

Ref: DMC/4082 /01/19

Date: 13/01/2019

OCCIDENTAL OMAN INC.
Sultanate of Oman

Subject: In-House Technical Proposal for BOILERS: OPERATION, MAINTENANCE & TROUBLESHOOTING

Dear Sir/Madam,

Thank you for the enquiry for in-house training on the subject trainings. Further to that we would like to submit the proposal for the same.

We are dedicated to deliver customized technical training at your work place. Deliver professional and quality training is our motto. We support to strengthen and update the knowledge and skills of staff in your organization through professional training and development methodologies.

We are committed to provide very Professional & Internationally Certified Instructors / Trainers who are leaders in their fields of expertise. We select only qualified and dedicated Instructors / Trainers to deliver the trainings. We also evaluate the instructors before and after training planned. **Our Instructors are eminent Instructors with high intellectual powers, highly qualified, experienced in Major Industries, and experts in delivering this type of trainings delivered similar trainings to most of the Major Oil & Gas, Power Sector Companies. We are submitting the very best cost effective proposal for you without compromising on the quality.**

This proposal consists of the following documents:-

1. **Company Introduction, Overview and Client list, Organization Chart, Quality Management System, HSE policy, Experience, Previous Projects**
2. **Training Overview- Technical Proposal**
3. **Instructor's resumes**

Kindly note that this proposal is subject to mutual final affirmation and planning for both, **Define Management Consultancy & Training** and **OCCIDENTAL OMAN INC.**

Your early response is highly appreciated which will facilitate to arrange the work in a proper way. If you have any queries on this please feel free to revert back.

Thanks and best regards, www.definettraining.com



Ms. Mahjabeen Ali
Training Officer
Mobile No.: +971 50 3264539



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ABU DHABI, U.A.E

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F +971 2 6275344

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1. COMPANY INTRODUCTION & OVERVIEW

DEFINE Management Consultancy and Training is a reputed management consultants and training company based in Abu Dhabi. The firm has fully functional office in Abu Dhabi, UAE. **DEFINE** is specialized in providing advanced technical training and tailored management solutions to companies in the Oil & Natural Gas, Power, Petrochemicals and other major industries.

The driving principle of **DEFINE** is to redefine professionalism by providing customized, result oriented and cost effective training methodologies and management inputs so that the client company would realize its full potential and advance towards better accomplishments.

MISSION & VISION

The **Mission** of **DEFINE** Management Consultancy and Training shall be:

1. To provide personnel empowerment to the economy sector;
2. To deliver comprehensive and leading edge training in Oil & Gas, Power and Petrochemical industries, as well as the business sector, to Gulf Cooperation Council (GCC) members and Africa; and
3. To design, develop and execute sound programmes in line with the requirements of the concerned organisation.

Vision Statement:

DEFINE envisions to be a world-leading technical training organisation with global presence, by leveraging the power of right knowledge, right skills and right competency. To achieve this, our motto is “to inculcate mastery and quality” in every service that we deliver.

QUALITY MANAGEMENT SYSTEM

ISO CERTIFIED

DEFINE Management Consultancy & Training is an ISO 9001-2015 Certified Company by Gabriel Registrar

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1. We shall satisfy the training needs of our clients and try to exceed their expectation through our Quality Management System.
2. We shall achieve this Policy through the objectives and targets set for various functions.

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3. We shall ensure symbiotic relationship with our Trainers and Faculty Members through effective control of outsourcing.

ACCREDITATIONS & OTHER QUALIFICATIONS

PMI ACCREDITED approved training provider

IADC ACCREDITED approved training provider

AACE ACCREDITED approved training provider



ACTVET APPROVED & LICENSED TRAINING PROVIDER

ACTVET

Abu Dhabi Centre for
Technical and Vocational
Education and Training
مركز أبوظبي
للتعليم والتدريب
التقني والمهني

HSE POLICY



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HSE POLICY

DEFINÉ Management Consultancy & Training are committed to provide a safe and healthy working and learning environment to its employees, students and visitors. **DEFINÉ** Management Consultancy & Training will strive to improve our safety and environment performance continuously by adhering to the following policies.

This policy applies to all employees, students, visitors and contractors of **DEFINÉ** Management Consultancy & Training

DEFINÉ Management Consultancy & Training will maintain and promote a safe and healthy working and learning environment by implementing health and safety programs and procedures that meet or exceed the requirements of the Occupational Health and Safety Act and its Regulations.

DEFINÉ Management Consultancy & Training Managers, administrators and other individuals who are responsible for directing the work of others are responsible for the health and safety of all individuals under their direction and the workplaces under their charge.

All employees, contractors, students and visitors shall comply with all relevant legislation and all **DEFINÉ** Management Consultancy & Training policies and procedures regarding health and safety.

Every employee shall use safe work practices on all assignments, as governed by **DEFINÉ** Management Consultancy & Training policies and procedures. It is the responsibility of every employee to report unsafe conditions and workplace injuries to their supervisors.

Our HSE Policy will be reviewed periodically to ensure its continuing suitability.

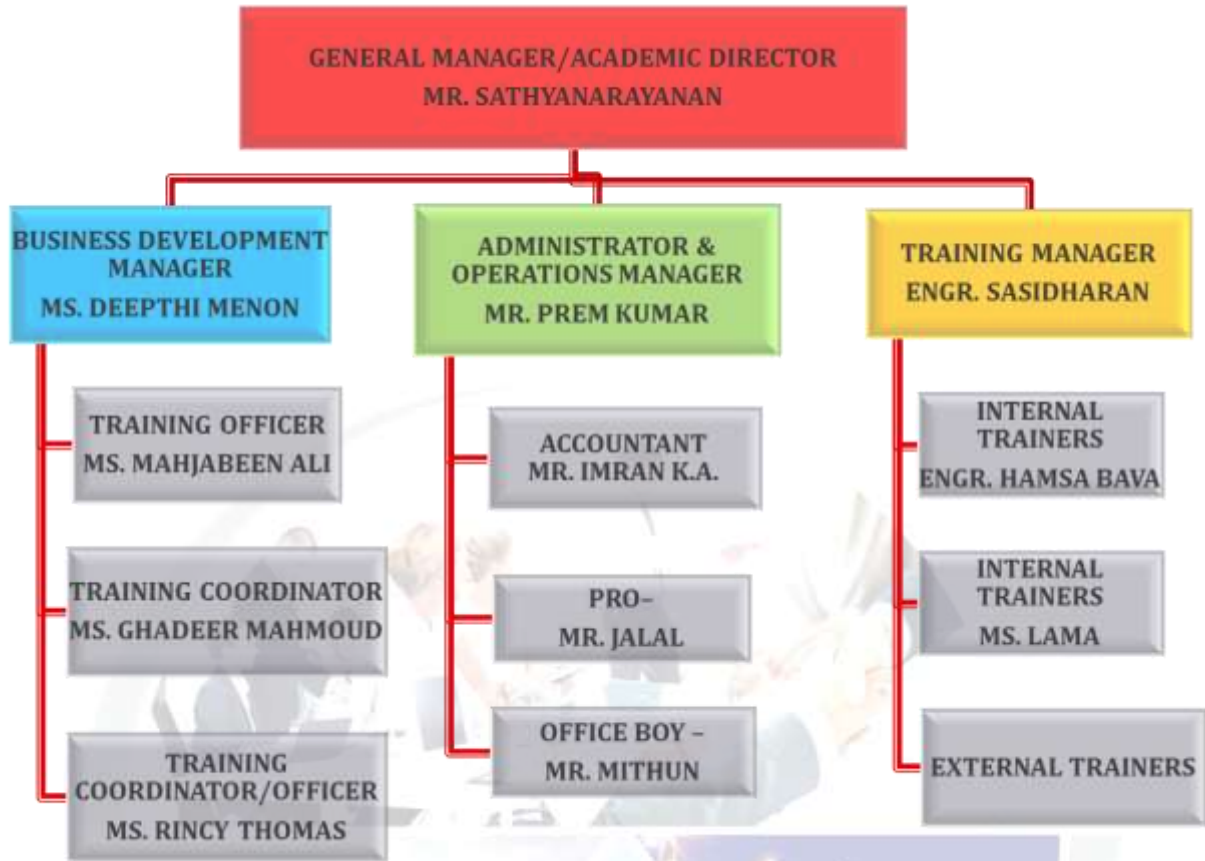
Thank you for your support as we work together to make SAFETY a priority!

Sathyanarayanan
Academic Director
January, 2016



ORGANIZATION CHART WITH NAMES

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EXPERIENCE

"Define Management Consultancy & Training" **Under Abu Dhabi Ministry of Education LICENSED with Abu Dhabi Center for Technical & Vocational Education Training (ACTVET)** is one of the leading training provider. We are in the market for last **12 years**, have been arranging and conducting Highly Professional Short Technical & Management Trainings for our Oil & Gas/ Petrochemical/ Power Sectors clients in Middle East & Africa & Europe. Our public trainings Programs hold at 5 Star Hotels in UAE, QATAR, BAHRAIN, SAUDI ARABIA, KUWAIT, EUROPE and FAR EAST Countries. We are capable of conducting wherever the client requests. We do arrange in-house trainings which will be conducted at client's premises. We have highly Professional & Internationally Certified instructors and Trainers who are leaders in their fields of Expertise & are Industrially Experienced to deliver technical & management training.

