101896-ELE-24GPST-E-2003
Testing & Commissioning Team Leader

Holds a B. Sc. in Electrical Power & Machines Engineering and a post graduate Reading Diploma in Electrical Power Engineering. Has about 13 years hands-on experience in testing and commissioning different Electrical Systems in Power Plants and Substations Projects. Approved Project Coordinator by Saudi Electricity Company (SEC) for HV/EHV Substations. Projects experience in Egypt, KSA, Bahrain and Kuwait. PMP, RMP, CAPM Certification Holder.

PERSONAL DATA

Nationality	:	Egyptian
Birth Date	:	10/04/1980
Gender	:	Male
Marital Status	:	Married
Residence	:	Currently KSA

EDUCATION

: B. Sc. in Electrical Power & Machines Engineering, Tanta University, 2003

: Post graduate Reading Diploma in Electrical Power Engineering from Alexandria University with the following practical courses:

- Protective Earthing and Power Transformers.
- Industrial Power Electronics.
- Computer Aided Application (Matlab 6, 6.5 & 7, Ecodial).
- Synchronous Machines in both (Steady State & Transient) conditions.
- Automatic Control System.
- Power Quality Analyzer.
- Medium & Low Voltage Cables.
- Electrical Measurements.
- Digital Protection.
- International Electrical Standards.
- Power Factor Correction Project.

: High School: Fowwa Thanawia School for boys

LANGUAGES

Arabic	:	Native Language
English	:	Very Good

COMPUTER SKILLS

: Windows, MS Office, Internet

: Matlab Simulation

: Some different Electrical Design Programs

TRAINING COURSES AND CERTIFICATIONS

: Technical Training in Generators with Mitsubishi in Japan.
: Technical Training in Cables with Megger Company.
: Technical Training in Siemens Relays in Germany.
: Technical Training in GIS Hyosung in KSA.
: Technical Training with ZTR in Power Transformers in Egypt.
: Technical Training in MV SWGR by Schneider Electric in Egypt.
: Technical Training in MV SWGR by ALFANAR in KSA.
: Technical Training in Advanced Relays GE, ABB, Alstom in Egypt.
: Technical Training with in Testing and Commissioning with GE in Egypt & KSA.
: Technical Training with the Egyptian Ministry of Electricity and Energy.
: Technical Training on Testing Kits manufacture red by MEGGER and PROGRAMMA.
: Project Management Professional (PMP) - PMI Standard - USA.
: Risk Management Professional (RMP) - PMI Standard - USA.
: Cost Engineering Professional - CCC / CCE Certification - AAECI Standard.
: Scheduling and Planning using Microsoft Project Tools - MS Project 2010.
: Scheduling and Planning using Microsoft Project Tools - MS Project 2013.
: Safety and Healthy Environment - OSHA for General Industries by GE.
: Safety and Healthy Environment - OSHA for Construction by GE.
: Crisis Management and Security.
: Lean Six Sigma.
: Presentation Skills.
: Customer Focus for Project Managers.
: Lean Six Sigma for Project Managers.
: Contract Management for Project Managers.
: Information Technology.
: Leadership Essential: Motivating Employees.
: Spirit & Letters.
: Conflict of Interest.
: Customer Site Awareness.
: General Environmental Awareness.
: Safety Risk assessment.
: Travel Health, Safety and Security.
: International driver and transportation safety awareness.
: Certified Association in Project Management, PMI - USA (CAPM).
: Project Management University, General Electric (PMU).

CHRONOLOGICAL EXPERIENCE RECORD

Dates : From Dec. 2014 till now
Employer : Algihaz Holding Company, KSA

Job title : Testing and Commissioning Team Leader
(Substation Testing & Commissioning Manager)

Job Description :

