100831-ELE-MPT-E-2007
Protection, Testing & Commissioning Engineer

Holds a B. Sc. in Electrical Power & Machines Engineering and has about 10 years hands-on experience, mainly working in maintenance, protection and testing.

PERSONAL DATA

Nationality	:	Egyptian
Birth Date	:	03/08/1985
Gender	:	Male
Marital Status	:	Married
Residence	:	Currently KSA

EDUCATION

: B. Sc. in Electrical Power & Machines Engineering, Assiut University, 2007

LANGUAGES

Arabic	:	Native Language
English	:	Excellent
German	:	Fair

COMPUTER SKILLS

: Windows, MS Office, Internet
: MATLAB 7
: PLC Simulation Program
: Work bench

TRAINING COURSES AND CERTIFICATIONS

: Certificates of attendance at Assiut Oil Refining Company (A.S.O.R.C.) courses (Aug. 2003, Aug./Sep. 2005 & Aug./Sep. 2006).
: Certificate of attendance at Assiut Thermal Power Generation Plant course (Jul./Aug. 2006).
: Certificate of attendance at Assiut Electricity Distribution Network course (Jul. 2006) in:
- Transformers.
- Protection.
- Electric counter meters.
- Electricity distribution network.
- Control.

: Certificate from Assiut University at Programmable Logic Controller (PLC) (Aug. 2007).

: Certificate from Society service department and environment development (Assiut University) of attendance at project activities of analyzing power consumption patterns.

CHRONOLOGICAL EXPERIENCE RECORD

Dates : From Mar. 2012 till now

Employer : Bemco Services Company in Saudi Arabia

Job title : Protection, Testing & Commissioning Engineer

Job Description :

- AL-QASSIM Power Plant Extension III (2012):
  - GE LV & MV switchgear panels testing.
  - CT'S – VT'S & circuit check – Breakers testing – primary injection – contact resistance – over current relay – earth fault relay – SYNCHRO - check relay, breaker open- close time, modification, insulation resistance test.
  - Transducers testing.
  - Ammeters – Voltmeters – power meters Testing.
  - ABB SACE TS3 (480 V) SSTD testing.
  - Insulation Resistance.
  - HI – pot.
  - 132KV ABB Generator circuit breakers (GCB) Testing – wiring check – modification – CT&VT Test – interlock – isolators – earth switch, Single EARTHING point.
  - 132KV GIS LCC Modification and Scheme Check.
  - Trip test.
- Al Haram Extension switchgear (ALSHAMIYA), Makkah (2013):
  - Testing and Commissioning of individual equipment's such as CTs, VTs, Breakers and Bus bar.
  - Testing of Protective Relays (SEPAM).
  - Switchgear (SCHNEIDER) scheme check.
- AL-QURAYYA Power Plant (combined cycle) (2013):
  - LV & MV switchgear panels testing.
  - CT'S – VT'S & circuit check – Breakers testing – primary injection – contact resistance – over current relay – earth fault relay – SYNCHRO - check relay, breaker open- close time, modification, insulation resistance test.
  - Transducers testing.
  - Ammeters – Voltmeters – power meters Testing.
  - (480 V) SSTD testing.
  - Insulation Resistance.
  - HI – pot.
- KING ABD EL AZIZ University Central Cooling Plant (KAU CUP2) O&M (from 2013 till now):
  Testing, Commissioning, Start-up & O&M for:
  - 13.8KV SWG (Eaton / Feeder Management Protection Relay FP-5000, outgoing feeder Relay DT3000).
  - Testing, Commissioning and start-up of (5 OM and 2 CYK chillers 13.8KV Auto transformer Starter from Eaton with Motor Management relay 469).
  - Testing, Commissioning of 5 OM 6000 HP and 4 CYK 2000 HP, 13.8KV chiller Motor.
  - Testing, Commissioning and start-up of 4.16KV SWG (Eaton

protection relay FP5000, Motor management relay MP-4000, M.V Soft Starter, M.V VFD (Allen Bradley ROCK Well Automation).
- Testing, Commissioning and start-up of 2 Oil type Transformer 13.8/4.16KV with its differential relays & over current relay.
- Testing, Commissioning and start-up of 4 Dry type 13.8KV / 380 V Transformer.
- Testing, Commissioning and start-up of 4 MCC 380 V (main incomer and bus tie breakers, relays, soft starter).
- Testing, Commissioning and start-up of 60 fluid cooler fan Motor with their protection relay and soft starter.
- Testing, Commissioning and start-up of 10 AHU.
- Testing, Commissioning and start-up of 25 100HP, 400HP, 600HP Pumps Motor and Dry Run Test.
- Modify logics and graphics.
- Operation and maintenance of 60,000 TR District cooling plant.
- Preparing daily and monthly reports of the plant.
- Calculate consumed power and tons daily and monthly.
- Prepare daily & monthly attendance time sheet for employees.

Dates : From 2007 till Mar. 2012

Employer : Toshiba & Ansaldo

Project : Assiut Thermal Power Station 2x300MW

Job titles :
- Maintenance, Protection & Testing Engineer
- Operation Engineer (9 months)

Job Description : Testing of Generator, Transformers, 220KV T.L./Bus bar, Feeder/Bus bar of 6.3KV Protection Relays, SF6 Gas CB Test Earth resistance measurement and DC system.

