and dirt; in compliance with the CSA, ANSI, IEEE, ASTM and ULC, government regulations, manufacturers' specifications and instructions, company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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5432.02 **Install protective barriers** including hard fibre cover up, cross arm guards, pole guards, and suitcase type insulator cover up by using the required equipment and tools including aerial devices, work platforms, and ratchet type gripall sticks, so that barriers are installed in accordance with manufacturers' specifications and instructions, company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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U5432.0 HANDLE ENERGIZED CONDUCTORS USING LIVE LINE TOOL METHOD - Cont'd

5432.03 **Change insulators and relocate conductors** using live line tools by: unclamping, untying, relocating, clamping, replacing insulators; and, tying in conductors; using required equipment including tie sticks, lever lifts, cutters, link sticks, saddles, wire tongs, jib-equipped aerial devices and other related tools; in accordance with manufacturers' recommendations, company design standards, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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5432.04 **Maintain live line components** including connectors, taps, pig tail clamps, insulated and non-insulated jumpers, switches, and fuse barrels by: removing foreign debris such as kites and tree branches; using equipment including gripall sticks, all angle wrench sticks, wire holders, tie sticks, live line cutters, live line ratchet cutters, P2 sticks, loadbuster tools, telescopic sticks, and live line hoists; and, installing, removing and/or operating live line components; in accordance with manufacturers' specifications and instructions, company directives, policies and procedures, and Safety Legislation.

Date Completed	Trainer Signature	Apprentice Signature
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Employer/Sponsor Name	Employer/Sponsor Signature
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U5433.0 SELECT, MAINTAIN AND OPERATE RIGGING AND HOISTING EQUIPMENT

GENERAL PERFORMANCE OBJECTIVE

Select, maintain and operate rigging and hoisting equipment by: selecting required rigging and hoisting equipment; inspecting and maintaining hoisting and rigging equipment; and, performing the lifting or moving operation.

PERFORMANCE OBJECTIVES

SKILLS

5433.01 **Select required rigging and hoisting equipment** including power or hydraulic winches, hoists, blocks, ropes, shackles, chains, snatch blocks, slings, transformer davits, dynamometers, mobile hydraulic equipment, RBDs, and overhead cranes by: performing calculations of weights to be lifted; determining tensions to be applied; ensuring accessibility and positioning of equipment prior to movement; and, referencing load charts; so that equipment selected is the correct for the application, in compliance with the CSA and Safety Legislation standards, government regulations, manufacturers' specifications and instructions, company directives, policies and procedures, and Safety Legislation.

Date Completed

Trainer Signature

Apprentice Signature

5433.02 **Maintain hoisting and rigging equipment** by: carrying out regularly scheduled and pre-operational visual inspections to identify load bearing status, structural defects, deficiencies, stress cracks or fractures, and misalignment of parts; cleaning; lubricating; adjusting; repairing; load testing; documenting in unit log book; and, storing in an appropriate location; so that hoisting and rigging equipment is maintained in an operational state, in compliance with CSA, government regulations, manufacturers' specifications and instructions, company directives, policies and procedures, and Safety Legislation.

Date Completed

Trainer Signature

Apprentice Signature

U5433.0 SELECT, MAINTAIN AND OPERATE RIGGING AND HOISTING EQUIPMENT - Cont'd

5433.03 **Perform the lift or move** by: using required rigging and hoisting equipment; moving; raising; relocating; lowering; tensioning; releasing; holding; attaching; and, connecting the selected load; so that load is secured, lifted, and moved, in accordance with HTA, government regulations, manufacturers' instructions and recommendations, company policies and procedures, and Safety Legislation.

Date Completed

Trainer Signature

Apprentice Signature

Employer/Sponsor Name

Employer/Sponsor Signature