We are a registered Vendor with almost all the Major Oil & Gas, Petrochemical & Power Industries in Middles East, Africa & Europe.

COMPANY PAST EXPERIENCE IN TRAINING

<u>MIDDLE EAST</u>		
#	CLIENTS NAME	PROGRAM TITLE

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1.	ADNOC Gas Processing	<p>Pumps Maintenance & Mechanical Seals by Engr. Ahmed Refaey in November 2018, Maintenance of Valves and Testing by Engr. Mohammed Anwar in November 2018, UPS & Battery Systems, Transformer Testing by Dr.Fawzy, Hazard Identification Training by Engr. Zaki in 2018 Engineering Drawings, Codes & Standards by Engr. Gamal, Corrosion Control training by Dr. N. John Paul, Problem Solving in Chemical Analysis Training, Centrifugal Compressor Operation & Maintenance in March 2017 by Dr. Khaled Abdel Aziz Advanced Gas Chromatography, Good Laboratory Practice & Uncertainty Measures Trainings in 2017 by Dr. Ramsey Jadim, Centrifugal Compressor Operation & Maintenance in January 2016, Centrifugal Compressor, Maintenance & Troubleshooting in November 2015 by Dr. Khaled Abdel Aziz</p>
2.	KUWAIT PETROLEUM CORPORATION (KPC), KUWAIT	<p>Gas Conditioning Intermediate by Engr. HossamAsaad in December 2016, Gas Conditioning Foundations by Engr. Maurice Hanna in December 2016, Maintenance of Centrifugal Pumps in the year 2016 (3 sessions) By Dr. Nasser Zoghaib Materials & Inspection (Advanced) 2012, Materials Selection & Properties. In Jan & Feb 2012, 2013 By Dr. Paul , Corrosion Control in 2013, 2015, 2017 Corrosion & Fouling Management Feb 2016 By Dr. Paul, Materials Inspection in Oct 2016 by Dr. Paul, Perform Root Cause Analysis for Process Upset in the year 2016 (2 sessions) By Mr. Maurice Hanna, Operation and Maintenance of Variable Speed Drives (KOC) in the year 2016 (2 sessions) By Dr.Fawzy</p>
3.	KOC	<p>Perform Trouble Shooting Of Gas Processing Units in July 2018 by Engr. Hamsa Bava, Gas Conditioning & Processing in January 2017, Centrifugal Compressors Maintenance & Failure Analysis in Jan 2017 Prepare RCA For Basic Incident And Take Corrective Action. In June 2014 by Dr. Khaled Preventive Maintenance and Condition Monitoring.</p>

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		In Oct 2014 By Dr. Khaled, Perform Detailed RCA, Take Corrective Actions, Liaise With Teams. In May 2013 By Dr. Raouf
4.	ADNOC On Shore	Offshore Steel Structures by Dr. Ibrahim El Reedy in 2018, Value Engineering 5 sessions in 2016, 2017 by Mr. Alok Kumar Ghosal
5.	ADCO	Machinery Failure Analysis & Prevention. In Dec 2015 By Dr. Khaled
6.	ADNOC Refining TAKREER	Behavioural Safety, TAMCOHV & LV Switchgears & Breakers, Engineering Electronic Document System (EDMS), Refinery Operations, Maintenance Auditing and Continuous Improvement Trainings in 2018 Certified Boiler Operators in May 2016 by Engr. Hamsa Bava, "Maintenance Work Estimation Skills. In Sept 2016 By Mr. Ashraf Eshra. (2 Sessions) Certified Maintenance Planner. In Sept 2015 By Mr. Ashraf Eshra (2 Sessions)
7.	ADMAOPCO	Flare Relief & Blow Down, Managing Efficient Shutdown & Turnaround, Hazard Identification & HAZOP Study Course, Subsea Pipeline, Power Systems and protection with modern Technology, FLARE & OVER PRESSURE PROTECTION Trainings in 2012, 2013, 2015 by Dr. Nasser, Dr. Fawzy, Dr. El Reedy Inspection and maintenance of subsea pipelines and offshore Structure
8.	FERTIL	COMPRESSORS & TURBINE OPERATIONS TRAINING , API 580 Risk Based Inspection Procedure , Process Plant Troubleshooting , CIEH Level 3 Fire Risk Assessment , Process Plant Shutdown, Turnaround & Troubleshooting , ELECTRICAL PROTECTION SYSTEM Trainings in 2013, 2014, 2015, 2016, 2017
9.	DEWA	Modern Electrical Power Systems , Mechanical Equipment, Pipeline & Piping Inspection, Waste & Environmental Management, PROTECTION OF ELECTRICAL POWER SYSTEM, MV, HV and EHV Switchgear Testing & Commissioning, PLC & SCADA Systems, Process Plant Start Up Commission & Troubleshooting several sessions of Trainings in 2009, 2010, 2011, 2014, 2015, 2018
10.	BOROUGE (ADNOC), UAE	Water Analysis In Petroleum Industry , Engineering Codes & Standards, LVHVMV , Pressure Vessel Inspection, API 510: Pressure Vessel Inspection Code

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		2011, 2012, 2013
11.	OMIFCO, OMAN	Boiler Design, Operation & Maintenance Technology in June 2014, Boiler Automation & Control In April 2014, Basic Plant Production Safety Maintenance Emergency Handling , Advance Good Laboratory Practice & Uncertainty Measurement, CO2 Removal System , Centrifugal Compressors & Turbines Operation, Maintenance & Failure Analysis, Corrosion Control in Fertilizer Industries 2010, 2011, 2014, 2015, 2018
12.	RASGAS, QATAR	Metallurgy for Non Metallurgist, Metallurgy for LNG Industry
13.	ADGAS (ADNOC), UAE	Corrosion Prevention in Oil & Gas Industry, Power distribution Cables
14.	ZADCO (ADNOC), UAE	Metallurgy for Non Metallurgist
15.	BANAGAS, BAHRAIN	Gas Turbine and Compressor Operation, Maintenance and Troubleshooting
16.	DEWA (Dubai Water & Electricity),	PLC & SCADA for automation & process control
17.	QATAR PETROLEUM, QATAR	Process Trouble Shooting
18.	SAUDI ARAMCO, KSA	Fault Analysis In Electrical Power Systems And Networks

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INTERNATIONAL EXPERIENCE

	<u>INTERNATIONAL EXPERIENCE</u>
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#	CLIENTS NAME	PROGRAM TITLE
1.	GUSTO BV (SBM OFFSHORE), NETHERLANDS	Power System & Protective Relaying
2.	MELLITAH OIL & GAS B.V. LIBYA	Inspection Maintenance of Subsea Pipelines & Offshore Structure
3.	PETRODAR, SUDAN	ISPS (International Ship & Port Facility Safety)
4.	ADOC, JAPAN	Accident & Incident Investigation – Root Cause Analysis
5.	BOB CPP, INDONESIA	Hydrocarbon Production & Operation (Oil Exploration, Drilling, Well Completion & Testing, Reservoir Management & Artificial Lift)

CLIENT LIST

DEFINE has strong presence in the UAE, Saudi Arabia, Bahrain, Qatar, Oman, Kuwait, Indonesia, Europe and Africa. The company maintains a cordial relationship with all its clients.

UAE

- ABU DHABI GAS LIQUEFACTION COMPANY LTD. - ADGAS
- ADCO ABU DHABI COMPANY FOR ONSHORE OIL OPERATIONS
- ADNOC -ABU DHABI NATIONAL OIL COMPANY
- TAKREER
- ADNOC DISTRIBUTION
- ADMA-OPCO ABU DHABI MARINE OPERATING COMPANY (ADMA-OPCO)
- GASCO
- ZADCO
- FERTIL
- EMIRATES STEEL INDUSTRIES
- NPCC
- ADWEA
- DEPARTMENT OF MUNICIPAL AFFAIRS IN ABU DHABI
- NATIONAL MARINE DREDGING CO
- ADAT – ABU DHABI AIRPORT TECHNOLOGIES
- DEWA
- EMARAT
- DUBAI ALUMINIUM COMPANY LIMITED (DUBAL)

QATAR

- QATAR PETROLEUM

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- QAFCO
- QATAR WATER & ELECTRICITY
- RAS GAS
- QATAR GAS
- QAPCO
- QAFAC

KUWAIT

- Kuwait Petroleum Corporation (KPC)
- KNPC
- KOC
- SAUDI ARABIAN CHEVRON
- KUWAIT WATER & ELECTRICITY

OMAN

- MB PETROLEUM
- PDO
- OMAN REFINERY
- OMIFCO
- DUQM REFINERY

SAUDI ARABIA

- SABIC
- SAUDI ARAMCO
- MARAFIQ
- SAUDI ELECTRICITY CO.

