BASIC OPERATIONAL TROUBLESHOOTING AND INSTRUMENTATION CONTROL IN CRUDE OIL PRODUCTION PRE010

COURSE DESCRIPTION

The increase in the size and complexity of facilities of process operations has resulted in maintenance being accepted as an important mainstream function in oil and gas companies. This course provides the participants with the means to properly operate and support the facilities of process operations in a way based on the good acquaintance with the modern technologies applied in this field. Trouble-shooting of crude oil processing and gas processing units are inclusive. Also, an effective SCADA system provides better front end for the process operators with enhanced graphics and plant mimics and also helps process and instrumentation engineers for better diagnostics and maintenance. A special emphasis on real life implementations, case studies and international standards would ensure participants to co-relate the theory with their day to day practice for the better production works.

COURSE GOAL

To enhance the participants' knowledge, skills, and abilities necessary to maintain the facilities of process operations of crude oil in good operational conditions and address the operation and control of a SCADA system and the associated devices and methods of control. This will include the applications of the control philosophy of SCADA for electrical facilities as well as the petrochemical industry for the production control.

COURSE OBJECTIVES

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

- Define troubleshooting.
- Identify the steps of troubleshooting.
- Understand the process of elimination
- Perform trouble-shooting of crude oil processing units
- Operate &check control systems functions (DCS, PLC, UPS, SCADA, etc.)

WHO SHOULD ATTEND

- Controllers.
- Instrumentation staff.
- Production staff.
- Maintenance Engineers.
- Supervisors interested to work in the field of SCADA, DCS/ Automation and Process Control.

COURSE DURATION

5 Working Days

COURSE OUTLINES

1. Introduction.
    - Definition of troubleshooting.
    - Steps of troubleshooting.
        - Identify the problem.
        - Determine the cause of the problem.
        - Correct the problem.
        - Return the process to service.
    - Sources of information.
2. The Process of Elimination.
    - Input / output testing.
    - Bracketing.
    - The serial method.
    - Half-splitting method.
    - Troubleshooting Examples.
3. Basic Operational Troubleshooting of Crude Oil Processing Units
    - Crude Oil Processing
    - Identifying a problem.
    - Taking preventive action.
    - Determining the cause of the problem.
    - Correcting the problem.
    - Returning the process to service.
4. Basic Operational Troubleshooting of Control Systems:
    - HSEMS standards and procedures as applicable.
    - An overview of control engineering.
    - An over view of PLC's
    - Basic control theory for a running system
    - Electrical circuits control systems and PLC
    - Power electronics and applications
    - SCADA control for electrical facilities

- Hierarchical Structure of Control Systems Current Scenario – PLC, SCADA and DCS based automation.
- SCADA programming and operations
- SCADA Communications
- Design/ Specifications and Selection
- Documentation and Project Engineering
- Application and Case Study: SCADA for Oil & Gas Industry.
- SCADA troubleshooting guide Operate &check control systems functions (DCS, PLC, UPS, SCADA, etc) then take remedial action Perform studies on production surface facilities to minimize negative impact on environment such as emission control (eg gas flaring), effluent water disposal to the surface evaporation pits.