



D613: Natural Gas Processing - Dehydration, Refrigeration, and Fractionation

Instructor(s): Dale Kraus

3 Days

Competence Level:
Awareness



Virtual Course

Summary

This **Distance Learning** course will be scheduled as a series of three-hour long webinars over a three-day period, via 2 webinar sessions daily (equivalent to a three-day classroom course), comprising a mixture of lectures, discussions, and working examples.

This virtual course is designed to familiarize technical professionals with the design and operation of several common gas plant processing blocks. Day one and two will be spent on dehydration systems used in typical field gathering and plant facilities, including a review of options available. Time will be spent discussing tower internals and pump design. Day three and four will focus on mechanical propane refrigeration systems typically used in Hydrocarbon Dew Point and NGL Recovery systems, including a review of design and performance enhancements.

Learning Outcomes

Participants will learn to:

- 1 Discuss the components of a refrigeration system.
- 2 Review the operating problems and possible solutions in a refrigeration system.
- 3 Describe the various liquids recovery options.
- 4 Determine the water content of natural gas.
- 5 Review the operation and potential problems of a glycol dehydration unit.
- 6 Briefly review desiccant dehydration systems.
- 7 Review absorption and fractionation towers.
- 8 Review de-ethanizer and stabilization tower operation and typical operating problems.

Duration and Training Method

Scheduled as a series of three-hour long webinars over a three-day period, via 2 webinar sessions daily (equivalent to a three-day classroom course), comprising a mixture of lectures, discussions, and working examples

Who Should Attend

The course is intended for engineers, technologists and operators involved in the operation and optimization of gas processing facilities.

Prerequisites and Linking Courses

There are no prerequisites for this course.



D613: Natural Gas Processing - Dehydration, Refrigeration, and Fractionation

Instructor(s): Dale Kraus

3 Days

Competence Level:
Awareness



Virtual Course

Course Content

Day One - Dehydration

- Water Content of Natural Gas
- Hydrate Formation, Prevention and Handling
- Glycol Dehydrator Sizing
- Optimization of a System
- Operational Issues
- Troubleshooting
- Environmental Safety Considerations

Day Two - Refrigeration

- Basic Operation and Design of Refrigeration Circuit
- Capacity Control
- Equipment Options
- Power-Reducing Modifications
- Troubleshooting H/C Dew Point Control Problems
- Gas Expander - Propane Refrigerant Comparison

Day Three - Absorber and Fractionation Towers

- Basic Design
- Tower Internals
- Capacity Control and Issues
- Turn-Up and Turn-Down Problems
- Amine Systems and Filtration
- Stabilization vs. Oil Treating