BAHRAIN

- BANANGAS BAHRAIN NATIONAL GAS COMPANY (BANAGAS)
- BAPCO
- BAHRAIN WATER & ELECTRICITY
- ASRY
- ALBA

EUROPE

- GUSTO B.V IN NETHERLANDS

SUDAN

- GNPOC
- PDOCPETRODAR OPERATING COMPANY
- WNPOC

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LIBYA

- AKAKUS OIL OPERATIONS COMPANY
- VERENEX ENERGY
- WINTERSHALL

INDONESIA

- BOB PT. BSP

NIGERIA

- CHEVRON NIGERIA
- SAHARA ENERGY

SOMALIA

- PUNTLAND PETROLEUM & MINERALS



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2. TRAINING OVERVIEW (TECHNICAL PROPOSAL)

Training Title: **BOILERS: OPERATION, MAINTENANCE & TROUBLESHOOTING**
 Duration: **5 DAYS**
 Date: **TBA**
 No. of Candidates: **20**
 Venue: **TBA**
 Language: **English**
 Material Language: **English (Very useful and impressive material with illustrations and references will be given)**

TRAINING CERTIFICATE

DEFINE Management Consultancy & Training Certificate of course completion will be issued to all attendees.

Course Title:	:	BOILER OPERATIONS & MAINTENANCE
Discipline:	:	OPERATION SPECIALIZED TRAINING
Scheduled Date:	:	TBA
Proposed Instructor Names:	:	DR. RASHAD TAHAKHATER DR. RAOUF MESSIH ENGR. HAMSA BAVA ENGR. AHMED REFAEY

WHO SHOULD ATTEND?

Boiler Inspectors
 Steam Plant Operators
 Maintenance Engineers / Managers
 Operation Managers
 Safety Officers
 Environmental Officers
 Boiler Design Engineers

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COURSE OVERVIEW – INTRODUCTION/DESCRIPTION:

The course is broadly designed to incorporate all issues related to boilers starting with selecting the best design aspects, installation, and operation and boiler maintenance. Other issues are included within the course such as legal requirements and regulations, environmental and safety aspects, energy consumption, boiler efficiency and operating a treatment plant.

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COURSE OBJECTIVES:

The overall objective of this course is to make the recipient more knowledgeable of what a boiler is and how boiler design, operates and what ancillary equipment is required to support its operation

Upon the successful completion of this course, participants will be able to:-

- Apply their knowledge of the different boiler chemical treatment technologies to determine whether they are employing best practices in their boiler system and protecting critical assets.
- Justify the importance of well-designed and operated pre-treatment systems upstream of their boiler plant to increase overall plant reliability and lower operating costs.
- Interpret industry-wide guidelines and monitor key performance indicators in pre-boiler, boiler and post-boiler systems.
- Determine boiler cycles of concentration and improve chemical management
- Recognize ways to troubleshoot boiler feed water, boiler and steam purity problems.
- Identify invaluable insights on how to design for success in new boiler plant projects.
- The fundamentals types of boilers and their construction.
- Boiler components and know their specific functions.
- The fundamentals of boiler operations.
- Boilers Commissioning, Start-up and shutdown boilers.
- Boilers Operation at safe and proper pressures and temperatures.
- Boiler water treatment
- The major dangers associated with boilers and how to avoid boiler accident and explosions.
- The importance of Codes and Standards in Boiler design, construction and operation

TRAINING METHODOLOGY

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

All presentations are made in excellent colourful power point. Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises

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- 20% Videos & General Discussions

COURSE OUTLINES

DAY 1:

Introduction to Boilers and Steam Generating Systems

Boiler Types and Configurations

- Fire tube Boilers
- Water tube Boilers
- High Pressure Boilers
- Low Pressure Boilers
- Waste heat Boilers
- Package Boiler

Fundamentals of Combustion and Heat transfer

- Theory of Combustion
- Thermodynamics
- Steam Tables

Group Discussion & Class Exercise

DAY 2:

Burner Operation and Control

- Gas Train
- Oil Train
- Standard Burner
- High Turndown Burner
- Burner Controls

Boiler Operation and Testing / Standard Operating Procedures

- Start-Up and Shut-Down
- Normal Operation
- Boiler Blow-downs
- Water Quality Analysis and Treatment
- Valve Types
- Safety Valves
- Low Water Cut-off Controls

Group Discussion & Class Exercise

DAY 3:

Boiler Room Safety

- Boiler Accidents

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- Cause and Effect

Cause and Effect Case Study

- Safety Valves
- Confined Spaces
- Lockout/Tag-out

Operation Standards

- ASME Codes
- NFPA Codes
- NBIC Code

Controls and Safety Devices for Automatically Fired Boilers

- Water Level Control
- Temperature Control
- Pressure Control
- Fuel Trains

Inspection and Maintenance of Commercial and Industrial Boilers

- Fireside
- Waterside
- Burner
- Auxiliary Equipment

Group Discussion & Class Exercise

DAY 4

Boiler and Burner Efficiency

- Heat Exchanger Efficiency
- Combustion Efficiency
- Efficiency Tests
- Condensate Return
- Steam Traps

Troubleshooting

- Burner
- Controls
- Additional

Corrosion Control

- Process of corrosion
- Dissolved oxygen
- Feed tank design
- Passivation
- Selection of chemical corrosion inhibitors and oxygen scavengers for effective boiler water treatment

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Group Discussion & Class Exercise

DAY 5:

Fundamentals of Feed Water Treatment and Chemicals

- Pre-treatment/de-aeration
- Oxygen scavenging
- Water conditioning
- Boiler blow-down
- Steam/condensate treatment
- Control
- Standards

Scale Control

- Water hardness
- Common scales and deposits
- Effects of scale

Scale Prevention

- Elimination
- Precipitation
- Modification
- Blow-down

Post Course Test

NOTE:

- **Pre & Post Tests will be conducted**
- **Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.**

Note: The Course Manual will contain the Handouts as reference book as well as the Presentation Slides which will be used during the Course and supported by the Handouts.

3. TRAINERS PROFILES www.definettraining.com

PROFILE OF 1st INSTRUCTOR

DR. MOHD RASHAD TAHAKHATER

PERSONAL DETAILS

Prof.Dr.Mohammed Rashad, Ph.D., M.Sc., B.Sc., is senior mechanical instructor with practical and teaching experience in combustion, internal combustion engines, reacting recirculating flows, heat transfer, boiler tune up & measurements and predictions of the flow through turbo machines. Selection, operation, design and maintenance of boilers and turbomachinery.

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He has industrial and consulting experience in many industrial companies, power generation companies, governmental bodies about rationalization of combustion systems and energy consumptions, sizing and selection of process industrial equipment, design of steam, condensate and air distribution systems, rehabilitation activities of boilers; feed water treatment units, pumps and turbines.

He has conducted hundreds of training courses on. measurement standards, bearings, lubrication, gear boxes, valves, frames 5 & 6 operation and maintenance, boilers, mechanical seals, dry gas seals, pumps, compressors, maintenance planning, data analysis techniques, water chemistry, steam generation, fired process heater, machinery failure analysis, gas turbines, combustion technology in boilers and industrial furnaces, heat exchangers, fire alarm and firefighting systems, oil and gas burners, natural gas application in industrial combustion systems, performance of internal combustion engines and pollution abatement.

Dr, Rashad has participated in many conferences and published many scientific publications and he is active member in many professional engineering bodies and scientific research bodies.

He has Ph.D., M.Sc. and B.Sc. degrees of science in mechanical engineering.

Valid Credential Certifications

Institution	Slovak Technical University of Bratislava, Czechoslovakia, Faculty of Mechanical Engineering
Date	April 1980 to Nov. 1984
Degree	Ph.D.
Institution	Cairo University, Egypt, Mechanical Engineering, 1978
Date	Oct. 1975 to Nov. 1978
Degree	M.Sc.
Institution	Cairo University, Egypt, Mechanical Engineering, 1975.
Date	Sept.1970 to July 1975
Degree	B.Sc.

PROFESSIONAL EXPERIENCES

ACADEMIC EXPERIENCE

- October 2003 to date:

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Professor, Mechanical Engineering Department, Cairo University, Egypt.

- March 1992 October 2003:

Associate Professor, Mechanical Engineering Department, Cairo University, Egypt.

- January 1991 to March 1993

Visiting Professor, Mechanical Engineering Department, University of Maryland, USA.

- Nov. 1984 to March 1992:

Assistant Professor, Mechanical Engineering Department, Cairo University, Egypt.

- April 1980 to Nov. 1984:

Research assistant, Ph.D. Student, Slovak Technical University of Bratislava, Czechoslovakia.

- Nov. 1978 to April 1980:

Teaching assistant, Mechanical Engineering Department, Cairo University, Egypt.

