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Electrical Maintenance & Protection Engineer

Holds a B. Sc. in Electrical Power & Machines Engineering and a Diploma in electrical power systems. Has over 12 years hands-on experience working in maintenance, operation, commissioning, start-up, testing and protection.

PERSONAL DATA

Nationality : Egyptian
Birth Date : 10/09/1984
Gender : Male
Marital Status : Married
Residence : Mahmoudia

EDUCATION

- : B. Sc. in Electrical Power & Machines Engineering, Tanta University, 2006
- : Diploma in electrical power systems, Faculty of Engineering - KAFR EL-SHEIKH University, 2016-2018

LANGUAGES

Arabic : Native Language
English : Very Good

COMPUTER SKILLS

- : Windows, MS Office, Internet
- : Matlab
- : Electrical programs for simulation, calculation and test as Power-x, EKTS, Automation Studio, PLC programming as Siemens "logo" and Simatic "step 7" software, Dialux and others

TRAINING COURSES AND CERTIFICATIONS

- : Operation of gas turbine, Mitsubishi Heavy Industrial, El-Atf site, Egypt.
- : Operation of steam turbine, Generator & Condenser, Ansaldo Energia, El-Atf site, Egypt.
- : HRSG operation and maintenance – HRSG controls and instrumentation – HRSG water chemistry and safety – NEM B.U. industrial & utility boilers, Hengelo – Netherlands. And also this course in El-Atf site, Egypt.
- : CENTUM CS 3000 R3 Fundamentals for operation, Yokogawa Middle East, El-Atf site, Egypt.
- : Maintenance and operation of horizontal pumps & sump pump, Toshiba, El-Atf site, Egypt.

- : Programmable logic controller from Oil and Gas Skills (Jun. 2012).
- : Matlab (Introduction, programming) from Engineering Faculty.
- : Batteries & chargers – AUX-2 in Network Training Center.
- : Horizontal pumps & vertical sump pumps system in Toshiba (on-shore training).
- : Classic control & PLC SIEMENS S7-200 & SCADA system in Engineering Association.

CHRONOLOGICAL EXPERIENCE RECORD

- Dates** : From Nov. 2013 till now
- Employer** : Middle Delta Electricity Production Company
- Project** : El-Atf Power Station
- Job title** : Electrical Maintenance & Protection Engineer
- Job Description** :
- Installation, tests, periodic maintenance and overhaul of the electrical generator of gas turbine manufactured by MHI capacity of 350 MVA and its accessories.
 - Installation, tests, periodic maintenance and overhaul of the electrical generator of steam turbine manufactured by ANSALDO ENERGIA capacity of 350 MVA and its accessories.
 - Installation, tests, periodic maintenance and overhaul of electrical main power transformers 220/21KV capacity of 350 MVA and auxiliary transformers 21/6.6KV capacity of 32 MVA and electrical transformers 6.3KV/400V capacity of 1.5 MVA manufactured by AREVA.
 - Installation and tests of 220KV GIS Switch yard (One and half circuit breaker) manufactured by SIEMENS type SIEMENS 8 DN9.
 - Installation, tests, and maintenance of the electrical Chargers and UPS manufactured by GUTOR and made tests needed for batteries (measuring density - internal impedance - charging and discharging - efficiency calculation).
 - Installation, tests, and maintenance of electrical motors medium voltage 6.3KV and low voltage 400 V.
 - Installation and electrical tests on the Circuit Breakers with 220KV 6.3KV 400 V (the open/close time analysis - measuring of contact resistance).
 - Installation, tests and periodic maintenance of electrical excitation system with AVR control system for gas and steam turbine type static.
 - Installation, tests and periodic maintenance of switch gear 6.3KV and motor control center (MCC) for 400v rated of the station loads manufactured by Schneider and others distribution panels for low voltage.
 - Tests of digital multifunction protection relays type M-3425 installed on generator of gas unit and type MICOM P345 installed on generator of steam unit.
 - Tests of digital multifunction protection relays type M-3310 installed on excitation system of generator of gas unit and type MICCOM P141 installed on excitation system of generator of steam unit.
 - Tests of digital multifunction protection relays (distance, differential) types 7SA512, 7SA522, 7SA612, 7SD522 and BF 7VK610 and Bay-units types 7SS522, 7SS523 installed on GIS Switch yard and its circuits manufactured by SIEMENS.

- Tests of digital multifunction protection relays installed on 6.3KV Switch gear types SEPAM (S20, S42, M41, M87).
- Tests of digital multifunction protection relays installed on electrical main power transformers 220/21KV and auxiliary transformers 21/6.6KV manufactured by SIEMENS types 7UT613, 7UT635, 7SJ611 and others nonelectrical protective equipments (Local protection devices) installed on main power transformers.
- Tests of digital protection relays installed on IPB type SIEMENS 7SJ602.
- Installation and maintenance and design automatic control circuits by classic control and PLC.
- Use a lot of test and measuring equipments and devices as Omicron CMC 256+, CMC 356, CPC 100, Contact resistance CPM 500, CT Analyzer, Breaker analyzer system TM 1600, Winding resistance WR14, Megger (Insulation resistance), Battery Impedance test BITE2, Grounding resistance C.A 6545, and others.
- Gas turbine up to 250MW with different manufactures likes (GE, MHI) with different control systems and I have training with MHI Stuff.
- Steam turbine up to 250MW with different manufactures likes (GE, Ansaldo) with different control systems and I have training with Ansaldo Stuff.
- (HRSG) heat recovery steam generator which the link between the gas turbine and the steam turbine with different pressure levels up to 135 bar and I have offshore training with Nem Company in Netherlands.
- Different types of pumps (centrifugal, axial, gear).
- Different types of control system (PLC, DCS, SCADA, MKV, DIASYS ...).
- Different types of substations (conventional and GIS) and at different voltage level up to 220KV.
- I can deal with black out (emergency trip (shut down)) and starting the power station from dead point and I did it several times.
- I can deal with hydraulic control systems.
- Different types of valves (motorized, hydraulic, pneumatic).
- Different types of compressors.
- Chemical treatment of water and sampling systems.
- Commissioning of NEM's Heat Recovery Steam Generators attached to Exhaust of Gas Turbines, Steam Blow through, HRSG Tuning and Optimization.