- Approved by the Saudi Electricity Company (SEC) as a Testing and Commissioning Project Coordinator in Substations up to 380KV.
- Leading a group of Engineers and Technicians in 110/13.8KV in Old Road Mekkah Jeddah (Hadda Central 110/13.8KV S/S).
- Making site observation to decide the readiness of the site to start the testing and commissioning activities.
- Identify the required facilities for the site, ex. WC, Stationeries, Offices, Drawings, Material, Labors, Safety …etc.
- Prepare the Bill of Quantity for all components as per the available panels.
- Account the missing components with reference to the approved drawings.
- Issue the necessary NCR (Non Conformance Report) for the missing and/or defected components to the main/sub-contractor and follow them with the site manager/vendors representative.
- Prepare Master Schedule for the Pre-commissioning Activities and according to SEC Standards.
- Prepare Master Schedule for the Commissioning Activities and according to SEC Standards.
- Prepare the Organization Chart for the testing and commission team to get the approval from the end user.
- Identify the required testing kits as per the master schedule.
- Coordinating with the Equipment Controller to mobilize the needed testing equipment safely and handing them over to the site store keeper.
- Ensuring the valid calibration certificate to all available testers.
- Prepare the Commission Files as per SEC requirements (SLD, Organization Chart, Engineer's Approval, Equipment List, Calibration Certificates ...etc. for CSD Team (Commissioning Service Dept.).
- Mobilizing the qualified testing and commissioning team to the site as per the master plan scheduled activities.
- Assigning the testing engineers according to their approval and capabilities.
- Support the testing team in doing the activities as SEC procedures.
- Prepare the Test Reports as Per the Filling System requirements (SEC Standard).
- Solving the technical issues that may be raised during the pre-check and/or commission period.
- Preparing the interfacing loops and Bus wires for panels.
- Preparing the commissioning drawing copy for CSD as a preparation for the as built drawings.
- Preparing the required modifications if required.
- Preparing and submitting weekly progress report to all stakeholders.
- Preparing the agenda for the weekly meeting with all stakeholders.
- Assure the drawing revisions for all available schemes and the availability of the Approves Letters as per the approved DTS (Data Transfer System).
- Assuring following the safety and healthy roles for the team and our equipment.
- Overcome any problems regarding the testing and commissioning activities.

- Updating the Master Plan in Bi-weekly basis.
- Discuss with the designers regarding the technical issues and required modifications.
- Sending the suggested solutions in major modifications to get the CSD approval.
- Following the TCP-105 in performing the activities.
- Prepare the pre-check and commissioning drawings copy.
- Update the commissioning files with all necessary date.
- Coordinating with other sub-contractors and suppliers.
- Preparing the Open Loop Activities for the SAS.
- Preparing the Closed Loop Activities for the SAS.
- Preparing the HV Test for the GIS and coordinating with the GIS Supervisor.
- Preparing the HV Test for the HV Cables and coordinating with the Cables Supplier.
- Preparing the HV Test for the MV SWGR and coordinating with the SWGR Supervisor.
- Issuing the required invoice to the client as per accumulative achieved progress.
- Also, in addition to the previous, doing the following managerial activities:
  - Demobilizing the team and/or equipment as per master plan.
  - Preparing financial report and issuing a settlement sheet for expenses.
  - Monitoring and controlling the master plan for activities, manpower, and budgetary.
  - Approving the monthly time sheet for the team.
  - Approving the monthly invoices for the team and according to the budget.
  - Attending meetings on the site and on my company or the end user.
  - Approving the housing and transportations as per the budget limits.
  - Approving the annual and emergencies vacations for the team.
  - Preparing the annual plan for the required test kits in all projects in the company.
  - Nominating the team for others projects, increments, or final exit.
  - Screening the resumes for the opened vacancies.
  - Attending interview for the selected candidates.

Dates : From Dec. 2010 till Dec. 2014

Employer : GE, KSA

Job title : Senior Field Engineer

Job Description :

- My position is divided into two parts, the 1st is in service & projects management, besides supporting the team members in testing and commissioning and carrying out the activities in proper way.
- Safety has the first priority in my company; I have finished more than 70 EHS courses, First Aid.
- Besides the Diploma in Project Management and some courses in Quality, personal skills and Leadership.
- Meet the client at my office and discuss with him about what his requirements so I can start to evaluate his quotation.

