COURSE OVERVIEW EE0456
11KV Breaker ABB Type VD4 Maintenance & Troubleshooting

Course Title
11KV Breaker ABB Type VD4 Maintenance & Troubleshooting

Course Date/Venue
August 24-28, 2025/Boardroom 2, Elite Byblos Hotel, Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
EE0456

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

This course is designed to provide participants with a detailed and up-to-date overview of 11KV Breaker ABB Type VD4 Maintenance and Troubleshooting. It covers the types, use, features, advantages and applications of ABB type VD4 11KV breaker; the working principle and components of ABB VD4 breaker and how the breaker operates under normal conditions; the safety precautions when working with an 11KV breaker; the right tools and equipment for maintenance; and the basic installation of breaker including lubrication, cleaning, adjustments and troubleshooting.

During this interactive course, participants will learn the spring charging motor and adjusting tripping devices for optimal performance; the procedure for replacement, maintaining and replacing vacuum interrupter and developing and executing preventive maintenance schedules; the proper troubleshooting, interpreting fault indications and resolving mechanical and electrical issues in the breaker; the quality check and procedures to ensure the breaker is in optional condition; documenting the maintenance and troubleshooting process; and the breaker maintenance and troubleshooting best practices.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a comprehensive knowledge on 11KV breaker ABB type VD4 maintenance and troubleshooting
- Discuss the types, use, features, advantages and applications of ABB type VD4 11KV breaker
- Recognize the working principle and components of ABB VD4 breaker and discuss how the breaker operates under normal conditions
- Apply safety precautions when working with an 11KV breaker and identify the right tools and equipment for maintenance
- Carryout basic installation of breaker including lubrication, cleaning, adjustments and troubleshooting
- Change spring charging motor and adjust tripping devices for optimal performance
- Apply procedure for replacement, maintain and replace vacuum interrupter and develop and execute preventive maintenance schedules
- Employ proper troubleshooting, interpret fault indications and resolve mechanical and electrical issues in the breaker
- Apply quality checks and procedures to ensure the breaker is in optional condition and document the maintenance and troubleshooting process
- Implement breaker maintenance and troubleshooting best practices

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of 11KV breaker ABB type VD4 maintenance and troubleshooting for all managers, electrical engineers, operations personnels, supervisors, maintenance technicians, and safety personnel.

Course Fee

US$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations:

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Dr. Mike Tay, PhD, MSc, BSc, is a **Senior Electrical**, **Instrumentation & Communications Engineer** with over **30 years** of extensive experience. His expertise widely covers **Power Management System** (PMS), Interruptible Power Systems (**UPS**), **Power System**, **Power Supply** Design Management, Power System Faults, Current & Voltage **Transformers**, Power System Neutral Grounding, **Protective Devices** Troubleshooting, **Protective Devices** Testing & Maintenance, **Uninterruptible Power Supply** (**UPS**) Design, Industrial **UPS Systems & Battery Power Supplies** Maintenance & Troubleshooting, **UPS & Battery** System, **Battery & Battery Charger & UPS** and Measurement Devices, UPS **System & Battery Chargers** Maintenance & Troubleshooting, **UPS & Battery** Design, Operation, Maintenance & Troubleshooting, UPS **Operation & Alarm Panel** Reading, **Process Control & Instrumentation**, **Process Control** Troubleshooting & Problem Solving, **Process Control System**, Advanced Process Control (**APC**) Technology, **Process Control & Loop Tuning**, **Process Control & Automation**, **Data Accuracy & System Function**, **Control System Interface**, **Artificial Intelligence** Application, **Data Analytics and its Importance**, **AI is Used in Exploration and Production**, **AI for Reservoir Management**, Distributed Control Systems (**DCS**), Programmable Logic Controller (**PLC**), Supervisory Control and Data Acquisition (**SCADA**), **Network** Comprehensive, Systems Analysis, **SCADA Security**, ESD System Function, Analysis & Control, Modern **Power Systems Protective Relaying**, **Custody Measurement & Loss Control**, **Fiber Optics** Access Network Planning, **Process Analyzer** & Analytical Instrumentation, **HV/MV Substation** Design & Maintenance, **Combined Cycle Power Generation**, **PLC & SCADA Automation**, Advanced **Online Analyzer**, **Protection Relay** Maintenance, Feeder Overcurrent Protection, **Electrical Protection Systems**, Bus Protection, Motor Protection, **Transformer Protection**, **Generator Protection**, Numerical Relays, **ESD System Analysis** & **Control**, **Custody Measurement**, Safety Instrumented System (**SIS**), Safety Integrity Level (**SIL**), **Diesel Generator**, **Electric Motors** and Basic **Electricity** & **Electrical Codes**. Further, he is also well-versed in **Communications**, **Telecommunications**, Mobile Protocols, 4G LTE, GSM/UMTS, CMDA2000, **WIMAX** Technology, HSPA+, **Alarm** Management System, **Computer Architecture**, Logic & Microprocessor Design, Embedded Systems Design plus **Computer Networking** with **CISCO**, **Network Communication**, **Industrial Digital Communication**, Designing **Telecommunications Distribution System**, Electrical Engineering, **WiMAX Broadband Wireless System**, TT Intranet & ADSL Network, TT Web & Voicemail, Off-site ATM Network, IT Maintenance, Say2000i, IP Phone, National Address & ID Automation, Electricity Distribution Network, Customs Network & Maintenance, **LAN** & **WAN Network**, UYAP Network, **Network Routing Protocols**, Multicast Protocols, Network Management Protocols, Mobile & Wireless Networks and Digital Signal Processing.