- Oct. 1975 to Nov. 1978:

Demonstrator, Mechanical Engineering Department, Cairo University, Egypt.

COURSE TAUGHT FOR UNDERGRADUATE AND GRADUATE

Experimental and numerical techniques, thermodynamics, heat transfer, internal combustion engines (Diesel and petrol engines), gas dynamic, radiation in furnaces, industrial instrumentation, process control, steam power plants, environmental pollution and turbo-machinery.

INDUSTRIAL EXPERIENCE AND CONSULTATIONS:

The consultation activities in WASCO and Gupco Oil and gas companies and factories include the following aspects.

- Rationalization of combustion systems and energy consumptions.
- Sizing and selection of process industrial equipment
- Design of steam, condensate and air distribution systems
- Rehabilitation activities of boilers, feed water treatment units, pumps and turbines.
- Preparation of technical specifications for tender documents.
- Follow up of maintenance activities.

Consultation work supported by the following factories and industrial institutions:

- Sugar Company and Integrated Industries in the field of rationalization of energy, boiler tuning, baggas dryer with required firefighting and protection systems, boiler and Diesel engines maintenance. (1994- to date).
- Cogeneration in Sugar Company (1988-1990). This work was supported by Organization for Energy Conservation and Planning.

- Eastern company in the field power consuming equipment, Diesel engines, steam and condensate return, steam traps selection, compressors, pumps, and tobacco dryers. (1994- to date).
- Rdimpex for Local and International Services in the field of Insulation and testing a new boiler and steam distribution lines, and condensate return.
- Data base for boilers in Egypt (1991 – 1992). This work was supported by the Organization for Energy Conservation and Planning.
- Performing tests on boilers of Cairo power stations, these experiments were made to rationalize fuel consumption in these powers (1978-1980), (1987-1988) and (1987-1988). This work was supported by Ministry of electricity and Energy Research Center in Cairo University.
- Electricity Authority, (1978 – 1995) and (2006- to date).
- Organization for Energy Planning (OEP) Egypt, 1988 – 1998.
- General Company for Cairo Bakeries, 1990 – 1994.
- Egyptian Environmental Affairs Agency (EEAA), 1997 – to date.

TRAINING EXPERIENCES

COURSES DELIVERED TO OIL AND GAS COMPANIES IN UAE

- Static and Dynamic Measurement Standards Regulations, Equipment and Procedures, Dubai, UAE, TÜV MIDDLE EAST MEMBER OF TÜV NORD GROUP, 16 - 20 October 2016.
- Gas Turbines Operations, Maintenance & Inspection, UAE, GASCO Organized by INISIGNIA, 15 November -19 November 2015
- Bearings, Lubrication and Gear Boxes, UAE, GASCO Organized by INISIGNIA, 18-January-2015 to 22-January -2015
- Valves Types, Operation and Application , UAE, GASCO/Organized by INISIGNIA/, 23-27 November 2014
- Valves Types, Operation and Application , UAE, GASCO/Organized by INISIGNIA/, 11-15 May 2014
- Frames 5 & 6 Operation and maintenance, UAE, GASCO/Organized by INISIGNIA/, 09-13 March 2014
- Boiler Operation Certificate, UAE, Tissue Manufacturing company, Abu Dhabi, TÜV MIDDLE EAST MEMBER OF TÜV NORD GROUP, 20th to 22nd of January, 2014
- Mechanical Seals and Dry Seals (John Crane), UAE, GASCO/Organized by INISIGNIA/, 22-26 December 2013
- Pumps and Compressors Maintenance, UAE, ADCO Organized by INISIGNIA, 24-November -2013 to 27 November -2013

- Maintenance Planning and Control, UAE, ADCO/Organized by INISIGNIA /, 8-November -2013 to 11November -2013
- Bearings, Lubrication and Gear Boxes, UAE, GASCO Organized by INISIGNIA, 20-October-2013 to 24-October-2013
- Pumps Operation Maintenance & Troubleshooting, TakreerRuwaisU.A.E .Organized by OCCS, 02-04 July, 2013 and 6-8 October 2013.
- Data Analysis Techniques for Engineer, Doha, Qatar ,TÜVMIDDLEEASTMEMBER OF TÜV NORD GROUP,23-27 June, 2013.
- Compressor Control System, TakrirRuwaisU.A.E organized by OCCS, 2-4 June, 2013
- Fired Process Heater Operation, Control & Troubleshooting, GASCO/INISIGNIA/Abu Dhabi, UAE, 11 Nov. 2012.
- Machinery Failure Analysis & Prevention, GASCO/INISIGNIA/Abu Dhabi, UAE, 16 Sept. 2012.
- Burner Management System, ADGAS-Das Island Dubai, UAE organized by Insignia Seminars & Conferences, 03-June 2012.
- Steam Generator Operation & Troubleshooting, (KJO) Aramco, Al-Khafgi, KSA, 25April 2012.
- Basic Instrumentation and Process Control, Zakum Co., Abu Dhabi, UAE, 01May 2011
- Plant-Gas Turbine, Steam Power Plant, Co-Generation Combined Cycle Plant, in Dubai, UAE organized by TÜV MIDDLE EASTMEMBER OF TÜV NORD GROUP , (21-25 November 2010)
- Oil and Gas Process Instrumentation: Measurement and Sensors, in Dubai, UAE organized by TÜV MIDDLE EASTMEMBER OF TÜV NORD GROUP , (19-23 September 2010)
- Steam & Gas Turbine Plants- Design, Performance & Monitoring, in Dubai, UAE organized by TÜV MIDDLE EASTMEMBER OF TÜV NORD GROUP , (07-11 August 2010)
- Boiler Operation Maintenance & Water Treatment Technology in-house training Ruwais, U.A.E organized by Define Management Consultants Abu Dhabi, U.A.E (11-15/5/2008)

COURSES DELIVERED TO OIL AND GAS COMPANIES IN THE REGION

- Combustion Techniques in Furnaces, Boilers And Unit Efficiencies, Doha, Qatar, ORYX GTL, MSTC, 7 - 11 June 2015.
- Static and Dynamic Measurement Standards Regulations, Equipment and Procedures, Doha, Qatar,TÜV MIDDLE EASTMEMBER OF TÜV NORD GROUP,26 - 30 April 2015.

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- Data Analysis Techniques for Engineer, Doha, Qatar, TÜV MIDDLE EAST MEMBER OF TÜV NORD GROUP, 27-31 October, 2013.
- Data Analysis Techniques for Engineer, Doha, Qatar, TÜV MIDDLE EAST MEMBER OF TÜV NORD GROUP, 23-27 June, 2013.
- Water Chemistry, Steam Generation, and Boiler Water Treatment, Istanbul, Turkey TÜV MIDDLE EAST MEMBER OF TÜV NORD GROUP , 24-28 February 2013
- Steam Generator Operation & Troubleshooting, (KJO) Aramco, Al-Khafgi, KSA, 25 April 2012.
- Boiler and Steam Generation System, in-house training, KNPC (Kuwait National Petroleum Company) and PTC (Petroleum training center, Kuwait) organized by ESG (Engineering Systems Group, K.S.C.C (05-08/05/2008)
- Boiler and Steam Generation System, in-house training, PTC (Petroleum training center, Kuwait) organized by ESG (Engineering Systems Group, K.S.C.C (06-09/05/2007)

COURSES DELIVERED TO OIL AND GAS COMPANIES WORLDWIDE

Conducted over 100 Short Intensive Courses for Engineers held at Cairo University and on sites. These courses cover the following aspects:

Courses

- Process plant equipment sizing and selection.
- Performance evaluation of utility boiler
- Boiler testing, efficient operation and maintenance.
- Combustion technology in boilers and industrial furnaces.
- Failure and explosions of steam boilers.
- Heat exchangers design and maintenance.
- Gas turbines design, control and selection.
- Gas turbines: operation and maintenance.
- Air and gas compressors.
- Pump stations.
- Fire alarm and firefighting systems.
- Steam systems; components, operation and performance rationalization.
- Oil and gas burners.
- Natural gas application in industrial combustion systems.
- Performance of internal combustion engines.
- Pollution abatement.

LANGUAGES

Language	Reading	Speaking	Writing
Arabic	Excellent	Excellent	Excellent

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English	Excellent	Excellent	Excellent
Slovak	Very good	Very good	Very good

Note: Dr. Mohd Rashad Tahakhater is highly experienced and is regularly conducting trainings for Major Oil & Gas Companies in UAE & GCC he always received excellent evaluations from participants

PROFILE OF 2nd INSTRUCTOR

DR. RAOUF NASSIF ABDEL-MESSIH

Nationality Egyptian

STATUS: Assoc. Prof., Power Eng. Dept., Faculty of Eng., Ain Shams University, Cairo Egypt.

