

Global Standards to Support LNG Development

ABD ECPA Public-Private Dialogue Series

November 9, 2020

API's Global Industry Services Division

Mission: Provide world-class services that enable the oil and natural gas industry to operate efficiently, safely, reliably, profitably, and sustainably

- 100+ Employees
- 145 Auditors
- 200 Training Programs
- 700+ Publications
- 200+ Events
- 56,000 Personnel Certifications in 128 Countries
- 5,000 Company Certifications in 80+ Countries
- 50,000+ Licensed Products



Standards Overview

Standards are the industry-developed specifications and processes that enhance operational safety, environmental protection and sustainability in the natural gas industry

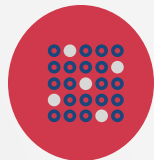
API Standards are:



Developed by committees of experts from industry, government and academia from all over the world.



Created based on evidence, using proven engineering practices and the latest scientific research



Developed via a transparent, impartial, and consensus-based process allowing participation from all interested stakeholders

2018 ABD Recommendations

Recommendations by the Americas Business Dialogue (ABD) to the 2018 Summit of the Americas:

#25

Facilitate improvements in the efficiency, cost, reliability and emissions of electricity production through the physical and regulatory integration of regional markets; enabling the efficient purchase and sale of electricity; and utilizing market-friendly regulations that improve access to renewable energy and natural gas.

#27

Establish a transparent institutional framework process, incorporating private sector expertise, to facilitate long-term energy planning and the sustainable development of natural gas to improve the diversification and resilience of energy production.

Benefits of Global Standards in the Gas Sector

-  Use of global standards helps facilitate natural gas trade across economies
-  Reliance on standards developed by the private sector help minimize unnecessary regulatory burdens, economic inefficiencies, technical barriers to trade
-  Use of international standards in policies can help spur economic growth while advancing environmental, health, safety, and sustainability performance
-  Facilitate use of products and materials that are interoperable, improving industry infrastructure and efficiency

International Usage & Deployment

25

MARKETS ANALYZED



China and SE Asia
India and the Middle East
South America
Africa

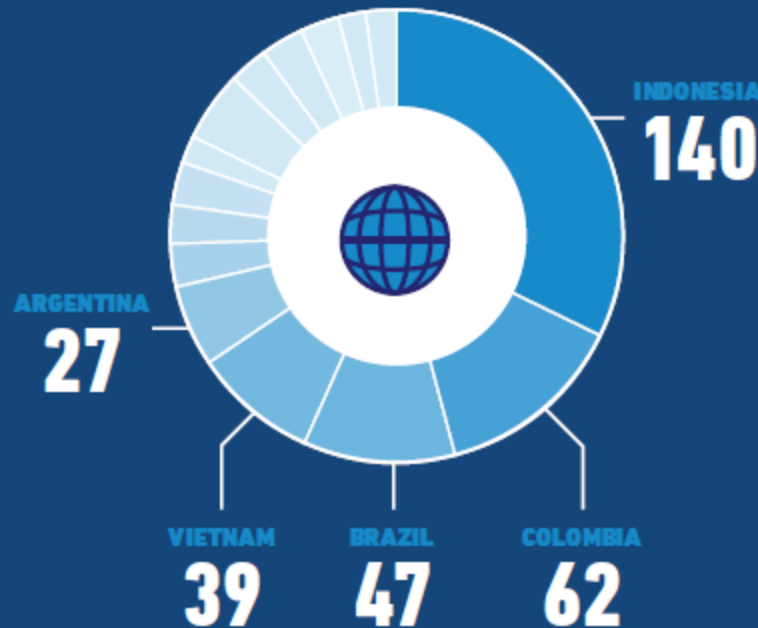


WIDESPREAD USE OF API STANDARDS

780+

references to API standards in laws, regulations, national standards, and operations manuals