During his career life, Dr. Tay worked with various universities and institutions such as the KOC Sistem, Meteksan Sistem, Altek BT, Yasar University, Dokuz Eylul University and METU and occupied significant positions being the **Aegean Region Manager**, **Group Leader**, **Technical Services Manager**, **Field Engineer**, **Instrumentation & Control Engineer**, **Research Assistant**, **Instructor**, **Instrumentation & Control Instructor**, **Technical Advisor**, **Technical Consultant** and **Senior Instructor/Lecturer**.

Dr. Tay has **PhD**, **Master** and **Bachelor** degrees in **Electrical & Electronics Engineering** from the **Dokuz Eylul University** and the **Middle East Technical University** (**METU**) respectively. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**), a **Certified CISCO** (**CCSP**, **CCDA**, **CCNP**, **CCNA**, **CCNP**) **Specialist**, a **Certified CISCO IP Telephony Design Specialist**, **CISCO Rich Media Communications Specialist**, **CISCO Security Solutions** & **Design Specialist** and **Information Systems Security** (**INFOSEC**) **Professional**. He has further hold certification in Fundamentals of Process Control and Understanding Process Control: An Overview and delivered and presented innumerable trainings, courses, workshops, seminars and conferences worldwide.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: ***Sunday, 24th of August 2025***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0900	***Introduction to 11KV Breaker:*** *Definition, Types & Use Cases*
0900 - 0930	***Overview of ABB Type VD4 11KV Breaker:*** *Features, Advantages & Applications*
0930 – 0945	*Break*
0945 – 1100	***Working Principle of ABB VD4 Breaker:*** *Detailed Description of the Mechanism*
1100 – 1215	***Components of ABB VD4 Breaker:*** *Study of each Part & Its Function*
1215 – 1230	*Break*
1230 - 1300	***Understanding the Operating Mechanism:*** *Overview of How the Breaker Operates Under Normal Conditions*
1300 – 1420	***Safety Precautions:*** *Detailed Safety Instructions When Working with an 11KV Breaker*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Monday, 25th of August 2025***

0730 – 0830	***Tools & Equipment:*** *Identifying the Right Tools for Maintenance*
0830 – 0930	***Inspection of Breaker:*** *Visual & Manual Inspection Procedures*
0930 – 0945	*Break*
0945 – 1100	***Lubrication:*** *Procedure & Best Practices*
1100 – 1215	***Cleaning of Breaker Components:*** *How & When to Clean*
1215 – 1230	*Break*
1230 – 1320	***Adjustment of Contacts:*** *How to Adjust the Contact Pressure & Gap*
1320 – 1420	***Basic Troubleshooting:*** *Identifying & Resolving Simple Issues*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: Tuesday, 26th of August 2025

