€TRAINING

Circuit Breaker and Switchgear Safety

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Introduction:

This training program provides comprehensive instruction on the proper handling, maintenance, and safety protocols associated with circuit breakers and switchgears. It equips individuals with the knowledge and practices necessary to mitigate risks and maintain a secure working environment in facilities where circuit breakers and switchgears are utilized.

Program Objectives:

At the end of this program, participants will be able to:

- Understand the operational characteristics of circuit breakers and switchgear.
- Understand the troubleshooting procedures, as applied to circuit breakers and associated switchgear.
- Improve the capability in the use of test equipment.
- Understand the failure modes and failure analysis as applied to fuses, circuit breakers, and switchgear. Concerning air brake, vacuum, and SF6 devices..
- Gain refreshed awareness of electrical safety concerns within substations and control centers
- Determine fault levels in substations.

Targeted Audience:

- Electricians.
- Electrical supervisors.
- Plant electricians.
- Operations & maintenance engineers, supervisors & technicians.
- Maintenance technicians.

Program Outlines:

Unit 1:

Fundamentals of Circuit Breakers and Switchgears:

- Understanding the purpose and function of circuit breakers and switchgears.

- Identifying different types of circuit breakers and switchgears.
- Explaining the principles of operation for circuit breakers and switchgears.
- Describing the components and construction of circuit breakers and switchgears.
- Recognizing the importance of proper maintenance and safety procedures.

Unit 2:

Safety Procedures for Circuit Breakers and Switchgears:

- Following safety protocols when operating circuit breakers and switchgears.
- Understanding electrical hazards associated with circuit breakers and switchgears.
- Implementing proper lockout/tagout procedures for maintenance activities.
- Conducting risk assessments and hazard identification before working with circuit breakers and switchgears.
- Ensuring personal protective equipment PPE is worn and maintained correctly.

Unit 3:

Operation and Maintenance Practices:

- Operating circuit breakers and switchgears according to manufacturer guidelines.
- Conducting routine inspections and tests to identify potential issues.
- Performing lubrication, cleaning, and adjustment tasks as part of preventive maintenance.
- Troubleshooting common problems and taking corrective actions.
- Documenting maintenance activities and keeping accurate records.

Unit 4:

Emergency Response and Incident Management:

- Developing emergency response plans for circuit breaker and switchgear failures.
- Training personnel on emergency shutdown procedures and evacuation routes.
- Establishing communication protocols during emergency situations.
- Conducting drills and exercises to test emergency preparedness.

- Reviewing and analyzing incidents to identify areas for improvement.

Unit 5:

Regulatory Compliance and Standards:

- Understanding relevant regulations and standards governing circuit breakers and switchgears.
- Ensuring compliance with electrical safety codes and guidelines.
- Keeping abreast of updates and revisions to regulations and standards.
- Collaborating with regulatory agencies and industry organizations to stay informed.
- Incorporating best practices and industry recommendations into operation and maintenance procedures.