REFERENCES IN NATIONAL STANDARDS/REGULATIONS



REFERENCES IN NATIONAL STANDARDS



70%

of references were in national standards and regulations

How Regulators Can Use Standards



Reference in
technical
manuals



Incorporated
and/or
referenced in
national
standards

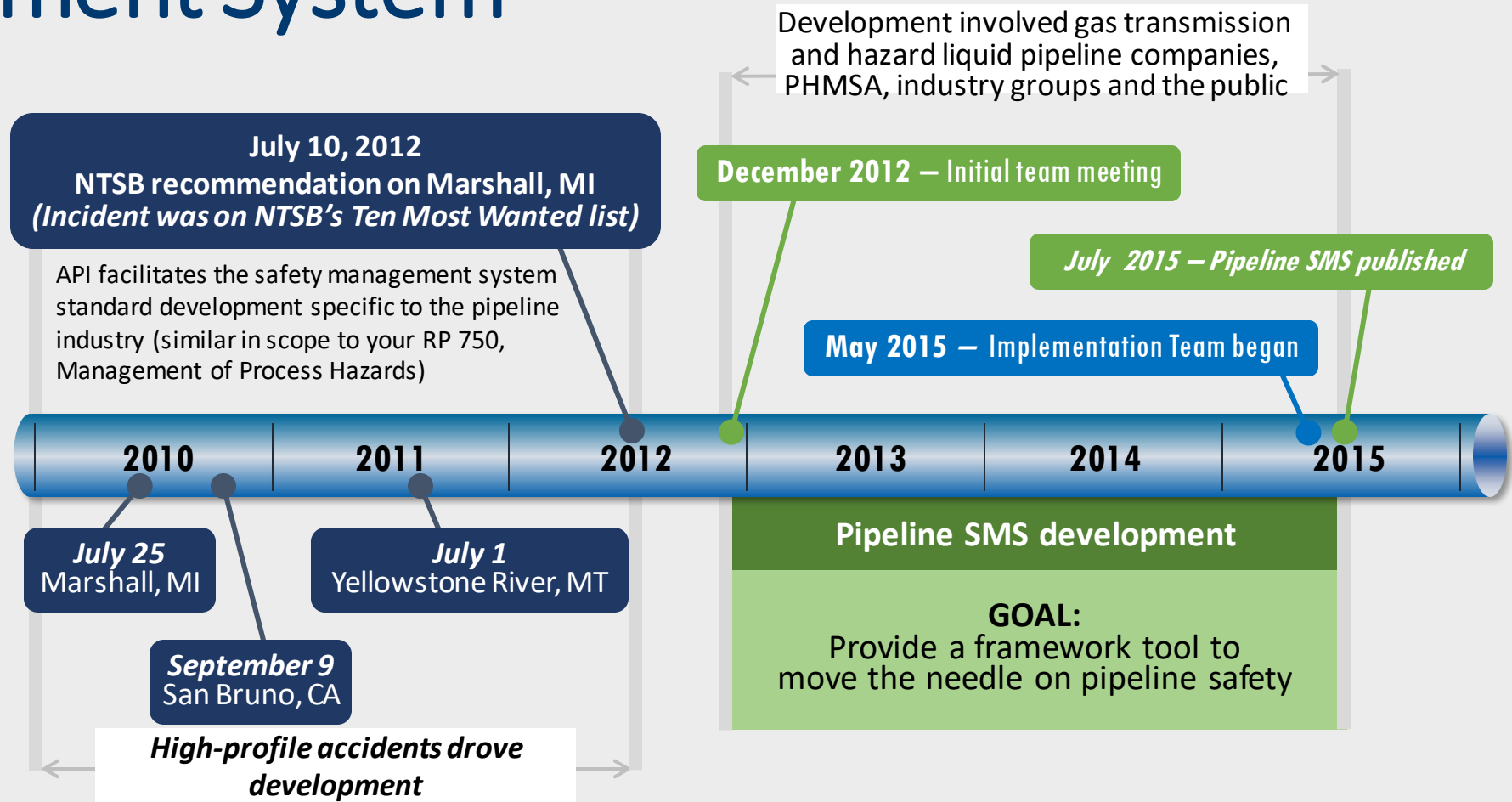


Incorporated
and/or
referenced in
regulations



Mandatory
or voluntary
based on
policy
objectives

U.S. Case Study: API RP 1173, Pipeline Safety Management System



After the U.S. NTSB recommended the industry develop guidance for safety management systems for energy pipeline operations, API partnered with PHMSA and state regulators to develop RP 1173.

Case Study: PHMSA and RP 1173



- ✓ **Developed with participation from regulators**
 - Pipeline and Hazardous Materials Safety Administration (PHMSA)
 - U.S. National Transportation Safety Board (NTSB)
- ✓ **Voluntary implementation; not incorporated by reference into U.S. regulation**
 - PHMSA strongly promotes implementation of RP 1173 by all pipeline operators
 - In some cases, PHMSA has required operators to implement RP 1173 as an enforcement action following an incident

Case Study: Indonesia and API Standard 521

Ministry of Energy and Mineral Resources (ESDM) – regulation requires O&G companies to “guarantee the effective standard and quality...as well as apply good technical forms”

ESDM Use of Standards in Oil and Gas Business Activities – Indonesian Standards Body (BSN)

- Mandatory and voluntary standards (+100 for O&G, 4 mandatory)
- When BSN mandatory standards not applicable, 140 API standards permitted for use

API Standard 521, Pressure-Relieving and Depressuring Systems

- Used in LNG Facilities
- Referenced in ESDM, Use of Standards in O&G Business Activities
- Work Procedure Guidelines – Operation and Maintenance of Petroleum Storage Tanks

Brazil Case Study: API Standard 620

Brazilian Association of Technical Standards (ABNT) – leads standards development activities; referenced in Brazilian O&G regulations

ABNT maintains over 400 standards related to O&G sector

- 19 ABNT standards make 50 normative references to API standards



API Standard 620, Design and Construction of Large, Welded, Low-Pressure Storage Tanks

- ABNT NBR 17505-2:2015, Storage of Flammable and Combustible Liquids Part 2: Tank and Recipient Storage
- ABNT NBR 17505-7:2015, Storage of flammable and combustible liquids Part 7: Fire protection for parks with stationary storage tanks

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