Propane Refrigeration Management Essentials

13 - 17 October 2024
Online

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REF: E1793 DATE: 13 - 17 October 2024 Venue: Online - Fee: 2500 Euro

Introduction:

This training program offers practical guidance on operating, troubleshooting, and maintaining propane-based refrigeration systems. Participants learn essential skills and knowledge to ensure efficient and reliable system performance in industrial applications.

Program Objectives:

At the end of this program, the participants will be able to:

- Understand refrigerator propane properties and their relevance in refrigeration systems.
- Analyze the impact of heat transfer factors on the performance of propane refrigeration systems.
- Design and configure propane refrigeration systems effectively.
- Operate and control propane refrigeration systems efficiently.
- Implement maintenance procedures to ensure the reliability and longevity of propane refrigeration systems.
- Enhance the efficiency of propane refrigeration systems through optimization strategies.
- Troubleshoot issues and resolve challenges encountered in propane refrigeration systems effectively.

Targeted Audience:

- Operation engineers and supervisors.
- Process engineer.
- Maintenance engineer and supervisors.
- Managers and team leaders.
- Design engineer.
- Operators and SR. Operators.

Program Outline:

Unit 1:

Fundamentals:

- Introduction to Refrigeration, including basic principles and applications.
- Understanding propane properties and its role in refrigeration systems.
- Heat transfer mechanisms involved in refrigeration processes.
- Overview of refrigeration systems and their components.
- Explanation of the basic refrigeration cycle and its operation.

Unit 2:

Design, Operation, and Control of Propane Refrigeration System Components Cycle:

- Explanation of typical single and multi-stage refrigeration cycles.
- Understanding the function of propane surge drums and pump loading.
- Overview of expansion valves and their role in refrigeration systems.
- Introduction to propane chillers and economizers in refrigeration processes.
- Explanation of propane condensers and their operation in refrigeration cycles.

Unit 3:

Propane Refrigeration Centrifugal Compressor:

- Introduction to centrifugal compressor principles and typical configurations.
- Understanding the operation of centrifugal compressors, including multi-stage variants.
- Explanation of compressor components such as casings, rotors, and guide vanes.
- Overview of compressor cooling, lubrication, and seal oil systems.
- Discussion on compressor drivers, couplings, controls, performance, and safety devices.

Unit 4:

Propane Refrigeration Reciprocating Compressor:

- Introduction to reciprocating compressor principles and gas compression.
- Explanation of typical reciprocating compressor designs and piston operation.
- Overview of compression unit components and compressor operation.
- Understanding compressor valves, cylinders, lubrication systems, and drive units.

- Explanation of compressor types including balanced-opposed, integral, and multi-stage units.

Unit 5:

Propane Refrigeration Troubleshooting and Improve Efficiency:

- Indicators and checks for diagnosing refrigeration system issues.
- Operating checks and troubleshooting methods for resolving operational problems.
- Overview of refrigeration system controls, applications, and factors affecting operation.
- Strategies for solving fouling problems and improving system efficiency.
- Discussion on maintenance types, maintenance plans, and preventive measures for refrigeration systems.