

# LNG Activities Update



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U.S. Department of Transportation  
Pipeline and Hazardous Materials  
Safety Administration

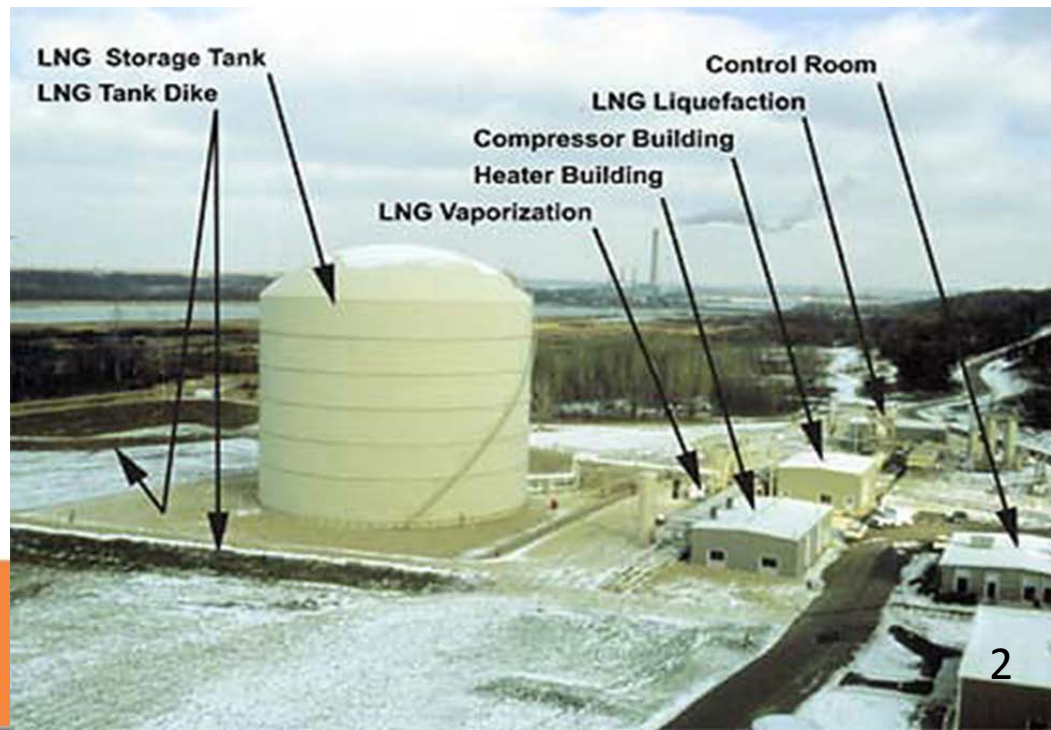
To Protect People and the Environment From the Risks of  
Hazardous Materials Transportation

