



**Engr. ZULQARNAIN MUSHTAQ  
ELECTRICAL COMMISSIONING ENGINEER  
COMMISSIONING SERVICES DEPARTMENT  
SAUDI ELECTRICITY COMPANY, KSA**

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Nationality: Pakistan

**Objective:** To work honestly and with dedication as an integral part of a professional enterprise that can entrust me with a variety of technical and managerial responsibilities, so that I can fully apply my knowledge and enhance my learning as well.

**Educational Qualification:**

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**University of Engineering & Technology Taxila  
Pakistan.**

B.SC in Electrical Engineering (Honours) in Sep. 2002.  
Marks Obtained: 3895/5000 Cumulative % age: 78%

**Professional Experience:**

More than 15 Years of experience including 10 years in **Saudi Electricity Company** as Electrical Transmission Engineer-A (5 Years & 8 Months through Al-Othman Consultant and now serving as regular employee of Saudi Electricity Company since Nov 2013) & 5 Years in **National Transmission & Dispatch Company (WAPDA)** Pakistan as Assistant Manager (Operation) & Assistant Manager (Protection)

**Commissioning Engineer (Sub- Station) Mar2008-To Date**  
**Commissioning Services Department (EOA)**  
**(Saudi Electricity Company,KSA)**

Presently I am Serving in Saudi Electricity Company as Commissioning Engineer of Substations (380KV,230KV,132KV, 115KV and 13.8KV).

**Major Projects:**

- 380/115 Dhahran Ownership BSP
- 380/230/115KV Doha BSP Khobar
- 380/115KV Dhahran South ownership Khobar
- 380/115KV South Dhahran BSP
- 380/115KV Al Uqair SS Al Hassa
- 380/115KV Al-Omron BSP Al Hassa
- 380/115KV Dammam Industrial city-3 BSP
- 380/13.8KV Ras Al Khair S/S(SEPCO-III Project)
- 380/230 KV Qurrayah IPP-1 S/S
- 380/230 KV Safaniyah BSP
- 380/230KV WASIT Gas Plant
- 380/132KV SubStation Princess Noura University Riyadh
- 115/13.8KV Fursan GIS Sub-Station Dammam.
- 380/115KV Dhahiyah BSP Dammam.
- 115/13.8KV West of DIE-2 SS Dammam
- 115/13.8KV HIE-2 GIS Sub-Station Al-Hassa.
- 115/13.8KV ARAMCO GOSP Sub-Station Al-Hassa.
- 115/13.8KV Sanaeyah GIS Sub-Station Dammam.
- 115/13.8KV New Arar AIS Sub-Station ARAR.
- 230/115/13.8KV South Hofuf AIS Sub-Station Al-Hassa.
- 115/13.8KV West Khobar GIS Sub-Station
- 115/13.8KV GIS Substation Jubail(19BD)
- 230/34.5KV GIS SUB-2 Jubail-2 Substation(SATORP PROJECT)
- 380/115KV Abu-Hydyria BSP.
- 230/34.5KV GIS SUB-3 Jubail-2 Substation
- 115/13.8KV AS-SHATE S/S Dammam
- 380/115KV South Dhahran S/S
- 132/13.8KV New Rafha S/S
- 115/13.8KV Mutrafia 21BD Jubail S/S
- 115/13.8KV Fakhiriyah S/S Dammam
- 115/13.8KV DIE-6A S/S Dammam

- 230/154KV ATG S/S Sanaeyah Dammam
- 115/13.8KV Al-Khur S/S
- 380/132KV 9030 SS HAIL
- 115/13.8KV Nabia S/S#2
- 115/13.8KV Saihat S/S#2
- 115/13.8KV Khafji SS # 5

### **Responsibility & Achievements:**

- Managing & witnessing of all commissioning activities of New and Existing Sub-Stations, Starting from Pre-Commissioning testing up to energisation of Sub-Station.
- Ability to read and understand all kinds of control and Protection related Drawings of Sub-stations.
- Review of Base design, Detail Design, IFC and As Built Drawings and to suggest modifications as required.
- Factory inspection of Control , Protection Panels and different devices and Equipments.
- Review and implementation of Different Interlock schemes used in Substations
- Worked on Different Kinds of 380,230,115KV GIS Systems and 13.8KV Switchgears(Make Hyundai, Siemens, Areva, Schneider, ABB,Hyosung etc)
- Comprehensive Knowledge of Sub-Stations Schemes(Line Protection, Transformer Protection, Breaker Failure Protection, Bus-Bar Protection, TEE protection, Synchro Check Scheme, T/F's RTCC, ABTS schemes, ACCS and Auto Recloser scheme etc)
- Testing of Line Protection Numerical Line Differential/Distance Relays (Make Siemens, Alstom, ABB & SEL)
- Testing of Transformer Protection Numerical Differential Relays (Make Siemens,Alstom and ABB)
- Testing of Directional and Non-Directional Over current and Earth Fault Relays (Make Siemens, Areva, ABB)
- Testing of Synchro Check Relays, Breaker Failure Relays, Under voltage/Over Voltage Relays, Under Frequency Relays & Automatic Voltage Regulator Relay.
- Secondary & Primary Injection of CT's and VT's.
- Testing of CT's, VT's, Circuit Breakers, Isolators and Earth Switches.