ACADEMIC QUALIFICATIONS:

Degree	University	Date of Award
B. Sc.	Assiut, Egypt	June, 1972
M. Sc.	Cairo, Egypt	December, 1976
DEA.	INP, Toulouse, France	June, 1981
Ph. D.	INP, Toulouse, France	May, 1985

EMPLOYMENT HISTORY:

No	Location and Post	Period
1	Academy of Scientific Research & Technology, (Patent Office Eng.), Cairo, Egypt.	1972-1973
2	National Research Center, (Research Assistant), Cairo Egypt.	1973-1975
3	Faculty of Eng. Ain Sham University, (Teaching Assistant), Cairo Egypt.	1975-1980
4	INP de Toulouse, (DEA, and Ph. D.), Toulouse, France.	1980-1985
5	Faculty of Eng. Ain Sham University, (Assistant Professor), Cairo Egypt.	1985-1990
6	Mech. & Industrial Dept., University of Illinois , (Visiting Prof.), USA.	1990-1991
7	Faculty of Eng. Ain Sham University, (Associate Professor), Cairo Egypt.	1991- 2002
8	Faculty of Eng. Ain Sham University, (Full Professor), Cairo Egypt.	2002

Languages: Fluent in English, French as well as in the native Arabic Language.

Teaching Experiences:

- Fluid Mechanics and Gas dynamics; (Under-graduate and post-graduate students).
- Principles of Turbomachinery (Pumps, compressors, and turbines).
- Performance and Design of centrifugal pumps and compressors (Post-graduate students).
- Testing of Turbomachinery (Post-graduate students).
- Operation and Maintenance of pumps and compressors (Post-graduate students).
- Heat and Mass Transfer (Under-graduate students).
- Refrigeration and Air Conditioning (Under-graduate students).

Research Activities and Publications:

A-Turbomachinery and Fluid Mechanics:

- 1- "Investigation of Some Design Elements on the Performance of Regenerative Pumps".
- 2- "Multiple-Impeller Pumps".
- 3- "Study of Leakage Losses in a Centrifugal Pump Handling Slurry Flow".
- 4- "Study of the Effect of Vane Curvature on the Performance of Vacuum Pumps".
- 5- "Effect of Some Design Parameters on the Performance of Water-Ring Compressor".
- 6- "Study of Mechanical Equipment Performance in Wastewater Treatment Plants".
- 7- "Effect of Some Design Parameters on the Performance of a Vortex pump".
- 8- "Effect of Some Design Parameters on the Performance Of a screw pump".
- 9- "Effect of Some Design Parameters on the Performance Of a surface aerator".

B-Wind Energy:

- 1- "Effect of Maximum Camber on the Performance of Savonius Wind Turbine Having Cylindrical Blades".
- 2- "Performance of a Roof Ventilator Used As a Wind Turbine".
- 3- "Investigation of Design Parameters on the Performance of a Horizontal Axis Wind Turbine Model".
- 4- "Development of a Horizontal Axis Wind Turbine to Generate Power for Rural Use".
- 5- "Investigation of Design Parameters on the Performance of a Darrius Wind Turbine".
- 6- "Investigation of Design Parameters on the Performance of a Horizontal Axis Wind Turbine Having Flat Sheet-Bladed Rotor".

C-Solar Energy:

- 1- "Development of a Magnetically Levitated Density-Meter For Salt Gradient Solar Ponds".

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- 2- "Transient Wind Shear Effects on Solar Pond Gradient Zones".

D-Heat and Mass Transfer:

- 1- "Performance Limits of Heat Pipes with Helical Wick Structure".
- 2- "A Method For The Measurement Of The Thermal Properties Of Some Materials By The Hot-Wire Technique Using Only One Thermocouple".
- 3- "Investigation of Pulsating Flow on the Performance of A Double Concentric Tube Heat Exchanger".
- 4- "Investigation of the Performance of Coaxial Tube Heat Exchangers Having Internal Annular Restrictions".

E-Refrigeration and Air Conditioning:

- 1- "Performance of a simple Vapor Compression Cycle Using an Ejector".
- 2- "Door Opening Effect on a Refrigerator Performance".

Memberships and Consultants:

- 1- Member in ISES (International Solar Energy Society)
- 2- Member in ASHRAE (American Society for Heating, Refrigerating And Air Conditioning Engineers.)

Practical Experiences:

- 1- Consultant at the National Organization for Potable Water and Sanitary Drainage (NOPWASD), Cairo, Egypt since 1996-2009. Through NOPWASD, many pumping stations all over Egypt had been investigated and many practical problems had been solved as:
 - i- Gelbana P. S. in Saini for potable water.
 - ii- Damnhour P. S. for potable water.
 - iii- Assiut P.S. for sanitary drainage.
 - iv- Banha P.S. for potable water.
 - v- Bani-Sweif for potable water.
 - vi- Nagei-Hammadi for potable water, finally
 - vii- Kima in Aswan for sanitary drainage.
- 2- Investigation of the Islamic Emission City pumping station troubles, Cairo, Egypt.
- 3- Design and Supervision of a Tourist City in Sharm El-Sheikh, Sinai, Egypt.
- 4- Application of Artificial Intelligence to classification and storage of recyclable containers, Mech. Dept., University of Illinois at Urbana-campaign, USA.
- 5- Investigation of light, acoustic and magnetic signatures of recyclable containers materials.
- 6- Work during 20 Months at ACRC (Air conditioning and refrigeration center, University of Illinois, Mech. And Industrial Dept. USA).

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- 7- Member Of a Committee For Putting Rules of Evaluating The Equipment And Apparatuses Used in The Projects of Potable Water and Sewage Drainage in The Different Associations And Departments Of The Ministry Of Housing “.
- 8- Member Of a Committee For Revising The Rules of Evaluating The Equipment And Apparatuses Used in The Projects of Potable Water and Sewage Drainage in The Different Associations And Departments Of The Ministry Of Housing “.
- 9- Member Of a Committee For The Extension Of Drinking Water Pipe Line Of (Quraimat- Urgada).
- 10- Member of a Committee For Drinking Water Purification Plant OF Sadat City.

Training courses

- 1- PUMP TECHNOLOGY
- 2- COMPRESSORS. TECHNOLOGY
- 3- TURBINES TECHNOLOGY (STEAM AND GAS TURBINES)
- 4- VALVE TECHNOLOGY
- 5- HYDRAULIC SYSTEMS
- 6- ROTATING EQUIPMENT, OPERATION & MAINTENANCE
- 7- TECHNICAL REPORT WRITING
- 8- HEAT EXCHANGERS
- 9- MAINTENANCE (SCHEDULING, PLANNING AND WORK CONTROL)
- 10- AIR CONDITIONING SYSTEM.
- 11- BOILER OPERATION AND MAINTENANCE
- 12- PROJECT MANAGEMENT
- 13- WATER HAMMER

Details of the Conducted training courses

1. PUMP TECHNOLOGY:

- I. (EGYPT)
 - i- Gulf Petroleum Company.
 - ii- National organization for potable water and sanitary drainage.
 - iii- Municipal of El-Minia, Damnhour, Tanta, Kafr El-Sheikh
- II. (KUWAIT)
 - i- KNPC (PTC).
 - ii- KOC (PTC)
- III. (UAE)
 - i- ADGAS (Das island)
 - ii- GASCO (Ruwais)
 - iii- Public courses in Dubai
- IV. (QATAR)
 - i- QABCO
 - ii- QAVCO

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- V. (KINGDOM OF BAHRAIN)
 - i- Ministry of water and electricity
 - ii- Technician Syndicate.
- VI. (KINGDOM OF SAUDI ARABIA)
 - i- SABIC (Elgubail)
 - ii- JOIN_OPERATION (El-Khafga).
- VII. (CYPRUS)
 - (Lemasol) for GASCO (UAE)
- VIII. (LYBIA)
 - (RasLanoof)

2. COMPRESSOR TECHNOLOGY:

- I. (EGYPT)
 - i- Gulf Petroleum Company.
 - ii- National organization for potable water and sanitary drainage.
 - iii- Municipal of El-Minia, Damnhour, Tanta, Kafr El-Sheikh
- II. (KUWAIT)
 - i- KNPC (PTC).
 - ii- KOC (PTC)
- III. (UAE)
 - i- ADGAS (Das island)
 - ii- GASCO (Ruwais)
 - iii- Public courses in Dubai
- IV. (QATAR)
 - i- QABCO
 - ii- QAVCO
- V. (KINGDOM OF SAUDI ARABIA)
 - i- SABIC (Elgubail)
 - ii- JOIN_OPERATION (El-Khafga).

