



**Date:** 8<sup>th</sup> & 9<sup>th</sup> November, 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:

A Welding Procedure Specification (WPS) is the formal written document describing welding procedures, which provides direction to the welder or welding operators for making sound and quality production welds as per the code requirements. The purpose of the document is to guide welders to the accepted procedures so that repeatable and trusted welding techniques are used. A WPS is developed for each material alloy and for each welding type used. Specific codes and/or engineering societies are often the driving force behind the development of a company's WPS. A WPS is supported by a Procedure Qualification Record (PQR or WPQR). A PQR is a record of a test weld performed and tested (more rigorously) to ensure that the procedure will produce a good weld. Individual welders are certified with a qualification test documented in a Welder Qualification Test Record (WQTR) that shows they have the understanding and demonstrated ability to work within the specified WPS. The purpose of training is to render knowledge of WPS/PQR and to train the engineers for destructive and non-destructive testing of weld coupon.

### Who should attend?

- Fresh welding engineers
- Welding Supervisors
- Welding inspector and welders
- Persons involved in Fabrication
- Inspection Engineers
- QA/QC Engineers, Managers

### Registration:

The course is limited to 20 participants only and participation 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. 9,500.00 for Indian Delegates

USD 230 for Foreign Delegates.

GST@18% on above rate.

10% discount in case of 3 or more participants from same organization.

### Payment mode:

Interested participants should mail/ E-mail the registration form along with DD/at par cheque in favour of "TCR ADVANCED ENGINEERING P 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,  
Makarapura, Vadodara, Gujarat. Ph: 0265-2657233,  
7574805594-96

Email: [roushan@tcradvanced.com](mailto:roushan@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/>

### Objective:

- The objective of the workshop is to deliver and the share the knowledge of WPS and PQR to the fresh welding engineers, supervisors, welding inspectors and welders.

### Topics to be covered:

- Introduction to Steels, Alloy Steels and Stainless steels
- Basic Welding Methods (SMAW, GTAW, GMAW and SAW)
- Metallurgical aspect of welding
- Understanding of ASME SEC IX requirements
- Destructive and Non-destructive testing of Welded structures
- Importance of WPS/PQR
- Essential and non-essential variables
- Case studies on WPS/PQR/WPQ
- To develop a test coupon by SMAW in 1G position
- To demonstrate destructive methods of the weld as per ASME codes

## Faculty:

The course will be conducted by renowned experts with vast experience in Metallurgy.



### **Mr. Paresh Haribhakti**

**Managing Director,**  
**TCR Advanced Engineering Pvt. Ltd.**

Authored the book titled as "Failure Investigation of Boiler Tubes".

With an experience of 29 years in metallography and microstructure, Paresh Haribhakti has solved more than 4000 industrial issues. Being the pioneer in the field of in-situ metallography and Materials engineering, he has an expertise in petrochemical plants, oil and gas transmission pipelines, offshore structures, ships, pharmaceutical plants, food processing equipment, gas turbine engine components and weldments.



### **Mr. M. N. Patel**

**Ex. Associate Professor, Metallurgy & Materials Engineering Department**  
**Consultant, TCR Advanced Engineering Pvt. Ltd**

M.N. Patel has 35 years of teaching experience in Plastic Deformation of Metals, Mechanical Metallurgy, NDT and Failure Analysis in Under Graduate as well as Post Graduate levels. He also has an expertise in Mechanical behaviour of metals, selection of materials and failure analysis, physical metallurgy and welding metallurgy. He has written 16 research papers published by national journals in the field of weld ability of steels, corrosion of steels, sensitization of stainless steel and failure analysis.



### **Mr. Kamlesh Rana**

**Technical Manager**  
**TCR Advanced**

He has vast experience of fabrication and forging fields.

He has more than 20 years of experience.

He is qualified internal auditor for ISO 9001 and has handled API audits.

He headed quality and assurance department of various forge-shops.



### **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:**

- Understanding of basic Welding Methods (SMAW, GTAW, GMAW and SAW)
- Understanding of ASME SEC IX requirements
- Understanding the Metallurgical aspect of welding
- Understanding the Importance of WPS/PQR
- Understanding the Destructive and Non-destructive testing of Welded structures