- I had to go the customer area to make site survey to give a brief feedback to my Manager about the required job and to check to location and check the safety and hazards.
- Assign the suitable commissioning team members to each project.
- Co-operation with the sales team for estimating the coming quotations.
- Send the offers to customers and receive the purchase order from them.
- In addition to the previous, I have worked in the following projects:
  - SHARQ Petrochemical Plant – Al Jubail – Eastern Region:
    - It is Lam Sum job, I have to achieve all activities through short time. The main job is to test some Electromechanical Protection Relays made by Mitsubishi Company during the shut down of substation No. 22.
    - The tested relays were: MVT11, 12 – DQA55ST, MVTD12, MCCGG22, DQAWA, DQA2H, DQAWK, MAVS03.
  - Madinah East S/S 380/110KV – ALMADINAH – Western Region (from Jan. 2010 till Feb. 2010):
    - I was one of the team who has been assigned to achieve the required activities.
    - Verifying and modifying LCC Panels for 3 Diameters, each one has 5 panels.
    - Verifying and energizing DC & AC voltages from the ACP & DCP up to LCC Panels.
    - Verifying and modifying all 3 Diameters Voltage & Current Transformers.
    - Verifying and correcting the mistakes in the drawings and schemes.
    - Making the cable schedule for the external wires from GIS up to 380KV protection panels for control cables and CT circuits.
    - Testing some CTS according to AREVA Procedure (using CT Analyzer) and supporting the other engineers if they found any problem.
    - Survey work of the missing items for each panel.
    - Testing Siemens protection relays type 7SD & 7VK.
  - Alfaqeer S/S 380/110KV – ALMADINAH – Wadi Elfara – Western Region (from Feb. 2010 till Mar. 2010):
    - It is the one of Madinah S/S remote ends; it was done by ABB Co. We have to install 7 new panels for the new OHTL and rectify the new panels according to the existing system.
    - Isolate the DC, AC, BF, BB, VT, CT, and SCADA signals from the old panels to the running system.
    - Remove the old panels and install the new.
    - Survey work of the missing items for each panel.
    - Verifying and correcting the mistakes in the drawings and schemes.
    - Testing the following types of relays made by Siemens Co.: 7SD522 Line Differential Protection Relay - 7VK511 Auto Reclose Relay.
    - Testing the following Aux. Relays made by Siemens Co.: 7PA3032 - 7PA3027.
    - Testing all new Panels MCB according to its characteristic with 3 rated current.
  - Training (6 months) from GE Canada Engineers, held here in KSA. Training on the following instruments:

- Very Low Frequency AC Hi Pot type VLF28 for testing cables.
- AC Hi Pot type.
- DC Hi pot type.
- Transformers Turns Ration type TTR 310.
- Transformers winding resistance DLRO.
- Current Transformer Test Set type MCT1605.
- Contact Resistance type.
- Vacuum Integrity Test Set type VIDAR.
- Transformer Power Factor type DOBLE.
- A training on GE Products breakers – relays – transformers – motors.
- In addition to the training I have some Sites Survey with ARAMCO, SHARQ and SABIC to discuss project plan and Customer requirements.

- AL DUR Power Plant – Independent Water and Power Project (IWPP) – Bahrain (from May 2010 till Jul. 2010):
  - Here my customer is HHI (Hyundai Heavy Industrial) Company, I am the Site Manager for testing and commissioning 19 Transformers made by HHI & GE. I have to coordinate between my company and the customer, reporting, besides supporting my team in testing.
  - The following tests were carried out:
    - Visual Inspection & Insulation Resistance.
    - Transformer Power Factor Measurement.
    - Transformer Winding Resistance.
    - Transformer Turns Ratio.
    - Vector Group Checking.
    - Bushing Current Transformers (CT Ratio – Polarity – Insulation - Secondary Winding Resistance – Saturation Curve).
    - Oil Dielectric.
    - Fans (Megger & Operation).
- Subiya CCGT – Kuwait State (from Oct. 2010 till Dec. 2011):
  - Here my customer is 3 different companies; I was in charged to co-ordinate and manage the site with 3 different subcontractors (HHI, ALGHANIM, and NCC in urgent). The project has 3 different sites with 3 different contracts. Each contract has a different scope, different team, and different cost. I am managing between the 3 companies and HHI as the main contract in the project and MEW the owner in Kuwait (Ministry of Electricity and Water).
  - Check the EHS in site and all team members and prepare JSA daily.
  - Design the schedule for the running activities for each scope.
  - Attend the meeting with the owner and the different contracts.
  - Provide the owner with the necessary information they need.
  - Provide my team with the required drawings with updating.
  - Upgrade the schedule prior to the achieved activities.
  - Manage the test kits between sites and ensure their safety.
  - Provide all terminals with weekly report and renew it weekly.
  - Negotiate with all site terminals if necessary.
  - Co-ordinate the sites to avoid the conflict between each scope's schedule.

