

# **REFRACTORY TRAINING COURSE**

FOR

## **HPI & PETROCHEMICAL**

**PRESENTED BY:**

**CANNON, HANCOCK, BIGGS & ASSOCIATES**

*In conjunction with*

**DARWISH PETROLEUM & IND. SERV. W.L.L**

**PAPERS PRESENTED BY :**

**DR JOHN HANCOCK – CREATOR OF ACTCHEM  
MR DARROL BIGGS – THIRD PARTY INSPECTORATE**

**DATE: 25 –28<sup>TH</sup> JANUARY 2010**

**VENUE: DOHA, QATAR**



# REFRACTORIES FOR

# **HPI & PETROCHEMICAL**

*PRESENTED BY: CANNON & HANCOCK, BIGGS & ASSOC. CC*






## THE PROBLEM

Refractories are a critical part of the operation of most high temperature units namely; **FCCU, SRU, Reformers, Reactors, Fired Heaters, Wastes Heat Boilers, Sulphur Pits, Ducting and Stacks** to name a few. These linings are frequently a major cost item both in general maintenance and also the unscheduled downtime of production units arising from premature refractory failure.

Refractory technology is changing so rapidly and the price of refractory materials is continuing to escalate so rapidly, that all users must conduct regular value audits on their refractory purchases.









## WHY IS THIS COURSE DIFFERENT?

We will equip delegates with the necessary skills to assess the **RISK OF REFRACTORY FAILURE** and to **EXAMINE DESIGN CONCEPTS**.

-  Purchase Specifications
-  Materials
-  Installation
-  Heat-up
-  Operation

## WHO SHOULD ATTEND?

The course is a necessity to people who have a responsibility for refractory purchases, inspections and who are involved in a production function. The latter will find the course of great value in understanding the relationship between refractories and process operations.

 Maintenance Engineers	 Project Management
 Inspectors	 Metallurgists
 Buyers	 Operators
 Production	 Refractory Supervisors

Over 340 delegates have attended the Training Course in a period of 7 years (*seating is typically limited to max. 30 delegates per course*).

Courses have been presented in **Australia, Bahrain, UK, Europe, South Africa and United Arab Emirates.**

If you would like more information on the practicality of the course, please contact us and we will provide a list of the previous delegates for you to contact or visit : [www.refractorytraining.com](http://www.refractorytraining.com)

## **REFERENCES**

“Good overview of subjects - gained an understanding of practical & theoretical limitations also risk areas” – **FOSTER WHEELER**

“very informative and educational from an inspection point of view” – **FLUOR**

“course helped me with my knowledge of inspection and repair methods, thanks” – **SAPREF (SHELL/BP)**

“good focus on things to be aware of” – **ENGEN (PETRONAS)**

“Course very well delivered. Information was in depth and beneficial. I was able to relate the theory to my practical experience.” – **In-house course at Chevron Wales**

“what an excellent course” – **SASOL**

“good understanding of refractory technology and poses questions which require participants to think about” – **KANTEY & TEMPLER**

“very practical, learned a lot” – **NATREF (TOTAL)**

“the most informative refractory course I have attended” – **In-house course at BAPCO (Bahrain)**

“Excellent course, should be attended by all supervisors, very good” – **In-house course at ADGAS – UAE**

“A must for inspection departments” – **DOLPHIN ENERGY – DUBAI ANNUAL COURSE**

“Very informative – good overall content in a specialist field” - **Dolphin Energy – Dubai Annual Course**

“Well balanced course” – **BP Oil – Australia**

“Excellent course, clarifying many aspects of refractory theory and practise. Interesting to have a global perspective of the Refractory World.” – **In-house course at Chevron**

## PROVISIONAL PROGRAMME

### Module 1 - DAY 1 –REFRESHER

- ✚ WELCOME
- ✚ Introduction to Refractories:
  - Terminology
  - Raw Materials
  - Testing & Terminology
  - Installation Equipment
  - Castables
  - Bricks & Mortar
- ✚ Refractory Installations

### MODULE 2 - DAY 2

- ✚ WORLD INDUSTRY OVERVIEW
- ✚ BASIC CONCEPTS
- ✚ SPECIFIC RAW MATERIALS FOR REFRACTORIES IN HPI & PETROCHEM
- ✚ TESTING & CONCEPTS
- ✚ INSTALLATION – SKILLS & EQUIPMENT
- ✚ CASTABLES : ASPECTS OF CONSISTENCY & QUALITY

## DAY 3

- ✚ REFRACTORY ANCHORS
- ✚ HEAT TRANSFER THROUGH REFRACTORIES & THERMAL CONDUCTIVITY CALCULATIONS
- ✚ DRY-OUTS AND COMMISSIONING OF LININGS
- ✚ WHY REFRACTORIES FAIL?
  - TEMPERATURE
  - THERMAL SHOCK
  - EROSION / ABRASION
  - ATMOSPHERE
- ✚ MOVIES ON REFRACTORY INSTALLATION TECHNIQUES

## DAY 4

- ✚ REFRACTORY SPECIFICATIONS FOR HPI & PETROCHEMICAL PLANTS
- ✚ OVERVIEW OF REFINERY & PETROCHEMICAL EQUIPMENT
- ✚ REFRACTORY INSPECTION
  - THEORETICAL
  - PRACTICAL
- ✚ CRITERIA FOR REPAIRS
  - THEORETICAL
  - PRACTICAL (incl. unplanned repairs & problem solving)
- ✚ Health & Safety (toxic materials, dumping, safety standards in refractory demolitions etc.)
- ✚ NEW TECHNOLOGY & TRENDS

***QUESTIONS AND HANDING OUT OF CERTIFICATES***

## 4 EASY WAYS TO REGISTER

- 1. By phone**  
+ 974 468 3993 **Office (Jayantha)**  
+ 27 83 275 8948      Darrol Biggs
- 2. By fax**  
+974 468 7725
- 3. By Post**  
P.O. Box 350  
Doha  
Qatar
- 4. By e-mail**  
Darrol Biggs - [dcbiggs@mweb.co.za](mailto:dcbiggs@mweb.co.za)  
Jayantha – [dpis01@qatar.net.qa](mailto:dpis01@qatar.net.qa)

## REGISTRATION FORM

<b>Full Names (for certificate purposes)</b>	
<b>Passport No.</b>	
<b>Company</b>	
<b>Designation</b>	
<b>Address</b>	
<b>Tel. No.</b>	
<b>Fax No.</b>	
<b>Cell. No.</b>	
<b>E-mail address</b>	

## PAYMENT INFORMATION

**Please note payment must be made in full, on or before the day of the Training Course.**

	<i>tick</i>		<input checked="" type="checkbox"/>
<b>Registration Fee:</b> <b>Module 1</b> One Day (Refresher)	\$ 1 000,00		<input type="checkbox"/>
<b>Module 2</b> Three Day (Theory)	\$ 3 000,00		<input type="checkbox"/>

**Note:**

1/ Accommodation costs are not included in the course fee. Accommodation assistance can be obtain from **DPIS**

2/ Course fees includes lunch and coffee and tea and course material.

**3/ Seating is limited to 30 delegates and is on a first come first service basis.**

**Cheques payable to: Darwish Petroleum & Ind. Serv. w.L.L.**

Purchase Order No.: .....