

Mechanical Maintenance Engineer (Rotating & Static Equipment)

Holds B. Sc. and M. Sc. in Mechanical Power Engineering and has about 12 years hands-on experience working in maintenance and operation at Power Plants.

PERSONAL DATA

Nationality : Egyptian
Birth Date : 13/09/1988
Gender : Male
Marital Status : Single
Residence : El-Behira

EDUCATION

: B. Sc. in Mechanical Power Engineering, Alexandria University, 2010
: M. Sc. in Mechanical Power Engineering, Alexandria University, 2018

LANGUAGES

Arabic : Native Language
English : Very Good
German : Basics

COMPUTER SKILLS

: Windows, MS Office, Internet
: Ansys Fluent (Computational Fluid Dynamics "CFD")
: Solid Works (3D Drawing)
: Process simulation using Aspen HYSYS
: Programmable Logic Controller (PLC)
: Heat Exchanger Design (HTRI Xchanger Suite)
: Engineering Equation Solver (EES)
: MATLAB
: Qbasic (Programming language)
: AUTOCAD
: GetData Graph Digitizer and SigmaPlot (Data import and export)
: DataFit Oakdale Engineering (Curve fitting)

TRAINING COURSES AND CERTIFICATIONS

: International English Language Testing System (IELTS) (Band score 6, CEFR level B2) - Alexandria British Council.

- : Deutsch learning (A1 level) - Guarantee Educational Institute in Tanta.
- : Vibration monitoring and analysis for turbo machinery - Alexandria Petroleum Training Academy (Petro Train).
- : Process simulation using Aspen HYSYS - Alexandria Faculty of Engineering.
- : Programmable Logic Controller (PLC) advanced course - Alexandria JELECOM.
- : International Computer Driving License (ICDL) certificate – Tanta.
- : Refrigeration and air conditioning - Alexandria Industrial Training Council (ITC).
- : Vehicles transmission systems - Alexandria Industrial Training Council (ITC).
- : GE gas turbine operation in combined cycle power stations - Middle Delta Electricity Production Company (MDEPC).
- : Fire and civil defense training.

CHRONOLOGICAL EXPERIENCE RECORD

- Dates** : From 2019 till now
- Employer** : Middle Delta Electricity Production Co. (MDEPC)
- Job title** : Mechanical Maintenance Engineer (Rotating & Static Equipment)
- Job Description** :
- Maintenance of rotating equipment such as: gas turbines (GE), steam turbine (ALSTOM) (i.e. troubleshooting & failure detection), centrifugal pumps and air screw compressors.
 - Maintenance of non-rotating equipment such as: heat recovery steam generators (STF HRSGs (333 t/hr, 132.5 bar and 568 °C)), coolers, valves and pipelines.
 - Preventive, predictive maintenance scheduling, ensuring equipment availability.
 - Supervising the execution of day to day preventive, corrective and routine maintenance.
 - Participating in two shutdowns (minor & major) for the combustion chambers of the gas turbine.
 - Participating in a major shutdown for the steam turbine.
- Employer** : Technet Co.
- Project** : New Damietta Power Station
- Job title** : Commissioning & Operation Engineer (Internship)
- Job Description** :
- Operating of BOP (i.e. pumps and heat exchangers), AC Boilers and ANSALDO steam turbine (250MW).
 - The module consists of:
 - Four AC Boilers (CP-105).
 - One Ansaldo Energia steam turbine (CP-106).
 - BOP systems (CP-118).
 - 220KV switchyard.
- Dates** : From 2013 till 2019
- Employer** : Middle Delta Electricity Production Co. (MDEPC)
- Project** : Nubaria CCGT (2250MW)
- Job title** : Processing Engineer

Job Description : • Operating of two GE gas turbines (250MW), ALSTOM steam turbine (250MW) and two STF HRSGs (333 t/hr, 132.5 bar and 568 °C). In addition to other auxiliaries such as pump house, heat exchangers and switch gear and yard.

- The module consists of:
 - Two GE gas turbines (250MW), MS 9001FA type.
 - Two STF horizontal heat recovery steam generators.
 - One ALSTOM steam turbine (250MW) with high, intermediate and low steam pressures.
 - Medium (6.3KV) and low voltage (400 v) switchgear.
 - 500KV switchyard.

Dates : From 2012 till 2013

Employer : Middle Delta Electricity Production Co. (MDEPC)

Project : Nubaria CCPP (2250MW)

Job title : Operation Engineer

Job Description : • Operating of two Siemens gas turbines (250MW), Mitsubishi steam turbine (250MW) and two ALSTOM HRSGs via DCS monitors. In addition to other auxiliaries such as pump house, heat exchangers and switch gear and yard.

- The module consists of:
 - Two SIEMENS gas turbines (250MW) V94.3A type.
 - Two ALSTOM horizontal heat recovery steam generators.
 - One MITSUBISHI steam turbine (250MW) with high, intermediate and low steam pressures.

Dates : From 2010 till 2012

Employer : Johnson Controls - Alexandria

Job title : HVAC Engineer

Job Description : Construction and Maintenance of Heat, Ventilation and Air Conditioning Systems.

Skills:

- Attending combustion chambers overhaul in GE gas turbines.
- Attending an overhaul for IP, LP blades and combined stop and control valves check in ALSTOM steam turbine.
- Attending the chemical cleaning for the cooling water cycle and boiler lay up.

Research:

- Alexandria Engineering Journal (AEJ) (Produced and Hosted by Elsevier, Impact Factor1.5):
 - The first paper with the title "Developing Laminar Flow in Curved Semi-Circular Ducts" was accepted to be published in March 2018.
 - Paper abstract: Flow and heat transfer in curved pipes is one of the most attractive research fields of thermofluids mechanics. Curved fluid flow passages are common in most technological systems involving cooling of gas turbine blades, compact heat exchangers, cooling of chemical reactors, nuclear reactors and smart computer

processors. Several stages of development have been done to improve this cooling process in toric and helical geometries. Moreover, several correlations for hydrodynamic entrance length and friction factor have been deduced.

- Keywords: Curved, Toroidal, Friction Factor, Semi-Circular Duct, Laminar, Dean.
- 13th International Conference of Fluid Dynamics (ICFD13) 21 - 22 Dec. 2018, Steigenberger Hotel El Tahrir, Cairo:
 - The second paper with the title "Laminar Heat Transfer Flow in Curved Semi- Circular Ducts with Uniform Wall Temperature" was accepted to be published in October 2018.
 - Paper abstract: Laminar flow heat transfer in curved semi-circular ducts subjected to constant wall temperature has been studied numerically. The present study considers the case in which the duct is evolved around cylindrical vessel where the flat side of the duct is attached to the cylinder surface. The effects of Reynolds number ($100 < Re < 1500$), Prandtl number ($0.7 < Pr < 7$) and curvature ratio ($1/20 < \delta < 1/8$) have been investigated in order to explore their effect on the hydrodynamic and thermal performance of coiled heat exchanger of semi-circular ducts.
 - Keywords: Toroidal, Curved, Semi-Circular, Fully developed, Laminar, Forced Convection, Dean number, Nusselt, Prandtl, Fluent.