

Formation - Non-Destructive Testing for Petrochemical Industries



NDTIW-EN-P



Présentiel



5 jours

This course explains basic and advanced non-destructive testing methods used in the Oil & Gas industry as well as the chemical industry

Niveau

Fondamentaux

Public

Experienced operation and maintenance engineers, managers and technicians involved in the technical aspects of the Oil & Gas, refineries and chemical industries

Objectifs

Attendees will be able to implement the following skills:

- Identify available non-destructive examination methods
- Select effective non-destructive examination methods based on the type of degradation, equipment and material
- Evaluate external on stream NDT and internal NDT during plant shutdown
- Understand maintenance work linked to NDT applications

Pédagogie & ressources techniques

- Case studies to identify capabilities and limitations of each NDT
- Practical demonstration of non-destructive examination in a workshop

Évaluation des acquis

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prérequis

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Programme

BASIC & ADVANCED NDT TECHNIQUES

2 days

Visual test, Liquid Penetrant test (PT), Magnetic Test (MT), Radiographic Test (RT), Ultrasonic Testing (UT, TOFD, Phased Array, IRIS), Leak Testing (LT), Electromagnetic testing (ET), Positive Material Identification (PMI), Infrared Thermography (IR), Hardness, Acoustic Emission, Magnetic Flux Leakage.

For each technique, study:

- The basic physical principles.
- The type of degradation to be detected.
- The limitations and exclusions.
- The pros and cons compared to other NDT.
- Safety and health features.

NDT certification according to ISO and ASNT. Dates of expiration and re-issue.

PRACTICAL APPLICATION

3 days

Visual:

- Identify local or generalized corrosion, read color and aspect of rust/corrosion compound to obtain preliminary clues about the degradation type.
- Select appropriate light intensity.

Penetrant test and magnetic test:

- Surface preparation methods, different types of penetrants and developers.
- Observation of the cracks.

Thickness UT, shear wave, TOFD:

- Surface preparation, types of probes.
- Analysis of the various signals.

Radiography - X rays and gamma rays:

- Understand the relationship between energy and time exposure.
- Review safety issues during field or shop choosing.
- Read radiographic films to analyze remaining thickness and cracks.
- Discover new developments such as digital radiography.

IR thermography: after appropriate tuning, manipulate the camera to see hot spots.

Hardness:

- Practice Brinell, Rockwell or Vickers methods; compare results for carbon steel and stainless steel.
- Practice test on base metal, heat affected zone, and weld and infer the tensile strength.

PMI: practice the method on different metallurgies.

IFP Training est référencé au DataDock. Rapprochez-vous de votre OPCO pour connaître les possibilités de financement de cette formation.
Pour vérifier l'accessibilité de cette formation à une personne en situation de handicap, contactez notre référent à l'adresse suivante :
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