Two-days intensive training on "Reformer tube: damage mechanisms, failure investigation, inspection and Remaining life assessment




Dates: 2nd & 3rd August, 2019 **Timing**: 9:00 am to 6:00 pm

Venue: Evolve by TCR, 215 Pancham Icon, Nr. D-mart, Vasna Road, Vadodara, Gujarat.

Course Objective:

- ✓ Understating of damage mechanisms prevailing in the reformer tube
- ✓ Gain a valuable practical understanding of principles of degradation that occurs in short term and long-term operation of reformers.
- ✓ Design aspects leading to failures.
- ✓ Welding issues related to reformer.
- ✓ Metallurgical understanding of the reformer tubes.
- ✓ Knowledge to increase the problem-solving attitude and take the first-hand judgment on the reformer tube failures.
- ✓ Attitude to analyze the difference in metal behavior helps to decide better mitigation to the persistent tube failures;
- ✓ Recognize general procedures, techniques and precautions in failure analysis and how stress systems relate to fracture of ductile and brittle materials.
- ✓ Achieve the knowledge required to conduct or supervise basic failure investigation and effectively communicate with metallurgists & other experts on more complicated cases. Invention to improve reliability of company operations, cost savings, increase profitability, and enhances safety.

Who should attend?

- ✓ Engineers of middle management level
- ✓ Maintenance / Inspection Engineers
- ✓ Process engineers
- ✓ Plant Engineers / Managers
- ✓ QA / QC Engineers
- ✓ Reliability Engineers
- ✓ Metallurgical / Materials Engineers
- ✓ HAZOP Engineers / Managers
- ✓ Other Technical, Laboratory, Sales Personnel, Engineers from allied disciplines, management and administrative staff who need a working understanding of metals and their applications.

Registration:

The course is limited to 20 participants only and will be decided on first come first served basis. Interested candidates can register by filling attached registration form. The course fee includes participation, course material and stationery. Tea / coffee and working lunch will be served. Participants have to make their own arrangements for accommodation and local conveyance. The course fee is non-refundable; however, in the event of cancellation of training program by TCR for some unavoidable reasons, it will be refunded. TCR accepts the change in nomination.

Course fee:

Single participant: Rs. 15,000.00 for Indian delegates & USD 450 for Foreign delegates.
10 % discount in case of 3 or more participants from same organization. GST @ 18.00 % applicable on above fees.

Payment mode:

Interested participants should post/ E-mail the registration form along with DD/at par cheque in favour of "**TCR ADVANCED ENGINEERING PVT LTD**." at the address mentioned in attached registration form.

Forward your Registration forms to:

Mr. Rajesh Lakhnotra, HOD - Training
TCR Advanced Engineering Pvt. Ltd.,
250/9 GIDC, Makarpura, Vadodara, Gujarat.
Ph: 0265-2657233, 7574805594-96
Email: evolve@tcradvanced.com
Mobile: +91 7574801050

Registration form can be downloaded from our website:
http://tcradvanced.com/coursecalender.php

For more course details, check our FB page: -
https://www.facebook.com/EvolveTCR/

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***** Please contact our training centre for any specific or customised programs.***

Faculty:

The course will be conducted by renowned experts with vast experience in respective field. Course faculty are:

Mr. Paresh Haribhakti
MD, TCR Advanced

Authored the book titled as "Failure Investigation of Boiler Tubes".
He has over two decades of experience in the field of metallography and microstructure examination and has solved more than 3000 industrial problems. He is pioneer in promoting in situ-metallography.

- Solved materials engineering problems and performed failure analysis on components from petrochemical plants, oil and gas transmission pipelines, offshore structures, ships, pharmaceutical plants, food processing equipment, gas turbine engine components, and weldments.

Mr. Hemant Pradhan
Consultant, TCR Advanced

- He is a Mechanical Engineer with over 35 years of experience in design, detail engineering services, projects, inspection, mechanical construction, procurement, estimation etc. for fertilizer and petrochemical plants and projects.
- His major experience field has been design, detailed engineering, trouble shooting of fertilizer plants like ammonia, urea, DAP, ASP, AS, phosphoric acid, sulphuric acid etc.; petrochemical plants like Caprolactam, Melamine, Nylon-6, and utility/co-generation/ boiler, water treatment plants.
- He has participated in design conferences at international and national level with process licensors/ detail engineering firms like M/s Enco, Switzerland; M/s INCRO SA, Spain; Tunisian Joint Venture, Tunisia; M/s Schmidt & Clemens, Germany M/s Davy Powergas, M/s Uhde, M/s Linde, at India.

Mr. Ketan Upadhyay
GM – Reliability Engineering
TCR Advanced

- He has experience of 26 years in the field of NDE, Acoustic emission techniques, Vibration measurement and signature analysis, Failure Investigations, microstructure interpretation, Scanning electron microscopy and digital imaging system He is a qualified level II for Acoustic Emission testing (IISC Bangalore), Vibration Analyst VT-II (Entec IRD) and Ultrasonic Flaw Detection (EEC Mumbai) techniques.

Mr. Sandeep Singh

NDT Manager Level III
TCR Advanced

- He is qualified as NDT Level III in M.T., P.T., U.T., R.T. and E.T.
- Fully Conversant with various codes such as ASME (Sec V, Sec VIII, Sec IX, ASME B31.1, B313.3, code case 2235), API 653, structural BS codes etc.
- Having more than 5 Years of experience in NDT and Quality Control at various Power projects, Petrochemicals, Refineries, Structural and Automobile Industries.

Key Benefits:

- ✓ Understating of damage mechanisms prevailing in the reformer tube
- ✓ Gaining **a** valuable practical understanding of principles of degradation that occurs in short term and long-term operation of reformers.
- ✓ Understanding of general procedures, techniques and precautions in failure analysis and how stress systems relate to fracture of ductile and brittle materials
- ✓ Metallurgical understanding of the reformer tubes

Training Sessions
Topics
Introduction
Basics of metallurgy and heat resistant stainless steel
Design considerations of reformer tube
Damage mechanism in reformer tube
Metallurgical evolution of creep resistance reformer tube material
Remaining life assessment of reformer tubes
When to retire reformer tube
NDT in reformer tubes
Failure investigation approach and case studies

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