- Support the team with my experience to achieve all tests.
- Ensuring the quality of the running activities as per my company's standards.
- Trying to bring more quotations and PO to my company (I did).
- Send and receive the letters and emails from all clients.
- Prepare the completion certificate for the jobs finished.
- Prepare the test report templates.
- Submit all test reports to finalize and close the project.
- Besides, I participated in testing and commissioning some activities by myself as the customer request such as HI pot, Stability and extra tests.

Dates : From Dec. 2008 till Dec. 2010

Employer : AL FANAR Group – Testing & Commissioning Company "AT&C" – KSA

Job title : Protection & Testing Engineer

Job Description :

- I have to do the tests by myself before re-testing them again with the witness which is presented by Saudi Electricity Company (SEC).
- I have worked in the following projects:
  - 9006 S/S 380/138KV – Al DAWADMI – Center Region:
    - Current Transformers Loop check.
    - Secondary Injection Test for Current Transformers.
    - Voltage Transformers Loop Check.
    - Secondary Injection Test for Voltage Transformers.
    - I used FREJA 300 Secondary Injection Set for performing previous tests.
  - Al King ABDULLA S/S 132/33KV – RIYADH – Center Region:
    - Modify the Protection Panels according to the approved drawings.
    - Having training on Tan Delta testing Unit for testing Power Transformers.
  - PP8 – RIYADH – Center Region: I had a training on MICOM P442 – Distance Protection Relay – AREVA Co.
  - SALWA S/S 400KV, 50 HZ – Al DAMMAM – East Region (Jan. 2009):
    - I have been rented by my company to AREVA Company the main contract for Gulf (GCCIA).
    - Current Transformers Loop check.
    - Secondary Injection Test for Current Transformers.
    - Testing the following relays:
      - MICOM P821 – Circuit Breaker Fail.
      - MICOM P122 – High Impedance Relay.
      - MICOM P921 – O/U Voltage.
    - I used FREJA 300 Secondary Injection Set for performing previous tests.
  - Al JASRA S/S 400KV, 50 HZ – Bahrain (from Jan. 2009 till Mar. 2009):
    - Performing the Internal, Bus and External wires to the panels according to the drawings.
    - Performing DC Loop Check for Protection Panels.
    - Current Transformers Loop check.
    - Secondary Injection Test for Current Transformers.
    - Voltage Transformers Loop Check.

- Secondary Injection Test for Voltage Transformers.
- Testing the following types of Auxiliary and LOCKOUT Relays: MVAJ – MVAJ – MVAX.
- Testing Trip Circuit Super Vision Relays.
- All made by AREVA Co.
- I used SVERKER Secondary Injection Set for testing previous apparatus.
- Testing the following relays:
  - P821 Synhro Check Relay.
  - P122 High Impedance Relay for Bus Bar.
  - P921 O/U Voltage Relay.
  - All made by AREVA Co.
- Performing all Alarms from GIS and Protection panels BCU to the DCS.
- Reporting cable schedule for the station.

- JABAL AL NOUR S/S 110/13.8KV, 60 HZ – MEKKA – West Region (from Mar. 2009 till Apr. 2009):
  - Performing Pre-Check for Internal, Bus and External wires to the Protection panels according to the drawings (Pre- Check).
  - Performing DC Loop Check for Protection Panels.
  - Current Transformers Loop check.
  - Secondary Injection Test for Current Transformers.
  - Voltage Transformers Loop Check.
  - Secondary Injection Test for Voltage Transformers.
  - Scheme Check for Protection Panels made by Saudi Electricity Limited and Siemens Protection Relays.
  - Function Check for 20 Feeders Switchgear.
  - Scheme Check for a complete Switch Gear 13.8KV made by Schneider Co. (16 Feeder + INCOMER) and making scheme logic.
  - MOSAIC and ANNUNCIATOR Check.
- ARAMCO Site East West Station #3 230/34.5KV – 60 HZ – Al WASIA – EAST Region (from Mar. 2009 till Jun. 2009):
  - I worked at this station (Remote End of AL WASIA 230KV, 60 HZ) to perform the following:
    - Coordinate between ARAMCO Site & AL WASIA Site.
    - Make TRIP Test to AL WASIA Line 1 & Line 2 from ARAMCO site.
    - Scheme Check for BF Trip circuit.
    - Scheme Check TC1 & TC2 for both AL WASIA 1, 2.
    - Testing Lock out relays (Pick up & Drop off current + Trip & Drop off Time).
    - Testing Aux. Relays Made by ABB.
    - Make END – TO – END Test for digital protection relays MICOM P545 made by AREVA & RED 670 made by ABB using FREJA 300.
    - Check CT and VT circuits before energize.
    - Contact Resistance for out door bus bar 230KV.
    - Stability and Sensitivity test for bus bar.
    - Measuring the Timing of 3 pole circuit breakers 230KV made by ABB.
    - Give Clearance with Saudi Electricity Engineers finishing commissioning and the access for Energize.

