# Monitor Well Productivity & Flow Line Pressure Safety Valve



DRPT153

# COURSE TITLE Monitor Well Productivity & Flow Line Pressure Safety Valve COURSE DATE/ VENUE 19<sup>th</sup>-23<sup>rd</sup> Jan 26' London, UK COURSE REFERENCE DRPT153 COURSE DURATION 05 Days

#### DISCIPLINE

Drilling, Reservoir & Petroleum Training

#### COURSE INTRODUCTION

Effective monitoring of well productivity and managing flow line pressure are crucial components of successful well operation, ensuring maximum output while maintaining safety and efficiency. This course is designed to equip professionals with the knowledge and skills necessary to monitor and optimize well productivity and safely manage flow line pressure through advanced pressure safety valve (PSV) systems.

#### COURSE OBJECTIVE

Upon successful completion of this course, the delegates will be able to:

- ✓ Gain a comprehensive understanding of well productivity indicators, and how to monitor and improve these performance metrics.
- ✓ Learn the role of flow lines and pressure safety valves in maintaining operational safety and efficiency.
- ✓ Explore the latest technologies for real-time data acquisition and interpretation, enhancing decision-making in the field.
- ✓ Understand the troubleshooting techniques for addressing common well productivity issues and flow line pressure problems.

### COURSE AUDIENCE

- Production Engineers: Engineers responsible for optimizing production rates and ensuring efficient well operation.
- ✓ Drilling Engineers: Professionals involved in drilling operations, looking to better understand well performance and flow line pressure management.
- Reservoir Engineers: Engineers working on reservoir management and well performance who want to monitor well productivity more effectively.
- ✓ Field Engineers: Engineers working on the ground, directly overseeing well production and pressure management operations.

#### COURSE CONTENT

Day 1: Introduction to Well Productivity and Flow Line Systems

Theme: Understanding the Basics of Well Productivity and Flow Line Systems

- Overview of Well Productivity <u>ACADEMY</u>
  - Key factors affecting well productivity (formation properties, reservoir pressure, wellbore conditions)
  - Types of wells: Oil, gas, water injection, and dual-purpose wells
  - Monitoring well production: Flow rate, pressure, temperature, and production decline curves
- Introduction to Flow Line Systems
  - Flow lines: Function and components in well production
  - Pressure control in flow lines and managing flowback pressures
  - Common flow line configurations: Vertical and horizontal flow systems
- Wellhead Equipment and Flowline Pressure Safety Systems
  - Overview of wellhead equipment and pressure safety systems
  - Types of safety valves and their function
  - Importance of pressure monitoring in flow lines

Activity: Study a basic well system layout and identify components affecting productivity and flow line pressure.

Day 2: Well Productivity Monitoring Techniques

Theme: Tools and Techniques for Measuring Well Productivity

- Measuring Well Productivity
  - Rate of production (oil, gas, water) and its importance in monitoring well performance
  - Measuring inflow and outflow rates
  - Techniques for pressure build-up tests and production logging
- Data Acquisition and Well Monitoring Systems
  - Real-time monitoring tools and systems: SCADA, automated data acquisition, and telemetry
  - Pressure gauges, temperature sensors, and flow meters
  - Using downhole sensors to monitor well performance and data interpretation
- Monitoring Well Performance Over Time
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  - Techniques for monitoring production decline curves
  - Wellbore integrity monitoring: Cementing and casing condition
  - o Identifying issues like scaling, sand production, and reservoir damage

Day 3: Flow Line Pressure Management

Theme: Managing Flow Line Pressure to Maintain Safety and Optimize Production

- Flow Line Pressure: Understanding and Importance
  - Pressure management in production systems
  - Pressure build-up vs. pressure drawdown
  - Key parameters affecting flow line pressure: Fluid properties, wellhead conditions, temperature
- Flow Line Pressure Safety Valve Systems
  - Role and types of pressure safety valves (PSV)
  - Working principles of PSV and its function in protecting flow lines

- Selecting the appropriate PSV for various conditions
- Flow Line Pressure Control Strategies
  - Managing and controlling pressure using choke valves
  - Pressure relief systems and emergency shutdown procedures
  - Monitoring and adjusting choke settings based on flow line pressure

Case Study: Review a well system incident caused by improper pressure management and discuss the safety valve and pressure control response.

Day 4: Troubleshooting and Addressing Well and Flow Line Pressure Issues Theme: Identifying and Solving Common Pressure-Related Problems

- Troubleshooting Well Productivity Issues
  - Common problems affecting well productivity (formation damage, equipment failure, scaling)
  - Techniques for diagnosing low production and flowback problems
  - Using diagnostic tools: Production logs, pressure tests, and well tests
- Flow Line Pressure Problems and Solutions
  - Causes of pressure spikes, drops, or fluctuations in flow lines.
  - Detecting leaks, blockages, and constrictions in flowlines
  - Corrective actions: Well shut-ins, blowout preventers, and pressure relief systems
- Pressure Safety Valve Failures and Troubleshooting
  - Identifying and diagnosing PSV malfunctions
  - Common PSV failures: Leaks, sealing issues, valve sticking
  - Preventative maintenance and troubleshooting PSV systems

Day 5: Optimizing Well Productivity and Safety Valve Operations

Theme: Advanced Techniques for Improving Well Performance and Pressure Safety Systems

- Optimizing Well Productivity
  - Techniques for enhancing well productivity (hydraulic fracturing, acidizing, artificial lift)

- Identifying when to use stimulation techniques for improving production
- Managing water and gas production in oil wells
- Advanced Flow Line Pressure Safety Valve Strategies
  - Reducing PSV failure risks through design and maintenance best practices
  - Implementing advanced monitoring techniques for PSV performance
  - Strategies for improving flow line efficiency and safety with automated systems
- Integrating Monitoring Systems for Optimization
  - Combining well productivity monitoring and flow line pressure systems for enhanced control
  - Use of real-time analytics for optimizing well performance and safety
  - The role of predictive maintenance in extending equipment life and preventing failures

# COURSE CERTIFICATE

**TRAINIT ACADEMY** will award an internationally recognized certificate(s) for each delegate on completion of training.

# COURSE FEES

£5,750 per Delegate. This rate includes participant's manual, Hand-Outs, lunch, coffee/tea on arrival, morning & afternoon of each day.

# COURSE METHODOLOGY

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions

