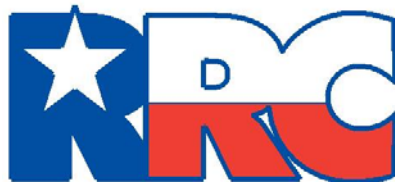


# **TEXAS LNG EXAMINATION STUDY GUIDE**

Category 20  
Transport Outfitter  
Management Level



**RAILROAD COMMISSION OF TEXAS**

December 2017

## **NOTICE**

This publication is intended for use in its entirety as a guide for persons preparing to take a Railroad Commission LNG qualifying examination. Any other use or distribution of this publication or use or distribution of any portion of this publication for any purpose whatsoever is considered by the Railroad Commission of Texas to be misuse of this publication.

This publication is not intended to be an exhaustive treatment of the subjects covered and should not be interpreted as precluding the use of other safety programs or procedures that comply with (1) applicable federal, state, and/or local code provisions, statutes, ordinances, and/or other regulations, including, but not limited to, the Railroad Commission of Texas' Compressed Natural Gas and Liquefied Natural Gas codes adopted by the Railroad Commission of Texas, and/or (2) other industry standards and/or practices.

Every effort was made to ensure that this publication was accurate and up-to-date as of the date of publication. The reader is cautioned, however, about reliance on this publication or any portion thereof at any time thereafter, particularly because changes in technology are likely to occur that might make portions of this publication inaccurate and out-of-date. The Railroad Commission of Texas assumes no liability, under any circumstances, for any actions taken or omissions made in reliance of the contents of this publication, from whatever source, or any other consequences of any such reliance.

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## **Exam administration**

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### **Taking an examination in Austin**

You may take any Railroad Commission qualifying examination in Austin without pre-registering (“walk-in”) on any business day, excluding holidays, from 8:00 a.m. to 12:00 noon at the Commission’s Alternative Fuels Training Center. The training center is located at 6506 Bolm Road, on the northwest corner of the intersection of Bolm Road and U.S. Highway 183.

(See map to Training Center on page 42.)

### **Taking an examination outside of Austin**

You may also take any Railroad Commission qualifying examination at several locations statewide. Exam dates, times and locations are listed three months in advance on the Commission’s web site. To view a complete schedule, go to [www.rrc.texas.gov](http://www.rrc.texas.gov). From the drop-down menu under “Alternative Fuels” choose “Safety, Licensing, Training & Certification” and click on “Training and Exam Events.” The online schedule has links to maps showing each class and exam location.

You must register at least two business days in advance to take an examination outside of Austin. To register online, go to [www.rrc.texas.gov](http://www.rrc.texas.gov). From the drop-down menu under “Alternative Fuels” choose “Safety, Licensing, Training & Certification”, under Liquefied Petroleum Gas click on “Training” then find and click on “Register Now.” The web site allows you to register up to four people for an examination.

When you register online, you will receive a return e-mail confirming the registration and the dates and locations of the exams. Registering online also ensures that you will receive advance notification of any changes in the examination date, time or location.

### **Payment for exams; LNG Form 2016; ID required**

The fee is \$40.00 for each employee-level exam and \$70.00 for each management-level exam. Fees are non-refundable by state law, and cash cannot be accepted.

You may pay the required examination fee at any exam location by check or money order payable to the Railroad Commission of Texas. LNG Form 2016, “Application for Examination,” may also be completed at the examination site. Examinees must also present an official state-issued driver’s license or photo ID at the exam site.

You may also pay your examination fee by credit card in advance online. To pay by credit card, go to [www.rrc.texas.gov](http://www.rrc.texas.gov). To pay online, be sure to print out the confirmation page. Make a copy of the confirmation [www.rrc.texas.gov](http://www.rrc.texas.gov) page for your records and bring a copy with you to the examination site.

### **Closed-book examinations**

All Railroad Commission management-level qualifying examinations are closed book. This study guide may not be used during any management-level examination.

Examinees should prepare for the LNG Category 20 Transport Outfitter management-level examination by studying the applicable sections of the Railroad Commission’s Regulations for Compressed Natural

Gas and Liquefied Natural Gas (*116 Natural Resources Code*) and selected sections of CFR 49.

### **Examination time limit**

The LNG Category 20 Transport Outfitter management-level examination must be completed within two hours after the examination is given to you, including any breaks you elect to take. The examination proctor is the official timekeeper. You must submit both the examination itself and your answer sheet to the proctor within the two-hour limit.

Grades, reports and retakes

The minimum passing grade is 75 percent on all Railroad Commission qualifying examinations.

Examinations administered at the Training Center in Austin are graded on-site, and examinees are immediately informed of the results. If you fail an examination that you took in Austin, you may retake that same examination only one additional time during a business day. Any subsequent examination must be taken on another business day, unless approved by the Commission.

Exams taken outside of Austin are graded as soon as possible, and the results of the examination are reported within 10 working days.

If you pass an examination, the Railroad Commission will issue you a blue certification card within 10 working days. You will be notified by letter if you fail an examination.

### **Required first-year training class**

Applicants for LNG Category 20 Transport Outfitter management-level examination currently are NOT required to attend training prior to taking the exam and passing it before the Commission issues the certification.

