

LNG & GAS

An Operator's Guide to Thermodynamics

A publication by **Steven A. Vitale, Ph.D., P.E.**
in cooperation with **Gas Technology Institute**

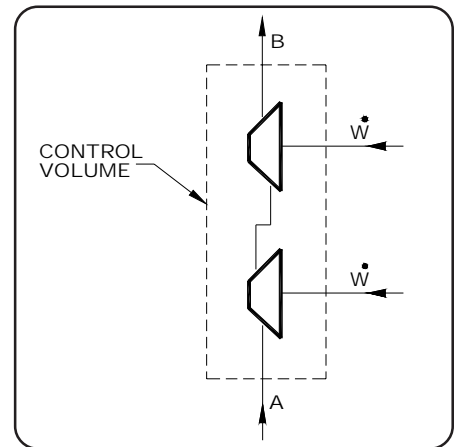
“Learning the basics about the gas we distribute helps employees make better technical and managerial decisions.” So says author Vitale, who has used the information in this publication to teach basic and advanced LNG courses.

This useful 94-page manual is designed to give LNG plant technicians—including operators and electrical, instrument, and maintenance personnel—as well as gas engineers and managers a better understanding of gas and LNG processes. The Guide doesn't require any prerequisite courses or knowledge of higher mathematics.

The Guide's purpose is to develop the inner creativity of gas and LNG technicians and a method of thinking about thermodynamic processes, based on the use of a Pressure-Enthalpy diagram as an everyday process estimating tool. Once you understand thermodynamic processes, you can explore the use of these principles for LNG production, refrigeration, and power production. The Guide concludes with a total review of an open expansion LNG plant using simplified thermodynamic principles. It includes problems for self-testing and it can also be used as a teaching manual.

Understanding the material in the Guide will help technicians—

- Operate the plant more efficiently
- Troubleshoot plant operations
- Respond to emergencies and plant anomalies with additional knowledge resources
- Suggest plant improvements or new business opportunities.



Who Will Benefit?

- LNG operators and their supervisors
- Engineers in the natural gas industry
- Anyone who wants to improve job performance by understanding the physics of what's happening in a plant under his or her control

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