N653: LNG Technologies and Production

Instructor(s): Jorge H. Foglietta, PE

Format and Duration

Classroom - 2 Days
Virtual - 4 Sessions

Summary

Business Impact: Application of the learnings of this course will empower participants to **better understand** the **Liquefied Natural Gas business and processing chain**.

The course will teach participants about the complexity of developing an LNG Project, their financial hurdles, the markets, the engineering developments, and the gas processing operations that are required before liquefying gas. Attendees will learn the concepts of the refrigeration systems used to liquefy natural gas, the different technologies, the mechanical equipment that are used, the cryogenic storage tanks and the marine terminals used.The course will also cover the import regasification terminals, and an overview of the small-medium LNG plants and the Floating LNG facilities.

Learning Outcomes

Participants will learn to:

1. Describe the four elements of the LNG chain.
2. Define gas liquefaction cycles and enumerate the different refrigeration cyles.
3. List main LNG liquefaction technologies.
4. Understand the different types of LNG Tanks, and their construction process.
5. Know the different types of LNG Ships and their containment.
6. List the different types regasification equipment
7. Familiarize with the complexity of Floating LNG.

Training Method

This is a classroom or virtual classroom course comprising a mixture of lectures and discussions.

Who Should Attend

This course is ideally suited to young process and mechanical engineers, discipline engineers and personnel involved in the engineering and construction, operating companies who have had limited exposure in this area, or for professionals involved in other areas of the petroleum industry who require a comprehensive overview of the LNG processing.

Prerequisites and Linking Courses

There are no prerequisites for this course.

Related courses on oil and gas field surface facilities include N613 (Natural Gas Processing - Dehydration, Refrigeration, and Fractionation), N612 (Introduction to Natural Gas Gathering and Processing) and N609 (API 650, 653 and 620 Storage Tanks).

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Course Content

- The Elements of the LNG Chain
- The Upstream Processing Chain
- Gas Treating, Dehydration, and Heavy Hydrocarbon Removal
- Review of Thermodynamic Fundamentals of Liquefaction
- Gas Liquefaction Cycles Technologies and Equipment
- Review of process operating conditions on a typical LNG Train
- Storage Facilities
- Marine Terminal Facilities
- LNG Shipping
- Receiving Terminals
- LNG Peak Shaving Plants
- New Trends: Small and Medium Size LNG Plants- Floating LNG