3. HEAT EXCHANGERS:

- I. (EGYPT)
 - i- SWEDICABELS COMPANY
 - ii- ASSIUT PETROLEUM COMPANY
 - iii- SUGAR COMPANY IN ELHUAMDIA
- II. (UAE)
 - i- ADMA (El-Ghaith Tower)
 - ii- ADGAS (Das Island)
 - iii- Public courses in Dubai
- III. (LYBIA)
 - (RAS lanoof)

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4. BOILERS, OPERATION, AND MAINTENANCE:

- I. (UAE)
 - i- ADGAS (Das Island)
 - ii- Public courses in Dubai
- II. (LYBIA)
 - RasLanoof

5. STEAM AND GAS TURBINE TECHNOLOGY:

- I. (UAE)
 - i- ADGAS (Das Island)
 - ii- GASCO – Ruwais
 - iii- Public courses in Dubai
- II. (EGYPT)
 - i- Badr petroleum company
 - ii- Gulf petroleum company
- III. (CYPRUS)
 - (Lemasol)

6. ROTATING EQUIPMENT (OPERATION & MAINTENANCE)

- I. (Kuwait)
 - i- Public course
 - ii- KOC
- II. (UAE)
 - i- GASCO – Ruwais
 - ii- Public course in Dubai
- III. (Egyt)
 - i- National Organization for Potable Water and Drainage
 - ii- Gulf Petroleum Company

7. VALVE TECHNOLOGY:

- I. (EGYPT)
 - i- Public courses
 - ii- Gulf Petroleum Company
- II. (LYBIA)
 - RasLanoof
- III. (Kingdom of Saudi Arabia)
 - SABIC

8. HYDRAULIC SYSTEMS.

- I. (UAE)
 - Rauwais

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- II. (EGYPT)
 - Public courses

9. PROJECT MANAGEMENT:

- I. (EGYPT)
 - Public courses
- II. (KINGDOM OF BAHRAIN)
 - Aluminum Company

10. MAINTENANCE PLANNING, SCHEDULING AND WORK CONTROL:

- I. (KINGDOM OF SAUDI ARABIA)
 - Sabic- El-Dmmam
- II. (UAE)
 - Public courses in Abu Dhabi

11. TECHNICAL REPORT WRITING COURSES

- I. (EGYPT)
 - i- Badr Petroleum Company
 - ii- Gulf Petroleum Company.
- II. (Kingdom of Bahrain)
 - i- Municipal of Manama (two times) through ACAD-Egypt.
 - ii- Aluminum Company (once) through ACAD-Egypt.
- III. (Kingdom of Saudi Arabia)
 - i- El-Khafgy Mutual operation Company, through ICTD-Abu Dhabi.
 - ii- SABIC at El-Riyadh (three times), through ICTD-Abu Dhabi.
 - iii- El-Gubail (once), through ICTD-Abu Dhabi.
- IV. (UAE)
 - i- In Abu Dhabi for ADDC, through INSIGNIA-Abu Dhabi.
 - ii- In El Ain for EADC, through INSIGNIA-Abu Dhabi.

12. WATER HAMMER

- I. (EGYPT)
 - i- Gulf Petroleum Company.
 - ii- National Organization for Potable Water and Sanitary Drainage.

13. AIR CONDITIONING:

- I. (EGYPT)
 - i- Public courses.
 - ii- Bahrain engineers from Aluminum Company.
- II. (LYBIA)
 - RasLanoof (Absorption systems)

Note: Dr. Raouf is highly experienced and is regularly conducting trainings for Major Oil & Gas Companies in UAE & GCC he always received excellent evaluations from participants

PROFILE OF 3rd INSTRUCTOR
ENGR. HAMSA V. BAVA

TRAINING SPECIALIST/PROFESSIONAL OIL & GAS TRAINER.

EXPERIENCE SUMMARY

- A progressive career to date with 15 + Years' experience in the field of operation, Training & Development that include 10 years' experience in the Middle East Reputed Oil and gas companies
- Excellent Experience in Process Training Material Preparations, Job Assessments and Verifications, Conducting Short Term courses, Preparing and Monitor IDP Programs and CAMS Programs.
- Design and development of Web Based Training Modules, Training APPS and E – Learning Modules

EDUCATION

- Masters in Technology (M. Tech) 2016
- Bachelor of Technology (B. Tech) in Chemical Engineering, University of Kerala, India (1990 – 1994)
- Postgraduate Diploma in Environmental Management.
- Postgraduate Diploma in Industrial Safety.
- Postgraduate Diploma in Training and development.

ADDITIONAL QUALIFICATION & COMPUTER SKILLS

- Boiler Operation Certificate issued ISBI (www.boilersociety.org) - License # - 6228
- Process Simulators – design by Indiss
- SCADA, PLC and DCS based control systems.
- H2S and BA course.
- AutoCAD, Windows and MS Office.

PROFESSIONAL TRAININGS

- Supervisory skill development course.
- Fire and safety.
- Permit work systems.
- Emergency procedure.
- Heat Exchanger operation and maintenance.
- Chemical injection and treatment.

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TRAINING COURSES CONDUCTED

- Distillation and Process control 10 Days course at Dubai for OMAN LNG trainees in Nov 2013.
- Natural Gas Dehydration and booster station facility –Define Management Consultancy & Training, Abu Dhabi, 5 Days Training course at Dubai ForKOC, Kuwait in March 2014.
- Water Treatment Operation For Process Operators- Define Management Consultancy & Training, Abu Dhabi, 5 Day Training at Doha for ADCO trainees on May 2014
- Basic Instrumentation and Process Control, 5 Day Training course in Delhi.
- Many short term courses for Oil and Gas operation.
- Heat Exchanger Design, Operation and Maintenance – for ADGAS, DAS Island from Oct 22 to Oct 27, 2014,
- Water Injection and Treatment For Oil And Gas Process for KOC, from Nov 02- Nov 06, 2014. Define Training Abu Dhabi.
- Operators Skill Enhancement – OXY Oman – Dec – 2014.

SIGNIFICANT ACCOMPLISHMENTS

- Achieved Performance Recognition program certificate (“Shukran Certificate”) thrice from ADMAOPCO in recognition & appreciation for outstanding performance & contribution – in 2005, 2006 and 2008.
- Prepared simplified pocket book for process junior’s easy reference in the plant.
- Simplified control loop drawings, equipment drawings, internals drawings and many simplified training materials.

PROFESSIONAL EXPERIENCE & EMPLOYMENT HISTORY

18 YEARS EXPERIENCE IN OIL, GAS AND UTILITY FIELDS IN THE AREAS OF OPERATION, TRAINING AND DEVELOPMENT.

Senior Training and Development Specialist- Petro China - Iraq, July 22 2013- Jan 2014.

Main Duties and Responsibilities:

- Implement, Monitor and Maintain Graduate Development Program.
- Review Competency Frame work, design proper changes and implementation.
- Monitor Monthly Progress and Quarterly Progress.
- Conduct Quarterly Progress Meeting and coordinate with all Parties.
- Maintains and updates the CFW , including OJT tasks and performance criteria
- Reviews course content and recommends additions and/or improvements
- Supports line staff and Graduates with discipline-related knowledge
- Liaises with training agencies, Vendors and Subject Matter Experts (SMEs)

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1. ON Job Trainer (Process) – Occidental Petroleum, Oman, Jan 01 2011 to June 30 2013.
2. ON Job Trainer (Process) – PDO Oman, July 2010 to Dec 2010
3. Process Trainer (Process and Utility), ADMA-OPCO, UAE - Jan 2003 to April 2010. (7 Year).

Main Duties and Responsibilities:

- Conduct basic, on-the-job training and competency assessment and verification interviews, writing procedures, assist in developing specific competency modules and training packages for technicians, operators, supervisor & engineers.
 - Training to operators, technicians & engineers on process plant operation and maintenance activities.
 - Design, develop and implement Individual Development Programs (IDPs).
 - Design, Develop and Conduct training programs both basic & on-the-Job-training.
 - Support to training departments in competency campaign, duties includes preparing assessment books for Technicians, Operators & Engineers.
 - Assisted & provided Technical input to Training Department regarding the plant equipment to prepare specific training modules to eliminate the gaps.
 - Reviewing, Updating & revalidating training materials for Basic & OJT.
 - New Material preparation based on the new task list / Job Audit Form.
 - Competency Assurance Management Systems (CAMS). Competency Based Training Programs.
 - Computer based Training (CBT), and process simulator courses (Indiss).
4. **Process Trainer** (worked in different location - Qatar Gas, RasGas, and PS3), **Qatar petroleum (QGPC), Qatar** – June 1998 to Dec 2002 (4 Year)

Main Duties and Responsibilities:

- Design, Develop and Conduct training programs both basic & on-the-Job-training.
 - Reviewing, Updating & revalidating training materials for Basic & OJT.
 - Assist VTC to develop specific competency modules and training packages for technicians, operators, supervisors & engineers.
 - Short term courses for other disciplines, Power Barge operators etc.
5. **Shift supervisor, ATV projects India Ltd, Nagothane, India** – Jan 1995 to May. 1998 (3 year)

Main Duties and Responsibilities:

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- Operation of Boilers, Air compressors, Inert Gas generation Plant and Desalination unit.
- Central control room Panel Operations & field operations and take corrective actions during upsets. Co-ordinate and carryout day to day maintenance activities at field/ out- stations through PTW administration.
- Maintenance procedures. Permit to work systems, plant safety rules and procedures, operation of hazardous substances.
- Commissioning and de commissioning of plant equipments. Start up and shut down of the plant equipment and units.