Further experiences : Work as Instructor for SEC with SHTC for Training Courses (2013, 2014, 2015, 2016).

Field of experience :
- 220KV protections:
  - 7SR1102, 7SR1205 Siemens Digital Relays (Over Current & Directional O.C.).
  - Distance Relay: LZ96 – Razfe – L8b (ABB).
  - Over current Relay: TCO23B-DU2K, TCO21B-DU22K, TCO22B-DU1K (TOSHIBA), PRAJ 131 (ABB), SPAJ 140C (ABB).
  - Earth Fault Relay: TCO21B-DUIK, TBB7B-DU2X (Restricted Earth Fault), TOSHIBA.
  - Directional Relay: TDS2B-CG1, TDG20B-EG2 (TOSHIBA), SPAA 321C (ABB).
  - Differential Relay: TBB7B-DU2X, TB11B-TU2K (TOSHIBA), RADHA (ABB).
  - Breaker Failure Relay: TCO24B-TU1Q (TOSHIBA).
  - Under voltage Relay: TVU3F-BG21, TVU3F-BG31.
- 6.3KV & 380V protections:
  - 7SR1102, 7SR1205 Siemens Digital Relays (Over Current & Directional O.C.).
  - Over current Relay: ICO1D-AT3H, ICO1F-AT2H (TOSHIBA), IKC 913 (ABB).
  - Earth Fault Relay: ICO1D-AT1 (TOSHIBA), IKC 911 (ABB).

- Differential Relay: ICO1F-AT2H (TOSHIBA), IKC 913 (ABB).
- Under voltage Relay: IVU1F-AG1, IVG1D-BG1 (TOSHIBA), UKT 911 (ABB), TVU3F-BG21 (ABB).
- SSTD Protection.

- Generator Protection:
  - Gen. Impedance back-up Relay (21G): CYS2D-BS1 (TOSHIBA), RAKZB (ABB).
  - Gen. Reverse power Relay (32G): CW-12B-D (TOSHIBA), RXPE40 (ABB).
  - Gen. Loss of field Relay (40G): TYRID-BT1 (TOSHIBA), RAGPC (ABB).
  - Gen. Negative phase sequence Relay (46G): TQRID-MC4K (TOSHIBA), RARIB (ABB).
  - Gen. Over current Relay (51G): TCO21B-DU1K (TOSHIBA).
  - Gen. VT voltage balance Relay (60G): TBV4D-DU1X (TOSHIBA), RXBA4 (ABB).
  - Gen. Stator earth fault Relay (64G): TRG1D-MC6K (TOSHIBA), RAGEA (ABB).
  - Turbine/Gen. Under frequency Relay (81L): TFF6B-MC1K (TOSHIBA), RXFE4 (ABB).
  - Over frequency Relay (81H): RXFE4 (ABB).
  - Gen. Differential Relay (87G): TBR1F-BS2 (TOSHIBA), RADSG (ABB).
  - Gen. Transformer Differential Relay (87GT): TBT11B-TU2K (TOSHIBA), RADSB (ABB).
  - Gen. Over excitation Relay (59 V/F): THV2D-MC5K (TOSHIBA), RATUB (ABB).
  - Gen. Field earth fault Relay (64GE): TCR3D-BS1 (TOSHIBA), RXNB4 (ABB).
  - Excitation transformer Differential Relay (87E): IBT1D-BT2 (TOSHIBA).
  - Dead machine Relay (51/27): RAGUA (ABB).
  - Under voltage Relay (27G): RXEG21 (ABB).
  - Over voltage Relay (59G): RXEG21 (ABB).
  - 7SR1102, 7SR1205 Siemens Digital Relays.
- Transformer Protection (Electrical & Mechanical):
  - Over current Relay: SPAJ 142C (ABB).
  - Restricted Earth Fault: RADHD (ABB).
  - Earth fault Relay: RXIG21 (ABB).
  - Differential Relay: RADSB (ABB).
  - 7SR1102, 7SR1205 Siemens Digital Relays.
  - Buchholz Relay.
  - Pressure Relief Relay.
- DC system:
  - Discharging and recharging of Batteries, Chargers Maintenance and Battery Liquid Change for:
    - UPS System.
    - 220V (820 A), 48V (390 A).
- Earth resistance measurement:
  - Testing and commissioning of LV/MV/HV projects.
  - Prepare drawings as built and modification according to customer requirement.
  - Commissioning of 4.16KV, 13.8KV, 132KV and 380KV Control and

Relay panels.
- Troubleshooting in Electrical protection systems and fault analyzing.
- Testing and Commissioning of individual equipment such as CTs, VTs, CVTs, Breakers (SF6/Vacuum/AIR) and Isolators in Substations.
- Testing and Commissioning of individual equipment such as CTs, VTs Breakers (SF6/Vacuum/AIR) and Isolators in Switchgears.
- Testing and Commissioning of Protection relays in Substations and switchgears.