0730 – 0830	***Changing of Spring Charging Motor:*** *Step-by-Step Procedures*
0830 - 0930	***Adjustment of Tripping Devices:*** *How to Fine-Tune the Tripping Devices for Optimal Performance*
0930 – 0945	*Break*
0945 – 1100	***Replacement of Main Contacts:*** *Procedure for Replacement*
1100 – 1215	***Vacuum Interrupter:*** *Understanding, Maintenance & Replacement*
1215 – 1230	*Break*
1230 – 1400	***Testing of Breaker:*** *Different Types of Tests After Maintenance & their Procedures*
1400 - 1420	***Preventive Maintenance:*** *How to Develop & Execute Preventive Maintenance Schedules*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4: Wednesday, 27th of August 2025

0730 – 0830	***Troubleshooting:*** *Detailed Guide on Problem Identification & Resolution*
0830 - 0930	***Case Study:*** *Studying Past Breakdowns & the Actions Taken to Resolve Them*
0930 – 0945	*Break*
0945 – 1100	***Interpreting Fault Indications:*** *How to Read & Understand Fault Indications*
1100 – 1215	***Resolving Mechanical Issues:*** *Procedures for Resolving Mechanical Issues in the Breaker*
1215 – 1230	*Break*
1230 – 1400	***Resolving Electrical Issues:*** *Procedures for Resolving Electrical Issues in the Breaker*
1400 - 1420	***Emergency Measures:*** *What to Do in Emergency Situations*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5: Thursday, 28th of August 2025

0730 – 0830	***Quality Checks:*** *Procedures to Ensure the Breaker is in Optimal Condition*
0830 - 0930	***Documentation:*** *How to Document the Maintenance & Troubleshooting Process*
0930 – 0945	*Break*
0945 – 1100	***Maintenance Best Practices:*** *Recap of the Best Practices in Breaker Maintenance*
1100 – 1215	***Troubleshooting Best Practices:*** *Recap of the Best Practices in Breaker Troubleshooting*
1215 – 1230	*Break*
1230 - 1345	***Open Forum:*** *Discussion, Q&A, Sharing Experiences*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art simulators “GE Multilin Relay 469” , “GE Multilin Relay 750” and “Switchgear Simulator”.