    - Follow up the Energize of both OHTL's between AL WASIA & E/W S/S #3 and record the necessary results.
- SAUDI KAYAN Petrochemical Site – Low voltage Switchgear – Al Jubail – EAST Region (Jun. 2009):
  - I got rented to with my group to ABB Co. the subcontractor of KBR the main contractor of Saudi Kayan Project. Our scope worked at this station was Low Voltage Switchgear made by ABB. I had to carry out the following:
    - Coordinate between my staff, ABB group and my company office.
    - Made the schedule for the running activities.
    - Discuss with the owner about his requirement and the achieved progress.
    - Design the test format for the tested equipments which include:
      - Trip Test – Megger – Contact resistance for 25 Low voltage circuit breakers.
      - Turns Ratio – Polarity – Winding Resistance – Megger – Magnetization Curve for 160 single core CT in 10 Incomers and 4 Bus Ties.
      - Turns Ratio – Polarity – Winding Resistance – Megger for 20 Voltage Transformers (14 three Phases + 6 single Phase).
      - Testing 15 low voltage Circuit Breakers, each contains (5 CT's + 1 VT).
      - Scheme Check for the protection panels.
      - Function test for the breakers of incomers, feeders type SACE E60.
      - Function test for all low voltage loads circuit breakers.
      - Testing the following relays: SEPAJ – GE 750 – O/C Relay ABB.
- SAUDI KAYAN Petrochemical Site – Low voltage Switchgear – Al Jubail – EAST Region (Jun./Jul. 2009):
  - I still rented to ABB through NSH to KAYN the owner of project, our scope this stage is to test 500 cassettes low voltage circuit breaker with the next procedure:
    - Testing the Molded Case Circuit Breaker (MCCB) with:
      - MEGGER.
      - TRIP TEST.
      - CONTACT RESISTANCE.
    - Testing 5 Current Transformers/ cassette with:
      - MEGGER.
      - WINDING RESISTANCE.
      - MAGNETIZATION CURVE.
      - POLARITY.
      - TURNS RATIO.
    - Testing a Voltage Transformer / cassette with:
      - MEGGER.
      - POLARITY.
      - TURNS RATIO.
      - WINDING RESISTANCE.
- ALFANAR Substation 132/13.8KV – Industrial City – Riyadh – Middle Region (from Aug. 2009 till Nov. 2009):

- I started in this station as a team leader for 4 Engineers to coordinate with SEC Engineers, the contractor and my company. I had to manage the activities between my Engineers, saving the required testers and materials, manage the schedule for our progress, besides I have to carry out the following:
  - Verifying and modifying scheme for 13.8KV Switchgear made by ABB type VD4, 3 sections each section consists of 10 outgoing and an incomer.
  - Performing the following tests for ABB Switchgear Circuit Breakers VD4:
    - MEGGER.
    - Contact RESISTANCE.
    - Timing.
    - Reduced Voltage Test.
  - Verifying and modifying scheme for 132KV Protection Panels made by AREVA.
  - Testing different types of Lockouts and Aus. Relays made by AREVA.
  - Testing different types of Lockouts Aux. Relays made by ABB.
  - Testing 35 Annauncaitors made by RTK.
  - Testing the following relays:
    - P122.
    - Arigus.
    - CT Supervision.
  - Train some new Engineers for the previous activities.

Dates : From Oct. 2004 till Dec. 2008

Employer : Middle Delta Electricity Production Company (MDEPC)

Project : Nubaria Combined Cycle Power Station I & II (2x750MW)

Job title : Commissioning & Protection Engineer

Job Description :

- One of the Commissioning team for supervising and monitoring Protection duties.
- Each module has the following:
  - Two Gas units (made by SIEMENS).
  - One Steam Unit (made by MITSUBISHI).
  - Three Main Transformers (made by ZTR).
  - Two Auxiliary Transformers (made by ZTR).
  - One excitation Transformer (made by MELCO).
  - Medium Voltage Switch Gear 6.3 V (mde by SCHNEIDER).
  - Different types of Protection Relays (SIEMENS – GE – BECKWITH – MERLIN GERIN).
- Beside the previous systems the plant have a very huge (AIS) Air ISOLATED SWITCH YARD, which consists of:
  - 220KV Switch Yard (ABB):
    - 8 Lines (OHTL) – 220KV.
    - Bus Coupler.
    - SF6 Circuit breaker.
    - Isolators.
  - 500KV Switch Yard (HITACHI):
    - 2 Lines (OHTL) - 500KV.
    - SF6 Circuit Breaker.

