

GP 15-01-03	Instruments for Storage Tanks and Vessels	July 2001
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Instruments for Storage Tanks and Vessels

GP 15-01-03

Scope

[I] This Global Practice (GP) covers the design, selection, and application of instrumentation for atmospheric storage vessels closely associated with process units and considered unit pressure vessels.

Requirements for tank blanketing and water draw-off instrumentation, and manual tank gauging equipment are not covered in this Practice.

[I] An asterisk (*) indicates that a decision by the Owner's Engineer or Purchaser is required, that additional information is to be furnished by the Owner's Engineer, or that information for Owner's Engineer approval is to be supplied by Vendor or Contractor.

This Practice is appropriate for attachment to inquiry or purchase document.

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1. Required References

[I] This Section lists Practices and Standards that are generically referenced and assumed to be a part of this document. Unless otherwise specified herein, use the latest edition

1.1. Global Practices–ExxonMobil Engineering Practices

GP 03-06-01	Piping for Instruments
GP 09-07-01	Accessories for Atmospheric Storage Tanks
GP 15-02-01	Temperature Instruments
GP 15-03-01	Pressure Instruments
GP 15-05-01	Level Instruments
GP 15-07-03	Alarm Systems

1.2. API–American Petroleum Institute

API RP 551	Process Measurement Instrumentation
API MPMS 3.1B	Manual of Petroleum Measurement Standards Chapter 3 - Tank Gauging Section 1B - Standard Practice for Level Measurement of Liquid Hydrocarbons in Stationary Tanks by Automatic Tank Gauging
API MPMS 7	Manual of Petroleum Measurement Standards Chapter 7 - Temperature Determination

1.3. NFPA–National Fire Protection Association

NFPA 30	Flammable and Combustible Liquids Code (National Fire Codes, vol. 1)
NFPA 59A	Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG)

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2. Definitions

Term	[I] Description
Combustible Liquids	Combustible liquids are high flash point liquids [flash point of 100°F (38°C) or higher] (such as kerosene, some jet fuels, heating oils, heavy fuel oils, lubricating oils, transformer oils, and some asphalts) when handled at temperatures more than 15°F (8°C) below their flash points.
Crude Oils	Crude oils are hydrocarbon mixtures that have not been processed in an oil refinery. This category also includes other wide boiling range stocks, which may boil-over during a tankage fire.
Flammable Liquids	Flammable liquids are low flash point liquids [flash point below 100°F (38°C)] (such as gasoline, some jet fuels, etc.) and high flash point liquids [flash point 100°F (38°C) or higher] when handled at temperatures above or within 15°F (8°C) of their flash point (such as some heated asphalts). Crude oils are not included.
Hazardous And Toxic Materials	Refer to applicable national codes and standards for definitions of hazardous and toxic materials.
Pressure Storage Vessels	Pressure storage vessels are aboveground pressurized spheres, bullets, and horizontal and vertical drums, used for the storage of toxic and/or flammable liquids (such as LPG and ammonia), designed for pressures greater than 2.5 psig (17 kPa gauge). Not included are normal onsite surge vessels closely associated with process units and considered unit pressure vessels.
Refrigerated Storage Tanks	Refrigerated storage tanks are aboveground storage tanks and spheres operating at metal temperatures between +40°F and -270°F (+5°C and -168°C) and at pressures not exceeding 15 psig (103 kPa gauge).

3. Design and Installation

- 1) [I], [C] All level gauging and temperature sensing devices to be installed on any new or existing atmospheric storage tanks, pressure storage vessels and refrigerated storage tanks in existing facilities shall be designed to match existing equipment to the maximum extent possible. Exceptions shall be approved by the Owner's Engineer.
- 2) [R] All Automatic Tank Gauging (ATG) systems and associated components, data transmission system, etc. shall incorporate lightning protection surge arrestors or shall otherwise be inherently designed to resist damage due to lightning strikes.