Electrical Testing:

- Lines & Bus Bars Breakers:
  - DC contact resistance.
  - Open-Close time measuring.
  - SF6 Gas test.
  - Experience in ABB GCB.
- Transformers:
  - Winding Insulation resistance (Megger).
  - DC resistance of winding (high voltage).
  - Capacitance & Dissipation Factor (Tan δ).
  - FRA (Frequency Response Analysis) Test.
  - DFR (Dielectric Frequency Response) Test.
  - SF6 Gas test.
  - Excitation current test.
  - Turns ratio.
  - Neutral Ground Resistor.
  - Calibration of Low Voltage Winding Temperature Indicator for transformers.
  - Calibration of oil temperature Indicator.
- GE LV & MV switchgear panels testing:
  - CT'S – VT'S & circuit check – Breakers testing – primary injection – contact resistance – over current relay – earth fault relay – SYNCHRO – check relay, breaker open - close time, modification, insulation resistance test.
  - Transducers testing.
  - Ammeters – Voltmeters – power meters Testing.
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  - Testing, commissioning of (5 OM 6000 HP and 4 CYK 2000 HP, 13.8KV chillers Motor).
  - Testing, commissioning and start-up of 4.16KV SWG (Eaton protection relay FP5000, Motor management relay MP-4000, M.V

Soft Starter, M.V VFD (Allen Bradley ROCK Well Automation).
- Testing, commissioning and start-up of 2 Oil type Transformer 13.8/4.16KV with its differential relays & over current relay.
- Testing, commissioning and start-up of 4 Dry type 13.8KV / 380 V Transformer.
- Testing, commissioning and start-up of 4 MCC 380 V (main incomer and bus tie breakers, relays, soft starter).
- Testing, commissioning and start-up of 60 fluid cooler fan Motor with their protection relay and soft starter.
- Testing, commissioning and start-up of 10 AHU-
- Testing, commissioning and start-up of 25 100HP, 400HP, 600HP Pumps Motor.
- Modify logics and graphics.
- Operation and maintenance of 60,000 TR District cooling plant.

- Instruments:
  - For Secondary Injection:
    - Omicron (CMC 156).
    - Sverker 650.
    - PHU-100.
    - PHU-1040.
    - FREJA-300.
  - For primary injection:
    - ODEN.
  - For DC Current and Voltage:
    - D.C. Multi – Function Calibrator Model 1017.
  - Function Generator:
    - FG121B.
  - For Testing Distance Relays:
    - ABB (XS92a).
    - ABB (QZW 415).
  - For Testing SSTD 380V:
    - SSTD3-TEB3.
    - SACE-SET1.
    - ABB SACE TS3 (480 V).
  - For Insulation Resistance Megger:
    - YOKOGAWA 3213.
    - M 4100/4.
    - IMI – 413.
    - CHAUVIN ARNOUX ISOL 5002.
  - For Earth Resistance Measurement:
    - M5032.
  - For Tan δ & DC resistance:
    - Omicron (CPC-100).
    - WRT-100 ADWEL.
  - For contact resistance & Open-close Time:
    - SMC (PME-500-TR).
    - ADWEL (CRD-100x2).
    - MOM 690.
    - EGIL.
  - For Turns Ratio:
    - TTR 3300.
  - For CT:
    - Omicron CT Analyzer.

- For DFR Test:
  - Omicron (DIRANA).
- For FRA Test:
  - Megger (FRAX 101).
- Digital Phase Meter:
  - KDK DPF - 30N.
- Time Meters:
  - KDK MCS-5N.
  - ZSK – 2.
- Phase Detector:
  - RST – 2.
  - KDK.

Project Objectives:

- Studying the effect of corona on power loss along the transmission lines, Interface with radio, onset voltage of corona on coated and bare transmission lines.
- Electric field of coated and bare transmission lines.
- Effect of the height of transmission line above the earth on onset voltage of corona and electric field.
- Effect of temperature on onset voltage of corona and electric field.
- Effect of permittivity of insulation on onset voltage and electric field of transmission line.
- Effect of diameter of conductor and thickness of coating on onset voltage and electric field of transmission line.
- Calculations of onset voltage and electric field of bare and coated conductor using MATLAB (7).

Operation & Maintenance:

- Good experience in operation and maintenance at: Processing of operation and solving problems – Chillers – Fixed pumps – VFD Pumps – AHU Units – FCU Units – Air compressors – Switchgears – MCC – HVAC System – Starting up and Shutdown of plant – BMS – Condenser cooling system.
- Good experience in Thermal Power Plants:
  - Start-up and shut-down procedures for thermal power plant 2x312MW (Cold, Warm, and Hot Start-up and normal or emergency shut-down).
  - Turbine & auxiliaries operation (TOSHIBA & ANSALDO). And reporting the equipment condition during normal operation.
  - Boiler & auxiliaries operation (MITSUBISHI & ANSALDO) and reporting the equipment condition during normal operation.
  - Good working knowledge of hydrogen production plant mechanical equipment.
  - Good working knowledge of firefighting system (water system, foam system and dry powder system locally and alarms control panel).