- Isolators.

12 Single Phase Tie Transformers (500/220).

- SWITCH YARD CONTROL ROOM:
  - 220KV Protection Panels (ABB):
    - 220KV Bus Bar Protection Panel.
    - 220KV Energy Meter.
    - 220KV Synchronizing Panel.
  - 500KV Protection Panels (AREVA):
    - 500KV Bus Bar Protection Panel.
    - 500KV Energy Meter.
    - 500KV Synchronizing Panel.

- I had a responsibility do to the following:
  - Receiving the electrical components and machines from the supplier companies.
  - Making visual inspection to these electrical apparatus.
  - Receiving protection devices and relays from the provider companies.
  - Making reports about each component specifications.
  - Sending & receiving the letters from the companies.
  - Receiving the Spare Parts according to the contracts.
  - Receiving the Special Tools from the contractors.
  - Preparing a monthly report about the protection department Job.
  - Checking the Panels wiring and its virtual inspection.
  - Supervision construction and Installation of the received electrical components, machines, and protection relays.
  - Supervisor for the tests and the commissioning of all different electrical systems as following:
    - Commissioning the following devices in 500 and 220KV Systems in the Out Door Substation: Current Transformers – Voltage Transformers, Isolators – Circuit Breakers.
    - Commissioning High Power Tie Transformers 500/220KV used in the Switch Yard.
    - Commissioning the Main & Aux. Transformers of the Gas Units including the visual inspection, Dc resistance, Megger, tan (δ), mechanical and electrical protections.
    - Commissioning fire fighting for different systems.
    - Commissioning the Main & excitation Transformer of the Steam units including the visual inspection, mechanical and electrical protections.
    - Commissioning the protection relays for bus bars (220- 500KV) and performing the stability test.
    - Commissioning the following High Voltage Tests for Gas and Steam unit Generators: DC Resistance – Megger – High Voltage Test.
    - Commissioning the Energy Meters for (500 – 220 – 6.3KV) and all generation systems.
    - Commissioning the station OHTL with its tests specially the Distance Protection function.
    - Commissioning the COLONY and buildings lighting and its distribution transformers and panels.
    - Commissioning the Earthing rods and wells.
    - Commissioning Medium Voltage System including the protection relays programming, commissioning and testing the

setting functions.

- Commissioning several types of Protection Relays for different Voltage Systems with different commissioning companies:
  - 500KV Protection Relays with (AREVA – CONSIS): MICOMS1 (P126 – P141 – P143 - P442 - P437 - P443 - P741-P742 - P632).
  - Commissioning 220KV Protection Relays with (ABB – ABB): REL316V2.5 – REL531V2.5 – REB500.
  - Main & Aux. transformers Protection Relays (GENERAL ELECTRIC): UR family T35-T60, MIFII, MIVII and DTP.
  - Steam Generator & Excitation Transformer (BECKWITH – MELCO).
  - 6.3KV Protection relays with (SCHNEIDER – INITEC – MADKOUR GROUP – NTC – Global): SEPAM1000 Series20 - SEPAM1000 Series40).
  - 400 V Protection relays (SCHNEIDER – INITEC – MADKOUR GROUP – NTC – GLOBAL) as "VIGRIX120" for Earth Fault – DOLD for the Under Voltage".
  - Commissioning SCADA & PLC System (TELEMECHANICAL) for Monitoring Low & Medium Voltage Systems and ensure all signals healthy.
  - Commissioning the Cables and making Loop Check & Continuity test.
  - Some background about design programs & electrical calculations for bus bar, transformers, power factor, induction motors and cables.

Injection Set:

- Secondary Injection Set:
  - ISA – SVERKER 750 – MANTA – FREJA 300, 305 – CPC 100.
- Primary Injection Set:
  - ODEN 3000 Amp – ISA 5000 Amp.

Testing Equipment:

I worked with different equipment from MEGGER, OMICRON, PROGRAMA, GE.