TRAININGS CONDUCTED

1. Distillation & Unit Control Operation
2. Process Troubleshooting & Problem Solving
3. Gas Conditioning & Processing
4. Water & Process Chemistry for Plant Operations
5. Production Chemistry & Chemical Treatment in the Oil & Gas Fields
6. Gas Dehydration & Booster Station Utilities
7. Process Plant Start-up & Troubleshooting
8. Water Treatment for Plant Utilities, Off sites & Cogeneration
9. Elements of Applied Process Engineering
10. Monitor Gas Flaring & Effluent Water Disposal
11. Separation Equipment, Selection & Sizing
12. Process Plant Troubleshooting & Engineering Problem Solving
13. Oily Water Treatment Technology
14. Natural Gas Processing, Gas Sweetening & Sulphur Recovery
15. Waste Water Treatment
16. Introduction to Process Engineering
17. Crude Dehydration & Desalting
18. Gas Processing for LNG & LPG Plants
19. Petrochemical Process Plant Equipment Sizing & Selection
20. Natural Gas Hydrates & Dehydration
21. Separation Technique In Oil/Petroleum Industries
22. Gas Field Operations: Gas Processing, Hydrates, Dehydration, Sweetening, NGL
23. Recovery, Fractionation, Sulphur Recovery & Handling
24. Boiler Feed Water Treatment

Note: Engr. Hamsa Bava is highly experienced and is regularly conducting trainings for Major Oil & Gas Companies in UAE &GCC he always received excellent evaluations from participants

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PROFILE OF 4th INSTRUCTOR

ENGR. AHMED EL SAYED REFAEYDARAZZ

Nationality - Egyptian

Multi-disciplined Mechanical Engineer with over 20 years of progressive working experience in both onshore and offshore Oil & Gas industries.The experiences include:

- i. Preventive and corrective maintenance of various types of rotating and static equipment.
- ii. Troubleshooting and failure analysis of pumps, compressors, diesel engines and fan coolers.
- iii. Condition monitoring of rotating equipment to ensure the availability and reliability.
- iv. Maintenance of static equipment such as desalters, heat exchangers, pressure vessels (e.g. expansion drums), tanks and separators.
- v. Maintenance and installation of different types of piping with all related fittings and valves.
- vi. Maintenance of water treatment plants (RO units) with its related facilities.
- vii. Mechanical Equipment Installation as per International standards.
- viii. Capable of preparing contract specifications, scope of works and tenders evaluation.
- ix. Capable of preparing list of spare parts, issuing material requisitions, evaluating the quotations up to awarding as well as checking the received materials.
- x. Having experience in conducting ISO 9001 QMS audit and also other QA related functions.
- xi. Throughout the years of involvement in maintenance of Oil and Gas plants attended numerous numbers of Technical Training and HSE awareness Programs.

Throughout the years of his career he conducted several in-house and public courses in different Arab Countries which are certified by IACET (International Association for Continuous Education and Training)

Following trainings delivered to all major oil & gas, petrochemical & power sector companies in middle east including, ADMAOPCO, GASCO, ZADCO, DEWA, ADCO, KOC, KPC, Qatar Petroleum, SABIC, Saudi ARAMCO etc.

S.No	Course Title
1.	Valves Selection, Maintenance, Testing and Repair.
2.	Relief Valves Selection, Maintenance, Testing and Repair.
3.	Mechanical Seals Selection, Maintenance and Repair.
4.	Pump Technology.
5.	Centrifugal Pumps Theory, Operation and Maintenance.

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6.	Reciprocating pumps Theory, operation and Maintenance.
7.	Rotary Pumps Theory, Operation and Maintenance.
8.	Practical Pumps and Compressors Operation, Maintenance and Troubleshooting.
9.	Shaft Alignment and Couplings Selections.
10.	Compressor Technology.
11.	Centrifugal Compressors Theory, Operation and Maintenance.
12.	Reciprocating Compressors, Theory, Operation and Maintenance.
13.	Diesel Engines Theory, Operation and Maintenance.
14.	Diesel Engines and Cranes Maintenance.
15.	Bearings and Lubrication Technology.
16.	Mechanical Power Transmission - Belts, Gears, and Chain Drives.
17.	Gear Boxes Design, Maintenance and Troubleshooting.
18.	Measuring Tools.
19.	Pipe Work Design and Fabrications.
20.	Machinery Failure Analysis and Prevention.
21.	Root Cause Failure Analysis.
22.	Material Selection for Petrochemical Industry.
23.	Maintenance of Process Plant Equipment.
24.	Basics of Rotating Equipments Selection.
25.	Metallurgy for Non-Metallurgical Engineers.
26.	Metallurgical Failure Analysis
27.	Mechanical Engineering for Non-Mechanical Engineers.
28.	Heat Exchanger Design, Performance, Operation and Maintenance.

29.	Preventive and Predictive Maintenance.
30.	Practical Machinery Vibrations and Measurements

Course delivered for ADNOC Group		
Course Name	Course Date	Reference Contact
<p>Delivered many public and in-house courses for many companies under ADNOC group such as the followings:</p> <ol style="list-style-type: none"> 1. Reciprocating Compressor maintenance and troubleshooting. 2. Gas Compressor theory and troubleshooting. 3. Reliability Centered Maintenance 4. Maintenance of Mechanical Equipment 5. Valve Operation and Troubleshooting. 6. Valve maintenance and testing. 7. Pumps operation and maintenance. 8. Shaft alignment. 9. Piping design and fabrications. 10. Root cause analysis 11. Industrial Equipment. 12. Diesel Engine Maintenance 13. Preventing Maintenance and Conditions Monitoring. 14. Pumps & Compressors Operation, Maintenance & Troubleshooting. 15. Gearboxes design and troubleshooting 16. Bearing Maintenance and lubrication 17. Heat Exchanger Maintenance and repair. 	<p>15 to 19 September 2013</p> <p>1 to 6 September 2013</p> <p>17 to 22 August 2013</p> <p>16 to 20 June 2013</p> <p>6 to 10 January 2013</p> <p>7 to 11 October 2012</p> <p>1 to 5 July 2012</p> <p>3 to 7 June 2012</p> <p>6 to 10 May 2012</p> <p>8 to 12 April 2012</p> <p>October 23-27, 2011</p> <p>1 to 5 May 2011</p> <p>April 17-21, 2011</p> <p>4 to 8 March 2011</p> <p>August 01-05, 2010</p> <p>June 7 to 11, 2010</p> <p>June 13-17, 2010</p>	

INDUSTRY EXPERIENCE

Organization Kuwait Oil Company (K.O.C)

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Duration: From: February, 2008 To: Present

Position: Mechanical Maintenance Engineer

Work

Descriptions:

- Supervises and controls the activities involved in maintenance and installation of mechanical systems including overhead cranes, diesel generators, compressors, pumps, firefighting systems, and sewage systems.
- Planning and supervising site installation and major overhauls of rotating and static equipment.
- Investigating failure and defects in all equipment for providing technical advice to resolve the problems with recommendations of remedial action.
- Prepares all Service Contracts related to mechanical maintenance services with all related attachments, appendixes and evaluation up to awarding.
- Liaises with other departments for carrying out the performance tests of the equipment's, considering all technical aspects and safety requirements.
- Issuing material requisitions and service work orders for spare parts, materials and equipment's.
- Reviewing of subcontractors / suppliers quotations relating to the required materials/spare parts and ensuring the received materials are in compliance with Company quality requirements.
- Preparing the service work orders for repair the equipment, necessary LVC's and assists in preparation of capital and revenue budgets and controls expenditure within approved limits.
- Participating in establishing codes of practice and engineering standards sharing Standard Team staff for preparing new Standards and updating the existing Company standards.
- Reviewing the contact packages of new projects received from other Teams (e.g. project design and engineering) in the design stage and advice with the recommendations.
- Attending handing over of new projects which are executed by other Teams as per contact specifications.
- Following up to completion of activities of action plan and KPI.
- Perform other related duties such as all technical correspondence and reviewing the contractor's monthly invoices to be within contract charge scales.
- Ensuring the contactors and all staff are adhered to the Company HSE rules and regulations on regular basis.
- Prepares and conduct on job training courses to develop the staff within the department as well as conducting the gap analysis for evaluating the training needs for all staff.
- Conducting regular seminars and tool box talking pertaining HSE rules and regulations.

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- Issuing near miss reports, accident and incident investigation reports as necessary.

Organization: PetrogulfMisr (Ex. Geisum Oil Co.)

