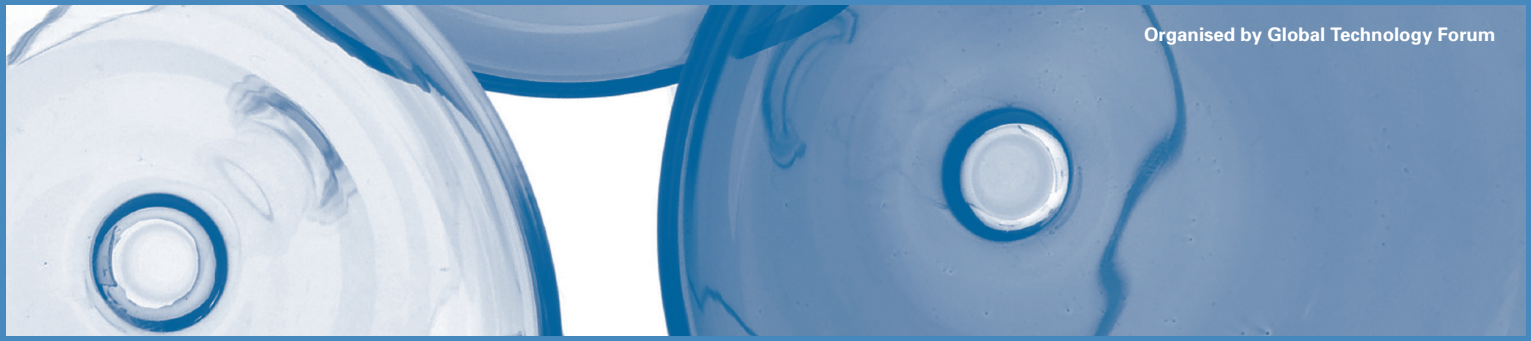

Organised by Global Technology Forum

Refinery desalting

29 – 30 September 2010

London

gtforum.com/desaltinguk

ERTC Training

Key topics:

Desalting fundamentals
Opportunity crude processing
Tank farm management
Crude oil quality impact
Desalter equipment
Desalter designs
Heavy crude oil desalting
Best practice and case studies
Field testing
Troubleshooting process

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ERTC Training
Meetings of minds

Introduction

ERTC and Nalco Company, Energy Services Division, are pleased to present this review of refinery desalting techniques and treatment.

This course will provide an overview of the value of a sound desalting process – why you should be concerned with maintaining good performance to protect downstream equipment and overall reliability, and how to troubleshoot operational challenges that can occur.

Who should attend?

This program should appeal to a wide spectrum of refinery operation professionals. It provides a sound basis for the main areas impacting desalter operations, and includes industry guidelines to target and options to focus on for desalter performance improvement activities.

It is ideal for refinery process engineers, operators, and maintenance staff (new and experienced) – particularly crude unit and waste water process engineers. Supporting companies to the refining industry – consulting and engineering companies, and suppliers of services – should also gain useful and practical knowledge of the desalting process.

Learning objectives

Upon completion of the course participants will have increased their knowledge of the key desalter operating practices. They will have improved their understanding of desalter performance impacts related to design and equipment differences on their individual sites, and should also have a better ability in troubleshooting operational issues using mechanical, operational, and chemical solutions.

They should also take with them the realisation of how critical the desalting process is in:

- Protecting the downstream operations
- Improving equipment reliability in terms of reducing corrosion
- Fouling
- Energy consumption
- Waste water treatment impacts
- Reducing total cost of operation

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Course description

The course will introduce participants to the desalting process as a whole, covering the factors that influence design and impact performance, along with the benefits it provides to the refinery process overall.

This training course will cover the following competencies:
- Discover the differences in desalter designs
- Desalting theory and electrical systems
- How to troubleshoot the desalting process
- How changes in desalter performance impacts refinery economics

The course environment is open with many opportunities to ask questions throughout the training, whilst networking with industry peers. Participants will learn best practice and take part in interactive case studies.

