







Two-Day Training Programme on Boiler Tube Failure Mechanism, Investigation and Mitigation

-  **21th & 22nd Jan, 2027**
-  **Evolve by TCR**
215, Pancham Icon,
Vasna Road, near D-Mart,
Vadodara, Gujarat 390007
-  **Fees: INR 15,000/-**
for single person +
GST 18% extra.
-  **10% Discount** on total
amount of invoice for 03
or more nominations from
the same organization.

Course Content

- Materials & metallurgy.
- Boiler tube damage mechanisms.
- Water chemistry.
- Erosion problems.
- Boiler inspection.
- Boiler tube NDT inspection.
- Case studies of boiler tube failure investigation.
- TCR lab visit and QA session.

Who Should Attend

- Maintenance Engineer
- Inspection Engineer
- Reliability Engineer
- Plant Engineer
- QA-QC Engineer
- Metallurgical/ Materials & HAZOP engineers
- Boiler inspectors

Objectives of the Training Programme:

- **Understand Boiler Tube Damage Mechanism:** Identify and interpret common damage mechanisms such as corrosion, erosion, overheating, and stress - related failures that lead to boiler tube degradation.
- **Learn Degradation Principles Across Service Life:** Understand the principles governing both short-term operational damage and long-term degradation affecting boiler reliability and performance.
- **Analyse Metal Behaviour Under Operational Stress:** Study the behaviour of boiler tube materials under various stress and thermal conditions to diagnose and prevent failure more effectively.
- **Apply Failure Analysis Techniques:** Gain practical knowledge of standard failure analysis procedures, including damage assessment, sampling, and precautions during investigation.
- **Understand Stress Systems and Fracture Modes:** Learn how internal and external stress systems influence material failure, and distinguish between ductile and brittle fracture mechanisms.

Meet The Faculty

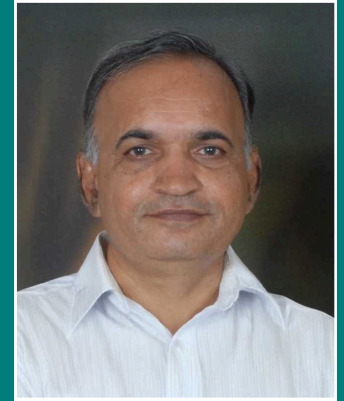


Mr. Paresh Haribhakti, MD

- He holds a post-graduate degree in Materials Technology from M.S. University, providing him with a solid academic foundation in metallurgy and materials science. With a leadership role at TCR Advanced Engineering Services, he has accumulated extensive experience in metallurgical engineering, and has solved over 9,500+ industrial challenges. He is expert in risk mitigation and management.
- Paresh has authored 'Failure Investigation of Boiler Tubes: A Comprehensive Approach', published by ASM International, USA. He passionately advocates for eliminating failures across industries and working towards predicative approach. His commitment to advancing knowledge and expertise is evident through his active participation in global conferences and contributions to leading metallurgical journals. He is an acclaimed expert for damage mechanism of oil & gas, refinery, petrochemicals, power, fertilizers.

Mr. M.N. Patel

- BE & ME in Metallurgical Engineering from Maharaja Sayajirao University of Baroda. Brings over 33 years of teaching experience at undergraduate and postgraduate levels in subjects such as Mechanical Metallurgy, Plastic Deformation of Metals, Welding Metallurgy, Physical Metallurgy, Non-Destructive Testing (NDT), and Failure Analysis.
- He has guided 20+ postgraduate dissertations and published 16 technical papers focusing on weldability of steels, corrosion, stainless steel sensitization, and failure investigations.
- His expertise includes microstructural analysis, material characterization, welding metallurgy, SEM/EDS techniques, and metallurgical failure analysis, with strong application in correlating microstructure to material performance.



Mr. Nikhil Sabhaya

- He is a post graduate in Metallurgy. He has over 5 years of hands-on industrial experience in the field of Boiler Remaining Life Assessment (RLA) and Non-Destructive Testing (NDT). He is an ASNT Level III certified professional in ET, UT, PT, and MT. Additionally, he holds API 510 certification as a Pressure Vessel Inspector and is a CSWIP 3.1 Certified Welding Inspector. His deep practical experience, combined with his knowledge of various national and international codes and standards, enables him to effectively formulate and validate test procedures for diverse NDT applications.
- He has working experience in NDT testing at various Power projects, Petrochemicals, Refineries, Structural and Automobile Industries. He has an expertise in NDT and the application of various NDT methods for solving problems of Industry.



Subject Matter Expert (Another Faculty)

- M.Sc. (Chemistry) | Senior Power Plant Chemistry Expert with 25+ years of experience in thermal power plants (up to 600 MW), specializing in boiler chemistry, corrosion control, and BTL investigations.
- He links fuel, water, and steam chemistry with damage mechanisms like FAC, fireside corrosion, overheating, and deposits—supporting effective KBA and boiler integrity assessment.
- With strong hands-on expertise in troubleshooting, root cause analysis, and life-extension strategies, he helps prevent failures and improve reliability, delivering practical, case-based sessions aligned with real plant challenges.



For NFET/ RTGS/ Bank transfer:

Account No: 05730400000034
IFSC: BARB0INDMAK (5th letter is zero)
Bank: BOB, Makarpura Branch
Merchant Name: TCR ADVANCED ENGINEERING PVT LTD
UPI ID : tcrad93762@barodampay



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