GE Multilin Relay 469 Simulator

GE Multilin Relay 750 Simulator


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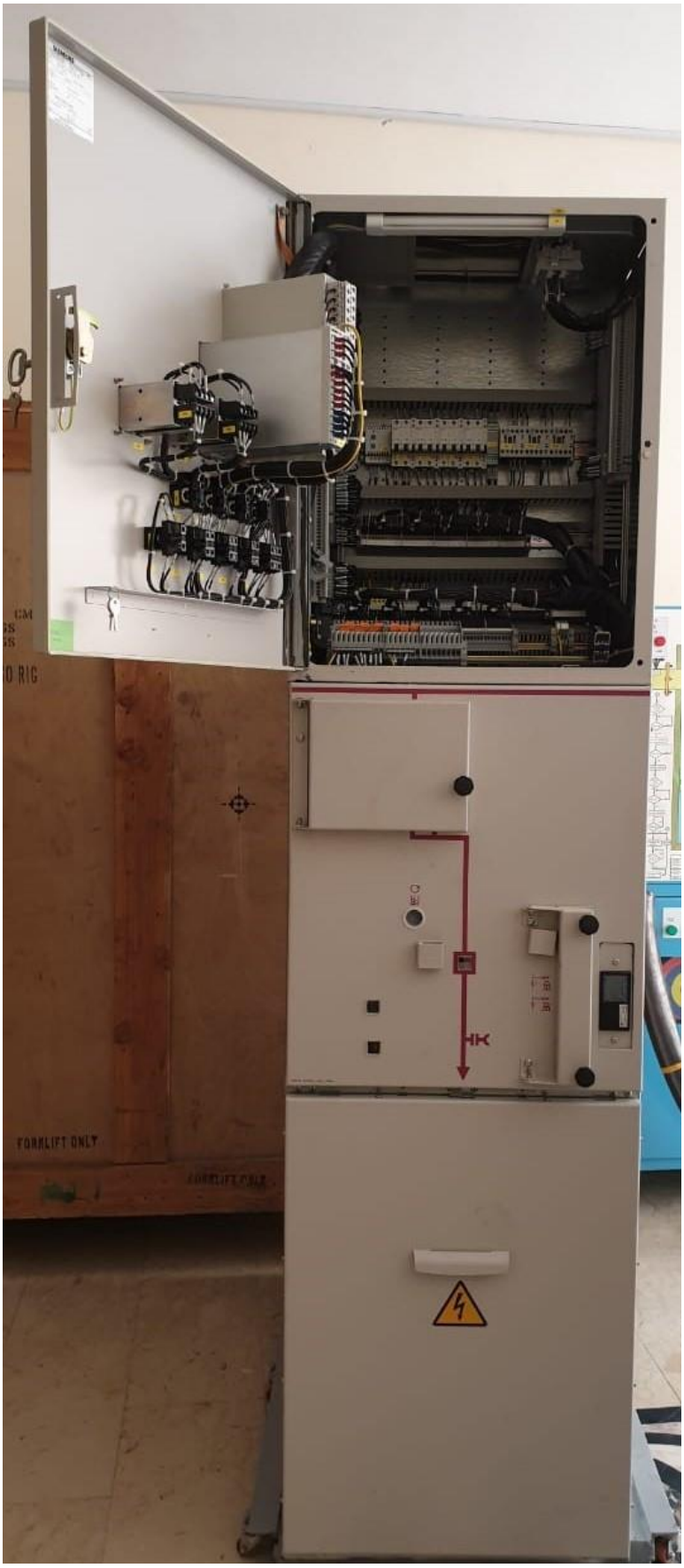
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