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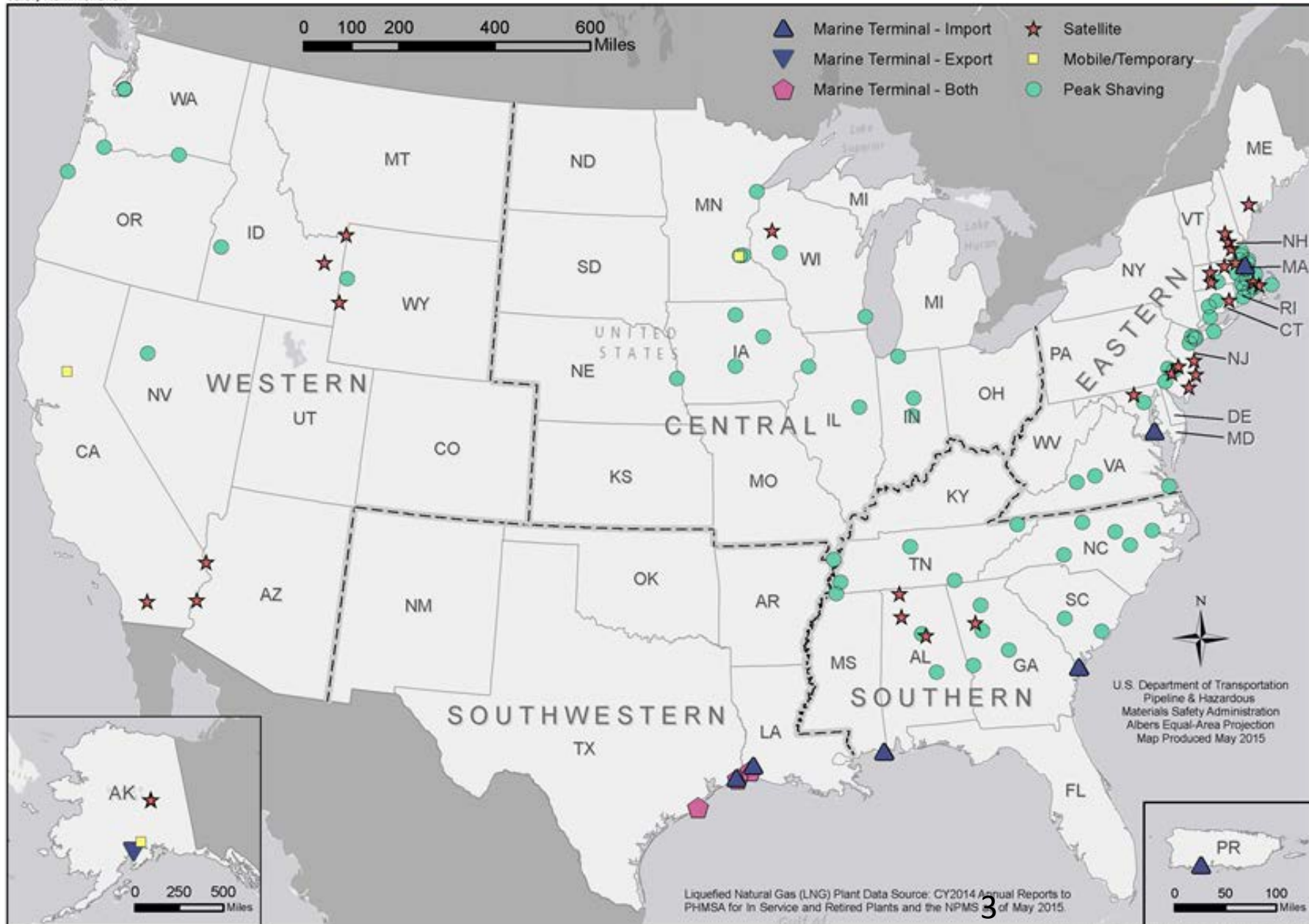
# 49 CFR Part 193: LNG Facilities

- Regulations for LNG facilities connected to Part 192 pipelines, with some exceptions
- Originally written in 1980, when LNG was mainly used for Peak Shaving





# LNG Plants Connected to Natural Gas Pipeline Systems



# New Different LNG Facilities

Driven by cheap natural gas & stricter emissions regulations



**Peak Shaving  
(FERC & Non-FERC)**

**Marine Import→Export  
(FERC Jurisdiction)**

**Small-scale  
(Non-FERC)**

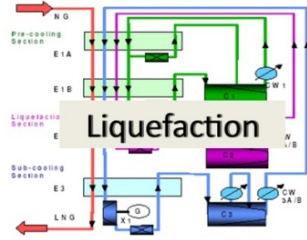
—1990—2000—2010—



# Traditional: Peak Shaving (back to pipeline)



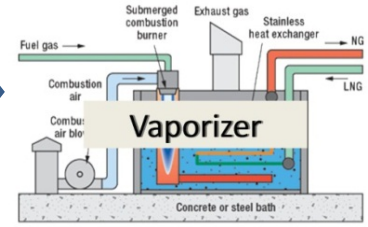
Natural Gas Pipeline



Liquefaction



Storage



Vaporizer

Source: Sumitomo Precision Products.

