Training Program:

Utility Substation Maintenance

Introduction:

This five-day program is designed for power electricians responsible for Utility company electrical systems. The successful student will gain a solid understanding of HV equipment and systems with skills that can be immediately implemented upon course completion. Dynamic and highly concentrated, this course places maximum emphasis on preventive maintenance and troubleshooting skills.

Who Should Attend?

Supervisors, Engineers, Electricians, Operators & Field Service Representatives.

Course Objectives:

After attending the training you will be able to:

Comply with provincial regulations, identify and mitigate job related hazards, safely operate and maintain your electrical equipment, recognize deficiencies and take corrective action and avoid the chance of an accident and/or injuries

Course Outline

Objective: Describe the properties of good insulation

- Insulation characteristics and stresses
- Insulation testing
- Maintenance of electrical insulation

2. CABLES

Objective: Describe the design of high voltage cables

- Design and types
- Cable insulation
- Splicing and Terminations
- Testing

3. SWITCHGEAR

Objective: Identify various types of switchgear

- Types
- Operation
- Testing and Troubleshooting
- Preventive Maintenance

4. DISCONNECTS

Objective: Describe the function of disconnects

- Application
- Types
- Operation
- Testing and Troubleshooting

- Preventive Maintenance

5. POWER TRANSFORMERS

Objective: Describe the function and operation of transformers

- Application
- Types
- Operation
- Testing and Troubleshooting
- Corrective Maintenance
- Preventive Maintenance

6. INSTRUMENT TRANSFORMERS

Objective: Describe VT operation and application

- Voltage Transformers
- Current Transformers

7. FUSES

Objective: Explain the function of fuses

- Application
- Types

- Selection
- Testing

8. BREAKERS

Objective: Describe circuit breaker operation

- Application
- Types
- Operation
- Testing and Troubleshooting
- Preventive Maintenance

9. RELAYS

Objective: Define the principles and operation of protective relays

- Application
- Types
- Operation
- Testing and Troubleshooting
- Preventive Maintenance

10. STARTERS

Objective: Explain the operation of high voltage starters

- Application
- Types
- Operation
- Testing and Troubleshooting
- Preventive Maintenance

11. MOTORS

Objective: Explain the operation of high voltage motors

- Application
- Types
- Operation
- Testing and Troubleshooting
- Preventive Maintenance

12. GENERATORS

Objective: Explain the operation of high voltage generators

- Application
- Types

- Operation
- Testing and Troubleshooting
- Preventive Maintenance

13. GROUNDING

Objective: Describe the principles and methods of grounding for stations, substations, equipment and lightning protection

- Application
- Methods
- Ground Grid Resistivity
- Ground Resistance Testing
- Maintenance
- Safety Grounding

14. SYSTEM SAFETY

Objective: Describe shock, blast and arc hazards

- Work clearance
- Isolation and permits
- Interlocks (ie: Kirk Key)
- High voltage protective gear

- Testing and grounding
- Limits of approach
- Electrical rescue

15. SWITCHING

Objective: Explain the use of single line diagrams for safety and switching

- Work clearance
- Isolation and permits
- Switching procedures
- Interlocks (ie: Kirk Key)
- Testing and grounding
- High voltage protective gear
- Limits of approach
- Electrical rescue

Accreditation:

BTS attendance certificate will be issued to all attendees completing a minimum of 80% of the total course duration.