Duration: From:2005 To: January, 2008

Position Title: Mechanical Maintenance Department Head

PetrogulfMisr Is a joint venture **Oil Production Company**, located in Gulf of Suez, north of Hurgada, Egypt and belongs to EGPC. It has several platforms, jack up rig converted to complex oil processing facilities and consists of separators, heating medium system (dual fuel furnace, expansion drum and hot water circulation pumps), heat exchangers, oily water flash drum tank, transfer pumps, chemical injection skid and flaring system. It also includes oily water treatment plant and water injection plant controlled by distributed control system (D.C.S), and consists of de-aerators, lift, vacuum, booster, and injection pumps as well as chemical injection skid. It has also onshore desalting and storage facilities includes: desalters, buffer tanks (fixed roof type), heat exchangers (fixed head), heating medium system, air coolers, floating roof storage tanks, oily water plant, water maker based on reverse osmosis, most type of pumps, air compressors, and firefighting system.

- Work Descriptions:**
- Supervise; coordinate in carrying out the preventive, corrective and troubleshooting maintenance activities of the plant equipment at onshore and offshore facilities.
 - Participate in the planning, scheduling and execution of plant shutdown and major overhaul maintenance activities.
 - Monitor and ensure that the shutdown maintenance jobs are carried out within the scheduled time frame
 - Update the equipment data sheet, history and maintenance records in 'GMS' system.
 - Prepare the list of spares, tools and other material required for the maintenance and issue the Purchase/Material requisitions.
 - Inspect and confirm that the specifications are in line with the requirement of the received 'direct charge' and 'stock Materials'.
 - Organize the safe consignment of the parts removed from the main equipment for refurbishment and to inspect the refurbished material.
 - Comply with Company Health, Safety and Environment Management System (HSE-MS) and also promote awareness of its use among the staff.
 - Participating and implementing of hazard identification and risk assessment for all work activities.
 - Conduct tool box meetings with subordinates for discussing safety and

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methods of completing job tasks.

- Evaluate equipment performance problems by coordination with other sections to suggest modification for reducing overall maintenance cost.
- Conduct root cause analysis of equipment failures and recommend resolutions.
- Supervise the performing of condition monitoring of the rotating equipment.
- Conducting regular training, both in class and in fields (OJT) for all subordinates to improve their skills according to company training schedule as well as preparing the personal development plan (PDP) for all subordinates.
- Evaluate the technical offers, bidder quotations and tenders.
- Participate in budget preparation and cost control.
- Conducting periodic activity reports, equipment technical reports (trouble shooting, and failure analysis) and technical correspondences.

Organization: PetrogulfMisr (Ex. Geisum Oil Co.)

Duration: From : 2002 To : 2005

Position: Mechanical Maintenance Section Head

Work

Descriptions:

- Ensure that all rotating and static equipment are operated and maintained for optimum plant availability and reliability.
- Coordinates with other departments in developing and performing the planned maintenance activities.
- Ensure that all the required material, spares, consumables and tools are of the right quality and available on a continuous basis.
- Participating and implementing of hazard identification and risk assessment for all work activities.
- Ensure that all maintenance activities are carried out according to Company Safety Policy.
- Studying the technical proposals and plant modifications according to standard, specifications and preparing all its related engineering packages as per company procedure.
- Participating with Project Team in commissioning, handing over and start-up of new installation and major modifications.
- Participating in selecting the suitable materials required for modification and fabrication of pipe works according to ASME/ANSI standards.

Organization: PetrogulfMisr (Ex. Geisum Oil Co.)

Duration: From: 1995 To: 2002

Position: Mechanical Maintenance Engineer

Work

- Execution of the planned maintenance through computerised maintenance

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- Descriptions:** program (GMS) including scheduled PMs, planned shutdown and breakdown maintenance on both onshore process facilities and offshore platforms.
- Maintenance of water makers based on reverse osmosis with its related high pressure pumps and dosing pumps.
 - Maintenance of sewage treatment plants with its related equipment's (filtration, raw water, backwash, irrigation) pumps, aeration blowers and valves.
 - Maintenance of surface equipment related to artificial lift such as multistage centrifugal pumps (60 and 128 stages), reciprocating pumps and booster pumps.
 - Mechanical workshop activities including minor and major overhaul for rotating and static equipment.
 - Welding workshop activities including welding repair, fabrication and installation works of piping with its related fittings.
 - Scheduled maintenance for vehicles and heavy equipments.
 - Review the stock of the spare parts in warehouse and adjust the min/max according to the actual consumption as well as issuing the required material requisitions.
 - Perform condition monitoring by using vibration analyser (CSI 2120).
 - Perform alignment for rotating machineries by both dial indicator and laser alignment device (CSI model 8909).
 - Perform numerous complete overhauled for single and multistage centrifugal pumps, reciprocating pumps, screw pumps, gear pumps, reciprocating compressors, rotary compressor and CAT Diesel engines.

Organization: Technical Institutions for Metals and House Appliances

Duration: From: 1992 To: 1995

Position: Mechanical Maintenance Engineer

Work Descriptions: The main objective of this Institution is the fabrication and assembly of house appliances such as washing machines, ovens, etc. My responsibility was mainly to check the product quality and to maintain the sheet metal deformation equipment such as shears, presses, lathes, drills, and rollers.

EDUCATIONAL QUALIFICATIONS

Graduation: B.Sc. in Mechanical Engineering, AL Azhar University, 1992, Average Grade: Good, Project Grade: Excellent.

Additional Degree: M.Sc. in Mechanical Engineering, AL Azhar University, 2000, research entitled "Effect of microstructure on properties of an engineering alloy".

Training Courses:

- Oil Technology in Mobil Oil Company, Egypt.
- Training for using CSI Laser Alignment Device Model 8909 in Natcom, Egypt.
- Technical Report Writing in MDC, Egypt.
- Introduction to Vibration Analysis, Basic 2120, in Natcom, Egypt.
- Hazard and Operability (HAZOP) in Enppi, Egypt.
- Machinery Vibration Analysis, Level 1, in Natcom, Egypt.
- Oil spill Combating Control, in GPC Egypt.
- Vibration Analysis based on RBM Software, in Natcom, Egypt.
- Personal Survival Techniques and Save On-board Offshore Units, in Arab Academy, Egypt.
- Inspection and Failures Analysis of Pressure Vessels, in Datco Egypt.
- Pumps Operation and Maintenance, in Datco Egypt.
- Pipe Work Design and Fabrication, in Datco Egypt.
- Advanced Piping Selection and Fabrication, in Egycan, Egypt.
- Rotating Equipment Maintenance and Repair, in Gesco Egypt.
- Basic Managerial Skills, in Totality, Egypt.
- Reciprocating Pumps, Maintenance, Repair and Inspection in National Oil Well, USA.
- Compressor Technology, in AGTS, Egypt
- Valve Selection Maintenance and Repair, AGTS, Egypt.
- Bearing Lubrication and Maintenance, in ETC Egypt.
- Internal Auditor course in OHSAS 18001, in Petrosafe Egypt.
- Incident Report Writing, in Geisum, Egypt.
- Basic Communication Skills, in Geisum, Egypt.
- Pump Technology in Petroleum Training Company (PTC)
- Valve Technology in Petroleum Training Company (PTC)
- Root Cause Failure Analysis in Petroleum Training Company (PTC)
- Maintaining Process Gas Compressors in Petroleum Training Company (PTC)
- Preventive Maintenance and Condition Monitoring in Petroleum Training Company (PTC)

Others:

Publications

- Published technical papers in the proceeding of the 7th Cairo University International, MD-P conference, February 15-17, 2000, pp. 369-380, titled (Structure and Engineering Properties of Ductile Iron).
- Published technical papers in the Journal of Materials Science, **38** (2): 351-362, January 15, 2003, titled (Effect of Microstructure on Properties of ADI and low Alloyed Ductile Iron).
- Published a technical paper in 2012 Maintenance Conference (MainCon) in Bahrain.

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Part Time

- June to August 2006, Egyptian Maintenance Co. (EMC), Maintenance Engineer in Global Maintenance Solution Projects of LNG plant (Segas-Damiatta- Egypt).
- Jan. to Oct. 2000, "Egyptian Maintenance Co. (EMC), Supervising Mechanical Engineer for executing project titled "Sewage Treatment Plant" in various Oil Transferring Companies" Egypt.
- ◆ August 2003 to present "Worked as Part time instructor for Conducting Training Courses in Egypt, Syria, and all Gulf Countries.
- ◆ Worked through many training international centers such as: TriStar, ETC, INTEC, Gesco Group, AGTC, GTSC, Oil & Gas Skill, Haward Technology, Insignia and ICTD for both public and in-house courses. The following activities has been conducted:
 - Conducted Mechanical Maintenance public courses as per the attached list.
 - Managed the on the job training activities in the fields.
 - Assist in Preparing Required Material in Conjunction with the on the Job Training Advisors.
 - Create Competence Development Targets for Individual Staff
 - Provide hands on Training for both junior and senior staff nominated to undergo the OJT program
 - Ensure the Correct Transfer of knowledge

Note: Engr. Ahmed Refaey is highly experienced and is regularly conducting trainings for Major Oil & Gas Companies in UAE &GCC he always received excellent evaluations from participants

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