



Date: 8th & 9th 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.

- 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.

Course Content:

- ✓ 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

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, 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/>

Faculty:

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



Mr. Paresh Haribhakti
MD, TCR Advanced

- 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. M. N. Patl
Ex. Associate Professor
Metallurgy & Materials Engg Dept. M. S. University
TCR Consultant

- He has 33 years of teaching experience in UG and PG level in subjects like Plastic Deformation of Metals, Mechanical Metallurgy, NDT and Failure Analysis, Mechanical behaviour of materials, Selection of Materials and Failure Analysis, Physical Metallurgy and Welding Metallurgy.
- He has Published 16 research papers in various national journals in the field of weld ability of steels, corrosion of steels, sensitization of stainless steels 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-

Training Sessions

Topics

Introduction to welding metallurgy

Basic Welding Methods (SMAW, GTAW, GMAW and SAW),
Metallurgical aspect of welding

Understanding of ASME SEC IX requirements, WPS/PQR/WPQ
as per ASME sec IX – Part I

Non-destructive testing of Welded structures

ASME SEC IX – Part II

ENWPQ/PQR

Demonstration / Practical on WPS / PQR

Question Answer / Feedback session