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Course programme (registration 8.30am, course starts 9.00am, course ends 5.00pm)

Wednesday 29 September

Benefits of crude oil desalting
- General overview

Impact of crude oil quality on desalter performance
- Introduction to desalting • Crude oil impurities: water, salt and solids
- Impact of organic acids, asphaltenes
- Desalting heavy and opportunity crudes • Tankage dehydration

Fundamentals of electrical desalting
- Wash water addition • Rate and wash water quality
- Mixing/Contact ○ Mix valves ○ Static mixer
- Coalescence ○ Stoke's Law and electrical voltage
- Performance control variables
- Dehydration efficiency vs. salt removal efficiency

Types of desalting systems
- Single-stage dehydrator • Single-stage desalter
- Two-stage desalter • Three-stage desalter
- Typical operating conditions and performance

Desalter components
- Process vessel • Distribution system • Electrodes and transactors
- Mud wash • Level control devices

Desalter design considerations
- Vessel size • Number of stages • Transactor size and power consumption
- Crude properties

Thursday 30 September

Commercial desalter designs
- Petreco/Edge • NATCO

Factors that affect desalter operation and performance
- Crude oil feed rate and quality • Temperature/viscosity/density relationships
- Electrical field intensity • Wash water rate, quality and flow configuration
- Emulsion formation (pumps, exchangers, valves, mixers)
- Control of water level and emulsion layers
- Demulsifier technology and addition rate • Mud washing and brine recycle

Types of desalting applications
- Heavy crude desalting • FCC feed desalting • Distillate treating

Desalter troubleshooting
- Oily effluent • Poor dehydration and/or desalting • Workshop

Economic impact

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Training course fee (per delegate)

For bookings received before 3 September 2010 Course Fee = **£1498 +17.5% VAT**
A late booking supplement of £200 +17.5% VAT will be applied to all bookings received after 3 September 2010

Reservation form

Please make a reservation for the following delegate:

Title First name

Surname

Position

Company

Address

Telephone

Fax

E-mail

Payment details

I wish to pay by:

◯ **Credit Card** ◯ **Cheque** ◯ **Bank Transfer**

Please note: Card payments to be made at time of reservation

◯ MASTERCARD ◯ VISA ◯ AMERICAN EXPRESS ◯ MAESTRO

Card holder's name

Card number

Start date Expiry date

Security no

Last 3 digits on back of card (AMEX – 4 digits on front of card)

Signature

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5 easy ways to book

1
Register online at:
gtforum.com/desaltinguk

2
Email us at:
training@gtforum.com

3
Complete and return this form by fax to:
+44 (0)20 7504 3730

4
Complete and return this form by mail to the address overleaf

5
Simply call with details on:
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Event code:
4543/10

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ERTC Training

2010 Course listings

Blending
10 – 12 March 2010, London
www.gtforum.com/blending

Watertreating
17 – 19 March 2010, London
www.gtforum.com/watertreating

FCC
24 – 26 March 2010, London
www.gtforum.com/fcc

Introduction to refining
12 – 14 April 2010, London
www.gtforum.com/introrefining

Distillation
5 – 7 May 2010, London
www.gtforum.com/distillation

Improving refinery profit margins
5 – 7 May 2010, London
www.gtforum.com/refineryprofit

Hydrogen production by steam reforming
23 – 25 June 2010, London
www.gtforum.com/hydrogenprod

Refinery desalting
29 – 30 September 2010, London
www.gtforum.com/desaltinguk

Wastewater treatment
29 Sep – 1 Oct 2010, London
www.gtforum.com/wastewater

Hydrocracking
25 – 27 October 2010, London
www.gtforum.com/hydrocracking

Catalytic reforming
December 2010, London
www.gtforum.com/reforming

For more information, please visit the individual website listed here or send us an enquiry via **training@gtforum.com**

Course presenters

Tom Collins is Vice President, Electrostatic Process Division of Allied Technology Pasadena, Texas. He has 30 years of desalting experience and current responsibilities include technical sales, process review, desalter design, troubleshooting, training, optimization and business development.

He started in the Technical Service Department for Petreco in 1980 servicing desalters worldwide, and has spent his entire career in the field of desalting.

He has authored and co-authored papers on desalting for American Institute of Chemical Engineers and has been active in National Petroleum Refining Association for over 20 years.

Tony Potter is a consultant for Nalco for crude oil treatment. He has 38 years of experience in specialty chemical applications for processes in a multitude of industries.

He worked for Betz Laboratories, Inc., Exxon Chemical, and Nalco Company. For 27 years he worked in the field of desalting, providing technical training, program evaluation, customer presentations, start-up assistance, and ongoing desalter system optimization and troubleshooting.

Tony has assisted refineries around the world in improving desalter system performance. His expertise is specifically in crude oil desalting operations, product development, and operational training.

He holds a BS degree in Chemical Engineering from Purdue University.

Brad Mason is the Global Desalting Industry Development Manager for Nalco Company, Energy Services Division, in Sugar Land, Texas.

He has over 14 years experience in the hydrocarbon processing industry. He is responsible for marketing, technical support, program development and strategic planning of Nalco's refinery process chemical programs used in crude management.

He has experience in refineries in North America, Europe, and the Asia Pacific area, and holds a B Technology degree in Geochemistry from Macquarie University (Sydney, Australia).

Adriana Lobo
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