

# Corrosion Studies by TCR Arabia

## Sour Gas Corrosion Testing – Level II

The topics covered in this course include:

### **Module 1: Hydrogen Induce Cracking (HIC) and Sulfide Stress Corrosion Cracking (SSCC) - 4 point bend Test**

1. Measuring dimension of samples and calculating required test solution volume.
2. Cleaning and test for degreasing as per ASTM F21.
3. Calculation of deflection based on applied load which depends on steel grade.
4. Entering required data for the test.
5. N<sub>2</sub> purging and H<sub>2</sub>S gas bubbling for HIC and SSCC (4 point bend test) .
6. Idiomatic titration of test solution.
7. Monitoring and inspection of test.
8. Neutralization of test solution before deposing to waste tank.
9. Record of chemical consumption and waste solution.
10. Evaluate test result

### **Module 2: Sulfide Stress corrosion cracking (SSCC) test, Uni-axial Constant Tensile Load**

1. Calculate applied load based on the steel grade.
2. Loading and un loading of test specimen into the testing machine .
3. Familiarization with gas management.
4. Selection of required parameters to enter the test mask.
5. Evaluation of results

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### **Module 3: Ultrasonic Crack Detector**

1. Setting ultrasonic crack detector's parameters for 1st and 2nd operational level .
2. Select appropriate speed and resolution to get correct value.
3. Calibration of machine .
4. Select proper analysis line for calculating HIC parameters .
5. Print and save the raw data of scanned samples.

The duration of this course is for 5 days and it is conducted by a Senior Metallurgist. Students will be given a course completion certificate at the end of this course.

All courses, unless specified in advanced with the client, will be conducted at the training facility located at: **TCR Arabia Limited | Gas Gardens, King Abdulaziz Seaport, Dammam, Saudi Arabia**