Dates : From Apr. 2013 till Oct. 2013
Employer : SEC Company in Dammam Training Center
Job title : Training Engineer

Dates : From Mar. 2010 till Mar. 2013
Employer : Middle Delta Electricity Production Company
Project : El-Atf Power Station
Job title : Commissioning, Start-up & Operation Engineer
Job Description : OWNER Representative Mechanical Engineer, responsible for:

- Commissioning, Start-up and operation of gas turbine Mitsubishi (2x250MW) (M701F) and it's Related auxiliaries such as Lube oil unit – hydraulic oil unit – purge air compressor – GT by pass damper – fuel gas

compressor – vibration monitoring system – turbine cooling air cooler (TCA) – hydrogen filling system for cooling generator – hydrogen releasing system by using air after using CO2 – CO2 fire fighting system.

- FOR NEM HRSG boilers:
 - Perform the chemical cleaning according to procedures for condensate system & feed water system.
 - Perform the steam blow-out activities for HP steam, HRH & CRH steam, LP steam lines.
- Commissioning, Start-up and operation of Steam turbine ANSALDO (250MW) and it's related auxiliaries such as Lube oil system – hydraulic oil system – jacking oil system – hydrogen filling system for cooling generator – vacuum system – STF condenser – seal oil system.
- Also commissioning and testing for the following systems:
 - Condensate system & condensate pumps.
 - Feed water system (LP, HP/IP) FWP's.
 - Circulating water system & CW pumps.
 - Sump pumps.
- Perform the sequence test for the following systems:
 - Condensate system & condensate pumps.
 - Feed water system (LP, HP/IP) & FWP's.
 - Circulating water system & CW pumps.
 - Service water system.
 - Closed cooling system.
 - Instrument and service air system.
 - Potable water system.
 - Cooling water intake equipment (sluice gate, traveling screen).
- Record the commissioning data for all systems mentioned previously.
- Report and advise the daily activities for all systems mentioned previously.
- Also working as Owner Operation Engineer, responsible for:
 - Conducting all preparation steps of units in field to realize permissive for start-up from control room such as (filling line of water free of bubbles, all safety valves ready, coolers in service, all skids of hydraulic and pneumatic ready, fire fighting ready, all electrical power source ready position of motorized valves in auto mode and ready to work locally, all manual valves before and after control and motorized valves shall be open, etc.
 - Responsible of start-up, operation, remarking alarms of units from control room and solve operation problems.
 - Survey in field for more check and confirmation of safe operation of equipment.

Dates : From Mar. 2007 till Jan. 2010
Project : Mahmoudia Power Station
Job title : Shift Engineer
Job Description :

- Unit start-up and shutdown procedures.
- Monitoring parameters.
- Testing the equipments.
- Isolation and de-isolation procedures.
- Safety work permit system.

- The above mentioned is done for:
 - 8 GE gas turbines 25MW each (MS5001 frame P) and it's related auxiliaries.
 - 8 NEM HRSG.
 - (2x58MW) GE steam turbines and it's related auxiliaries.
- And also done for:
 - Condensate system & condensate pumps.
 - Circulating water system & circulation pumps.
 - Feed water system & pumps.
 - Sump pumps.
- I also watch-ness for the following maintenance sections for steam turbine GE (58MW) Mark V:
 - Make major inspection.
 - Pumps maintenance and balancing.
 - Overall maintenance for condensate pumps malted stages (10 stages), vertical pumps.
 - Maintenance for travel screen and main cooling pumps, hydraulic power unit, air compressors and steam turbine auxiliaries such as ejectors, lubrication system and condenser.

- Field of experience :**
- GAS turbine commissioning, start-up and operation.
 - Operation of gas isolator substation (GIS).
 - Boiler (HRSG) commissioning, start-up and operation.
 - Steam turbine auxiliaries (condenser, vacuum system, tube cleaning system and debris filter) commissioning and start-up.
 - Commissioning and start-up for combined cycle auxiliaries such as (closed cooling system, Condensate system, feed water system and circulating cooling system).
 - Electrical and mechanical skills and working to strict deadlines with technically demanding environments. Major projects of power plant have includes installation for gas turbine, steam turbine, boilers, gas isolator system and related auxiliaries. All aspects of commissioning, start-up and operation for all Electrical and mechanical equipments (static and dynamic) to be according client contract specification, and manufacture requirement. Understanding of P&ID drawing and pipe line installation commissioning, Under & above Ground piping, pumps and valves.
 - Technical ability in the field and in the office.
 - Adaptable, with ability to have valuable input to many aspects of a project.