

Training - Well Integrity Engineering



WELINTE-EN-P



Face-to-face only



35 days

This course provides in-depth technical knowledge of well integrity design, management, and maintenance in order to hold rapidly and very effectively, the position of field engineer, design engineer or project engineer

IFP Training Certificate

Graduate Certificate

Level

Knowledge

Public

Engineers (particularly recently graduated engineers or engineers in conversion) looking to acquire in-depth knowledge and best practices of Oil & Gas production

Objectives

Attendees will be able to implement the following skills:

- Calculate different casing strings applying well integrity roles
- Select the right position of casing shoes to safely drill the well
- Select the casings as per the constraints encountered while drilling in order to maintain the well integrity
- Design primary cementing techniques and procedures and select cement and necessary additives
- Assess the quality of a cementing job and which equipment is required in a conventional case
- Design the corresponding completion safe procedures calculate tubing movement and forces
- Work on complex completion issues with specialists and select the wellhead according to operational conditions
- Write and supervise maintenance and testing procedures on wellhead
- Recognize the technical, operational and organizational solutions applied to well integrity management
- Design the process of well integrity management and review well integrity within the framework of all strategic operations

Pedagogical & technical resources

- Highly interactive training with industry specialist lecturers
- Multiple teamwork sessions and industrial case studies
- Numerous animations & videos
- Knowledge assessment on a weekly basis

Assessment of achievements

- 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

Prerequisites

No prerequisites are necessary to follow this course

Responsible

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

Program

CASING DESIGN & APPLICABLE STANDARDS

5 days

Drilling and casing program, wellhead, characteristics of casing.

Shoe positioning: hypotheses to be considered, casing point. Kick tolerance, casing point. Kick tolerance & well integrity.

Casing String Calculation: principles and assumptions, stress cases study (collapse, burst, tension, triaxial study, safety factors).

Casing selection.

CEMENTING: PRIMARY & REMEDIAL, QUALITY CONTROL OF CEMENT

5 days

Techniques and job procedures: primary cementing, cement job design, job planning and preparation, casing running, cementing job, cementing calculations.

Cement and slurries: cement, special slurries and additives, formulation and laboratory tests, rheology of mud and slurries.

Cement equipment: pumps, mixers, cementing head, cement plugs.

Cement job evaluation: principles and interpretation of the cement logs, thermometry, Sonic (CBL - VDL), Ultrasonic (USIT), log analysis on a real case.

WELL COMPLETION EQUIPMENT, DESIGN, ACCEPTANCE CRITERIA

5 days

Well completion equipment: functions to be carried out and corresponding equipment.

Production string(s) configurations (conventional or tubing less, single or multi-zones).

Production wellhead, tubing & connections, packers and accessories, bottom hole devices.

Subsurface safety valve (subsurface controlled, surface controlled).

Calculation of tubing movement and forces.

Well completion preparation and Implementation.

FLUIDS BEHAVIOR & FLOW ASSURANCE

5 days

Thermodynamic applied to well effluent.

Flow patterns, main considerations.

Deposits and sand production monitoring and maintenance.

Corrosion monitoring and maintenance.

WELL HEAD MAINTENANCE & WELL INTERVENTION

5 days

X-mas tree specifications: X-mas tree (natural flowing wells), gas well X-mas tree, requirement for materials, X-mas tree equipment and selection (MV, SSV, SV, WV, choke).

Wellhead monitoring and maintenance: Wellhead installation procedures, Wellhead protection during well intervention (pre-job and post job), Surface equipment monitoring maintenance, function tests, pressure test, plan & execute maintenance. Well reinstatement.

Main types of intervention: measurement, maintenance, workover.

Main means (wireline unit, coiled tubing unit, snubbing unit, workover rig): principles, area of application, general procedures & well killing procedures & calculations.

WELL INTEGRITY MANAGEMENT

5 days

Well integrity management system: introduction, assets, organization and people, WI Direction.

Well integrity design and standards; well construction/completion

Well barriers: definition, requirement & design. Wellhead and tree equipment: valves, seals, accessories, Safety valves: downhole, surface. Leak detection.

Minimum integrity requirements vs. well life cycle/phases.

Annulus pressure management. Plug & Abandon, Handover.

Role and responsibilities over the various operational life of the well.

WELL INTEGRITY PROJECT

5 days

Project & presentation in front of a jury: the trainees perform a well integrity review on a drilling & completion project provided by IFP Training.

- Verification of casing design & selection.
- Verification of completion design & material selection (tubing, SCSSV, well head & accessories).
- Surface & subsurface well integrity tests
- Presentation in front of a jury.

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.

Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com