PROBLEM SOLVING AND PRODUCTION OPERATION OPTIMIZATION IN OIL COMPANIES PRD050

COURSE DESCRIPTION

Production optimization is a systematic approach to assess processes at new and existing facilities with an emphasis on energy efficiency, natural resource conservation and waste minimization. This course covers control well/flow lines parameters, take first actions (Analyze and evaluate all field operating parameters alert signs values (temperature, pressure, etc..), Perform first diagnostic and take corrective actions or in liaison with operators then with maintenance/well surveillance team. Also, the course checks flow lines, leakage, damages etc. and alert (Report any HSE incident to line management.

COURSE GOAL

To enhance the participants' knowledge, skills, and abilities necessary to help them in the evaluation, design and optimization of production systems to increase production and improve overall field efficiency.

COURSE OBJECTIVES

By the end of this course, participant will be able to:

- Apply oil well safety procedures & regulation
- Check flow lines, leakage, damages etc.
- Describe the problems encountered and the trouble shooting.
- Monitor the well productivity and other parameters that effect on the production
- Operate & check the control systems functions
- Check data accuracy, system function, report discrepancies to maintenance
- Flow line pressure safety valves its type, regulation, trouble shooting and integrity operations
- Explain theory behind flow lines, wellhead and check valves for preparing and testing according to standard procedures
- Well head and X-Mass Tree Maintenance, inspection and testing
- Flow line pressure safety valves its type, regulation, trouble shooting and integrity operations
- Manage the flow line and valve for test
- Understanding well testing procedures

WHO SHOULD ATTEND

- Production Controllers
- Production Operators

COURSE DURATION

5 Working Days

COURSE OUTLINES

1. Well Head Component
    - Type of well head
    - Well head integrity
    - Well head maintenance
2. Take First Action Based on Data Collection
    - Analysis and evaluate all field operating parameters
    - Perform first diagnostics and take corrective action
    - Methods of monitoring and reporting skills
    - How to monitor and measure the annulus pressure?
    - Christmas tree
    - Function of X-Mass Tree.
    - ESD System
    - Testing, Inspection & Maintenance services.
3. Introduction to Production system
    - Production system component
    - Reservoir performance system
    - Well performance system
    - Surface performance system
    - Production system integration & interaction
4. Production Rate & Pressure Drop
    - Pressure drop meaning and definition
    - Well production parameters
    - Relation between well productivity and pressure drop
    - Pressure drop and back pressure relation

5. Monitoring Well Performance

- Well productivity
- Productivity index
- Monitoring PWF
- Monitor Performance
- Inflow performance relation ship
- Controllers checks & reporting defective controls to maintenance
- Conducting root cause analysis for all operating parameters
- Overview of safety instrumentation systems (SIS)

6. Wellhead and Flow Line

- Check for wellhead pressure
- Flowline pressure failure analysis
- Prepare flow line for test
- Flow line test for leakage and damage
- Repair and replacement
- Procedure for flow line test according to standard
- HSE incident to line management

7. Operation Troubleshooting

- Troubleshooting of safety valve
- Troubleshooting of check valve
- Relief system failure analysis
- Root cause analysis

8. Monitor Production Problems

- Monitor gas oil ratio (GOR)
- Monitor water cut in production (W/C), Salt, H2S, etc.
- Take remedial actions based on as per operators' instructions
- Effect of GOR, WC, H2S and Salt on the production system

9. Production Operation

- Check for GC equipment as one unit
- Well assembling effect on production rate
- Back pressure & production rate relationship
- Operation according to international standard
- Operation according to international procedures
- Production optimization using check system analysis