## New Facilities: Trucks, Trains, Ships



# New FAQs for Small-Scale LNG



**PHMSA**  
U.S. Department of Transportation  
Pipeline and Hazardous Materials  
Safety Administration

**Pipeline Technical Resources**  
Return to Pipeline Safety Community

Home	Alternative MAOP	Cased Crossings and GWUT	Class Location	CRM	DIMP	Gas IM
HL IM	High Volume EFV	Low Strength Pipe	OQ	Pipeline Construction	R&D	LNG Facility Siting
						Public Meetings

## LNG Plant Requirements: Frequently Asked Questions

### LNG Facility Siting Menu

- Home
- Documents
- Projects Under Review
- FAQs
- What's New
- Feedback

- Regulations
- Advisory Bulletins
- Interpretations

These Frequently Asked Questions (FAQs) are intended to clarify, explain, and promote better understanding of PHMSA's requirements concerning the siting application for installing Liquefied Natural Gas (LNG) facilities. These FAQs are not substantive rules and do not create rights, assign duties, or impose new obligations not outlined in the existing regulations and standards. Additional specific questions can be addressed to the PHMSA Director of Engineering and Research, Kenneth Lee at [Kenneth.lee@dot.gov](mailto:Kenneth.lee@dot.gov).

### Reference Materials:

- Regulations
- Interpretations
- Advisory Bulletins

The FAQs may provide an acceptable solution(s). There may be other acceptable solutions. Some proposals require substantial technical justification to insure that any alternative approach provides an equivalent or higher level of safety. As this requires a case-by-case engineering evaluation, this may increase PHMSA's review time.

These FAQs are divided into four categories:

- (G) General
- (D) Design
- (DS) Design Spill Definition
- (H) Hazards and Hazards Modeling

### (G) General

**G1. The abundant supply of domestic natural gas is driving development of new ways to use, process, and transport LNG. Can PHMSA provide guidance as to which LNG facilities are regulated under 49 CFR Part 193?**

The Pipeline Safety Statute codified in 49 U.S. Code § 60101, et seq, directs US DOT to establish and enforce standards for liquefied natural gas pipeline facilities. An LNG facility is a gas pipeline facility

## 49 CFR Part 193 LNG Facility Jurisdiction 6/17/2015

in order to remove nitrogen from the natural gas. They regasify the LNG and inject the resulting natural gas into transmission pipelines. **If the LNG is not stored, 49 CFR Part 193 does not apply to the LNG facility due to the exception in § 193.2001(b)(2).**

### 10. Small-Scale LNG Applications

The non-traditional LNG applications, sometimes referred to as ‘small-scale LNG’, are expanding.

- a. **Distributed LNG Production** – Applications for small scale LNG at much lower than historic production rates, some as small as 1,500 gallons per day, can be sited at many locations. Flare gas recovery, coal mine methane, coal bed methane, flare gas, and bio-LNG may be viable sources of natural gas for liquefaction through a small-scale process. LNG may be produced at stranded gas fields, areas without access to 49 CFR Part 192 infrastructure. Small scale LNG production may be conducted anywhere on a gas distribution system. **If a 49 CFR Part 192 pipeline is the source of the natural gas or receives the natural gas, the facility is regulated under CFR 49 Part 193. If the LNG is used in the course of gas treatment or hydrocarbon extraction and the LNG is not stored, the facility is not regulated under 49 CFR Part 193.**



# Agency Coordination

- Small-scale LNG often crosses jurisdictions (e.g. pipeline, truck, train, ship, etc.)
- Coordinating activities :
  - Federal agencies (FERC, DOE, MARAD, USCG, etc.)
  - State and local agencies





# Part 193 references older standards

- Part 193 references NFPA 59A (2001), due to issues with newer editions (see July 22, 2009 Federal Register Notice: Proposed Rule)
- NFPA 59A (2001) references ASME BPVC (1992)
- Pressure vessels are manufactured to newest edition, mandatory by ASME **(do not meet Part 193)**
- Current ASME BPVC has Higher Allowable Stress & Lower Hydrotest Pressure Ratio than 1992 edition:

	ASME 1992	ASME $\geq$ 1999
Allowable Stress	UTS/4.0	UTS/3.5
Hydrotest Pressure (x MAWP)	1.5x	1.3x



# ASME Tanks: Safety Equivalency

- PHMSA is developing industry conditions to provide Safety Equivalency for ASME tanks:
  - Asset Integrity Management Program
  - Additional Inspection
  - Corrosion Monitoring
  - API 510 Inspection



# Plan to Update Part 193

- Update references to older standards
- Consider new types of LNG facilities
- Update with newer technologies/safety advancements
- Planning 2016 public meeting



# Questions?

