ISTANBUL-TURKEY

23-27 Nov 2026

Nitrogen Plant Operation

Introduction

This Nitrogen Plant Operation training course equips participants with the essential technical knowledge and practical skills needed to operate, maintain, and troubleshoot cryogenic nitrogen production facilities safely and efficiently. Nitrogen is a critical utility in plants and other industrial operations, serving as a blanket gas, purge medium, and inert atmosphere for process safety. In Kuwait's oil, gas, and petrochemical sectors, ensuring continuous nitrogen supply is vital for operational reliability, equipment protection, and HSE compliance.

The course provides a comprehensive understanding of the nitrogen generation process, covering cryogenic distillation principles, plant equipment functions, distribution systems, and best operational practices. Participants will also learn about nitrogen hazards, emergency handling, and maintenance strategies to minimize downtime and ensure product quality.

Through real-life case studies, system walkthroughs, and scenario-based exercises, delegates will gain confidence in managing normal operations, responding to abnormal situations, and executing start-up, shutdown, and defrost procedures effectively. This training supports Kuwait's industrial goals for safety, productivity, and environmental stewardship while aligning with international standards such as API, OSHA, and relevant facility guidelines

Course Objectives:

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

- Recognize the major equipment's and their functions
- Review the operating parameters of;

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- Warm End (W/E) Container
- Cold box
- Storage and Backup System
- Learn how Nitrogen Generators Work.
- Understand the Nitrogen Plant startup and shutdown activities.
- Health, Safety and Environments applications.
- Understand the Nitrogen Plant troubleshooting.
- Recognize the Nitrogen uses, Nitrogen Hazards and MSDS

Who Should Attend?

- Engineers working on some process at LNG plants
- Managers and operators responsible for overseeing operations at LNG plants
- Senior management members of organizations responsible for strategic decision making with regard to enhancements to plant operations
- Compliance officials responsible for ensuring that plant operations are in compliance with all standards
- Legal advisors and consultants responsible for handling operation-related legal issues faced by organizations
- Quality checkers and policymakers responsible for framing and implementing guidelines across various departments at LNG plants
- Any other professional interested in knowing more about LNG plant operations

Course Outlines

DAY-1

Nitrogen Plant Equipment Types and their Function

- The purpose of the Nitrogen Unit and Process Description
- How Do Nitrogen Generators Work
- Major equipment' sand their functions

Warm End (W/E) Container

- Compressor
- Air receiver
- Chiller (Heat exchanger)
- Pre-filter
- Air purification unit (APU), (TSA system)

DAY-2

Cold box

- Main heat exchanger
- Distillation Column
- Condenser
- Expansion brake turbine

Storage and Backup System

- Liquid nitrogen tank
- Vaporizer
- Nitrogen Plant Operation
- How Nitrogen Plant Works

DAY-3

Nitrogen Hazards and MSDS

Nitrogen Distribution(Common Uses of Nitrogen in industrial Plants)

- Blanket gas to storage tanks.
- Blanket gas to expansion tanks.
- Seal gas to the compressors.
- Flare system stack and header purges

- Pump purges
- Instrument and electrical cable seal purges
- Utilities Stations (Maintenance Use)

DAY-4

Quality Control

- Total Hydrocarbons
- CO2 Monitoring

Handling of Abnormal and Emergency Conditions

- Control Narrative (Process Interlocks and trips)
- Safeguarding System
- Cause and Effect Matrix

What Is Nitrogen Used For?

DAY-5

Handling of Abnormal and Emergency Conditions

Plant Emergency Causes

- Process Trips
- Instruments Air Failure
- Electrical Failure

Defrost

- Partial Defrost to remove CO2, water and Hydrocarbons
- Total Defrost to allow prolonged outage

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DE riming Functions and Procedures, to be explained

Training course Price

Number of Participants	Course Price
1 Participant	KWD 1550.000
2 Participants	KWD 1500.000
3 Participants	KWD 1450.000
4 Participants	KWD 1400.000
5 Participants	KWD 1350.000
6 and above Participants	KWD 1300.000