72 to 242kV Circuit Breakers General Operation and Maintenance Training

Level 3 Field Service Engineer Training

DTB TRAINING CENTER GREENSBURG, PA– COURSE DESCRIPTION

Hitachi Energy is pleased to offer the following three (3) day training course consisting of classroom and hands-on instruction in Hitachi Energy's Greensburg, PA facility. The course is aimed to provide a general understanding of operations and maintenance of 72 to 242 kV power circuit breakers. During the classroom portion, experienced instructors will share their knowledge and expertise through interactive, engaging classroom instruction. To add further understanding, each main category of instruction will be followed by hands-on activity where students can interact with the breaker first-hand.

PREPARED BY	STATUS	SECURITY LEVEL		
Randy Opsitnick	Approved	Internal		
APPROVED BY	APPROVAL DATE			
Marcio Schmitt	2023-03-14			
OWNER	DOCUMENT KIND			
Head of Training Function	Agenda			
TITLE				
DTB-L3-72&145&242 PM_PMG_PMR_PMI_PM B_PM C-Training Agenda				
OWNING ORGANIZATION	DOCUMENT ID	REV.	LANG.	PAGE
US-Mount Pleasant-2657-Field Service	2GHE001618	A	en	1/4

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Who would benefit:

- Direct maintenance personnel
- Substation maintenance engineers
- Engineering managers
- Substation supervisors
- Asset Managers
- Training Coordinators or Managers

Included:

- 72 to 242 kV Circuit Breaker Information manuals
- 3 continental breakfasts
- 3 lunches
- 1 group dinner
- certificate of completion

Certification:

A confirmation will be issued after successful participation in this course, as part of the certification process.

Within a 12 months period, an on-site assessment must be carried out along with a final review to complete certification.

Duration:

3 days

Enrolments:

Send your request to

us-dtb_training@hitachienergy.com

Prerequisites:

- Must have L2 training on DTB
- Ability to read and speak English and understand wiring diagrams and drawings
- On-site experience on DTB Installation and/or Commissioning
- Attended the local required Health & Safety Training
- First aid course with certificate
- Own PPE
- Computer with admin rights

Day	Subject
1	**Introduction to Breaker Fundamentals** ❖ Breaker safety ❖ Switching ❖ Grounding ❖ Pole assembly ❖ Removal of bushings ❖ Bushing lifting points ❖ Through-rod connection ❖ Maintenance procedures /schedules ❖ 72 to 242 kV Interrupter Theory and maintenance/Interrupter Removal ❖ Interrupter overview ❖ Contact inspection ❖ Interrupter installation
2	**Operating Mechanism (FSA, HMB, BLK & MSD)** ❖ Principles of operation ❖ Spring Mechanism ❖ Hydraulic mechanism ❖ Maintenance procedures / schedules ❖ Charging system ❖ Trip / close coils ❖ Trip / close latches ❖ Auxiliary switches ❖ Duty cycle ❖ Troubleshooting ❖ Spare parts

Day	Subject
3	**Installation and Commissioning** ❖ Lifting the Breaker ❖ Mounting to foundation ❖ Electrical controls & alarms /lockouts ❖ Breaker timing ❖ Leak detection ❖ Moisture analysis ❖ CT ratio and polarity ❖ Contact resistance **SF6 Handling Procedures** ❖ Gas filling and vacuum procedures ❖ SF6 by-products

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