- Testing of Transformers.
- Transformer Differential and REF Stability and Sensitivity Test.
- Bus-Bars Sensitivity and Stability Test
- TEE protection Sensitivity and Stability Test
- Line Stability Test
- Testing of Capacitor Banks and Relays installed for Capacitor Bank Protection
- Functional and Scheme Testing of All protection and control Panels.
- HI-POT Testing of Cables, Switchgears, Circuit Breakers and GIS.
- Testing of SCADA , SOE,DSM, AMR,DCU and TFR systems
- Implementation of Final settings of Relays & End to End Testing
- On-Load Tests after Energization of Sub-Station.
- Trouble shooting of all electrical, control and protection circuits.
- Testing of Digital Power and Energy Meters.
- High voltage test of HV and LV Switchgears and Cables
- Co-ordination with Contractor and consultant to make sure all company procedures and Standards are followed.
- Study of PTS, Prepare daily, weekly and Monthly Progress reports, Testing Schedules and all documentation related with Commissioning.
- Training to junior commissioning Engineers.
- Checking progress of electrical works and over all execution of the project in the light of contract agreement
- Supervision of all pre-commissioning and commissioning activities by following the contract agreement and approved drawings.
- Implementation of systems, procedures and standards required for excellent safety performance, reliability, integrity and ensure that they are executed in highly disciplined manner

**Assistant Engineer (Protection & Instrumentation)** Feb2005-Mar2008  
**220 KV GIS (Gas Insulated Substation) Grid Station University Islamabad  
 Pakistan**

### **Responsibility & Achievements:**

- Supervision and co-ordination of Protection and Maintenance Staff.
- Thorough Knowledge of GIS (Gas Insulated Substation)
- Testing of different relays like:

- Distance Relays:
- 7SA6121, 7SA513 (Siemens) Micromho, Quadramho, Optimho, (made by GEC). REL531, REL316 (ABB),
- Differential Relays:
- RET521, 7UT61, 7UT51, DTH31, MBCH12
- O/C&E/Relays:
- SPAJ 140C, CTU, 7SJ6021, 7SJ6005, MCGG etc.
- Testing of Over voltage, synchrocheck, breakure failure relays etc.
- Operation of testing sets such as Omicron CMC 256-6, Freja RTS21D, XS92A, Universal test set, TTR, C&DF, Meggar, Primary/secondary injection test, Circuit Breaker Analyzer, AC/DC HI-POT Testing sets, DES and SF6 gas test sets etc.
- Trouble shooting of protection system.
- Testing of transformers like C&DF, Meggar, TTR, Short circuit, Ratio tests etc.
- Knowledge of Transformer protection, Line protection, Bus Bar Protection
- Testing of Energy Meters, Current Transformers (CT) and Voltage transformer (VT)
- Participated in the commissioning and testing of 500/220KV Auto Transformers, 220/132KV Power Transformer and 500KV Transmission Lines.
- Operation of Fault Recorder, Event Recorder, Batteries, Battery chargers (Rectifiers)

**Assistant Engineer (Operation)**  
**500 KV Grid Station NTDC Rawat.**

Nov.2002 – Feb 2005

**Responsibility & Achievements:**

- Knowledge of High Voltage & Medium Voltage switchgears.
- Knowledge of Bus Bar schemes, Transformers, Circuit Breakers, Isolators, Earth Switches, Conductors.
- Carrying out of Switching/operations of 500/220/132KV Networks.
- System Control & load Management.
- Management/System Control of interconnected 132KV Substations.
- Knowledge of PTW (permit to work) and operational risks.

- Preparation of switching programs and coordination with field engineers during shutdowns

### **Professional Training:**

- Long Term Protection Training of 32 Weeks at TSG Training center Lahore & Tarbela.
- Induction Training of 06 weeks at WAPDA Engineering Academy Faisalabad.
- Management Training of 06 weeks at WAPDA Staff College Islamabad.
- On job Training of GIS (Gas Insulated Substation).
- 2 weeks Training of Substation Automation System (SAS) Khobar, KSA

### **Computer Skills:**

- Efficient in operating all versions of Windows, MS Office, Internet, Relays Software (DIGSI, PCM, MICOM STUDIO etc.)
- Cisco Certified Network Associate Course (CCNA-2).

### **Professional Membership:**

Associate Member of Pakistan Engineering Council.