

# Non-Destructive Testing Courses by TCR Arabia (1/3)

## Eddy Current Testing – Level I

### Scope

This course prepares a candidate to Perform Surface Eddy Current Inspection and perform:

- Specific Calibrations
- Specific NDT
- Specific Evaluations for Accept or Reject Determinations according to written Instructions
- Record Results

### Training

#### GENERAL TRAINING

#### Electrical Parameters

- Resistance
- Inductance
- Impedance

#### Electromagnetism

- Faraday's Law
- Lenz's Law

# Non-Destructive Testing Courses by TCR Arabia (2/3)

## Eddy Current Testing – Level I

### Eddy Current Theory

- Generation of Eddy Currents
- Impedance changes by Eddy Currents
- Effect of change of impedance on instrumentation

### Impedance Curves

- Conductivity Curve
- Lift Off Curve
- Permeability

### Types of Eddy Current Sensing Elements

- Probes
  1. Absolute
  2. Differential
- Lift-off
- Theory of operation

### Materials

- Inspection of Non-Ferromagnetic Materials
- Inspection of Ferromagnetic Materials

### Special Probes

- Lift Off Insensitive
- Fastener Probes- Ring Probe

### Calibration Standards

- Conductivity Standards
- EDM notch Surface Standards

### Applications

- Surface Inspection
- Inspection of Airframes
- Airframe Fastener Inspection
- Turbine Blade Inspection
- Inspection of Petrochemical Piping

# Non-Destructive Testing Courses by TCR Arabia (3/3)

## Eddy Current Testing – Level I

- Surface Weld Inspection

### **SPECIFIC TRAINING**

- Surface ECT Procedure
- ASME Section V

### **PRACTICAL TRAINING**

- Setting up the Instrument
- Selection of Frequency
- Calibrations
- Test on Various Samples
- Prepare test Report

### **EXAMINATIONS**

- General
- Specific
- Practical Tests

Candidates must score a minimum of 70% in each test and a minimum of 80% average for all the three tests.

The duration of this course is for 5 days and it is conducted by NDT experts from TCR Arabia. Students will be given an ASNT Level I 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 I Gas Gardens, King Abdulaziz Seaport, Dammam, Saudi Arabia**