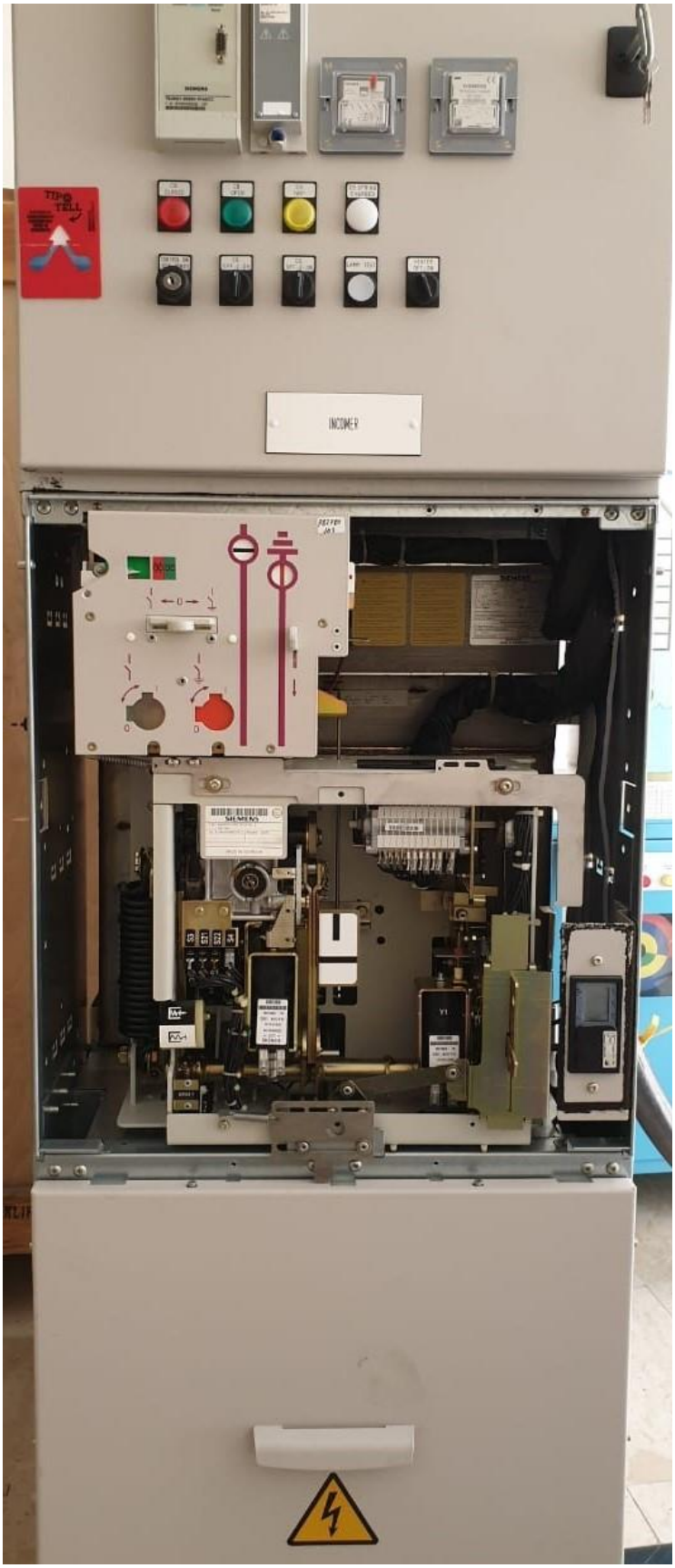
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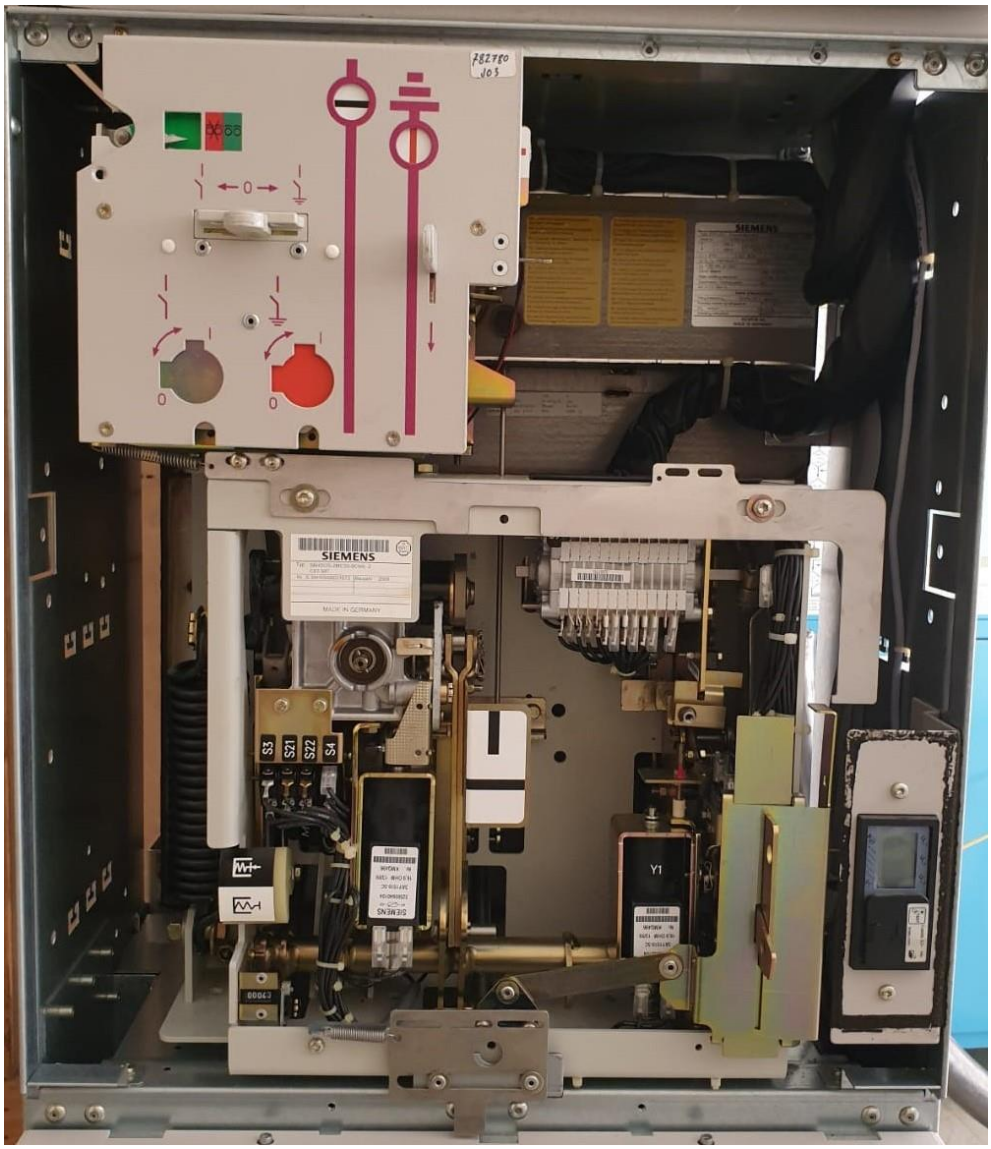

Course Coordinator
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