### **Contacts**

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# LNG EXAMINATION STUDY GUIDE

## MANAGEMENT-LEVEL

### LNG Category 20 Transport Outfitter

#### Who should use this guide?

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You should use this guide to prepare for the Railroad Commission's management-level qualifying examination to apply for a LNG Category 20 (Transport Outfitter) license. A LNG Category 20 (Transport Outfitter) license authorizes the subframing, testing, and sale of LNG transport containers; the testing of LNG storage containers; the installation, testing, and sale of LNG motor or mobile fuel containers and systems; and the installation and repair of transport systems and motor or mobile fuel systems for use in Texas.

#### What books do I need?

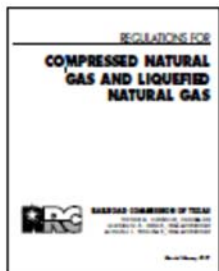
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This examination tests your knowledge of the laws and standards that apply to perform all LNG activities related subframing, testing, and sale of LNG transport containers; the testing of LNG storage containers; the installation, testing, and sale of LNG motor or mobile fuel containers and systems; and the installation and repair of transport systems and motor or mobile fuel systems for use in Texas. These laws and standards are found in two books.

*REGULATIONS FOR LIQUEFIED NATURAL GAS (Texas Railroad Commission)* and the electronic *Code of Federal Regulations (e-CFR)* available on the web at <http://ecfr.gpoaccess.gov>.

#### Where do I get the book?

You may download the current edition of the Railroad Commission's *Regulations for Compressed Natural Gas and Liquefied Natural Gas* free online. Go to the Commission's home page at [www.rrc.texas.gov](http://www.rrc.texas.gov). From the drop-down menu under "Education and Training," choose "Training Classes & Qualifying Exams" and click on "CNG/LNG Safety Rules (PDF)."



You may also buy a printed copy of the book for \$10.00, tax included, by calling the Railroad Commission’s publications office at (512) 463-7309.

NOTE: Citations are from the September 14, 2012, electronic *Code of Federal Regulations* (e-CFR) available on the web at <http://ecfr.gpoaccess.gov>. The summary is not exhaustive; other federal regulations and exceptions apply to LNG transport outfitters. Applicants are encouraged to consult the official text of 49 CFR for complete information about applicable federal requirements.

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## **Sections and Topics**

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Before you take this examination, you should know the definitions found in this study guide and the contents of the sections of the codes and standards listed below. The actual examination questions may not cover all of the listed sections and topics.

### ***Regulations for Compressed Natural Gas and Liquefied Natural Gas***

§14.2004	Applicability Severability Retroactivity
§14.2007	Definitions
§14.2010	LNG Report Forms
§14.2013	Licenses and Related Fees
§14.2019	Certification Requirements
§14.2049	Accident Reports
§14.2419	Welding and Piping Installations
§14.2431	Welded Pipe Test
§14.2707	Testing Requirements

### ***Natural Resources Code***

§116.015	Entry on Property; Inspection and Investigation
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§116.031	Licensing Requirements
§116.037	Disciplinary Action
§116.141	Injunctive Relief
§116.143	Administrative Penalty
§116.144	Penalty Assessment Procedure

## **Sections and Topics**

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### **CFR 49**

49 CFR §178.338-1	General requirements
49 CFR §178.338-2	Material
49 CFR §178.338-3	Structural integrity
49 CFR §178.338-4	Joints
49 CFR §178.338-5	Stiffening rings
49 CFR §178.338-6	Manholes
49 CFR §178.338-7	Openings
49 CFR §178.338-8	Pressure relief devices
49 CFR §178.338-9	Holding time
49 CFR §178.338-10	Accident damage protection
49 CFR §178.338-11	Discharge control devices
49 CFR §178.338-12	Shear section
49 CFR §178.338-13	Supporting and anchoring
49 CFR §178.338-14	Gauging devices
49 CFR §178.338-15	Cleanliness
49 CFR §178.338-16	Inspection and testing
49 CFR §178.338-17	Pumps and compressors
49 CFR §178.338-18	Marking

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## Terms and Definitions

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NOTE: The list below is not exhaustive. You are responsible for knowing all the terms and definitions that apply to the LP-gas activities you will perform, as well as the rules and standards highlighted in this guide.

NOTE: Informal terms that are sometimes used in the propane industry instead of formal technical terms are given in brackets.

***LNG Safety Rules §14.2007(2)***

ASME means the American Society of Mechanical Engineers.

***LNG Safety Rules §14.2007(6)***

*Certified*”, means, authorized to perform LNG activities under the direction of a licensee; however, certification alone does not allow an individual to perform LNG activities that require licensing.

***LNG Safety Rules §14.2007 (10)***

A *container* is any LNG vessel manufactured to the applicable sections of the API Code, ASME Code, or DOT requirements in effect at the time of manufacture.

***LNG Safety Rules §14.2007(15)***

*The design pressure* is the pressure for which a system or portion of that system is designed.

***LNG Safety Rules §14.2007(18)***

DOT means the United States Department of Transportation.

***LNG Safety Rules §14.2007(21)***

A *fixed-length dip tube* is a pipe with a fixed open end positioned inside a container at a designated elevation to measure a liquid level.

***LNG Safety Rules §14.2007(26)***

*LNG is Natural gas* consisting primarily of methane that has been condensed to liquid by cooling.

***LNG Safety Rules §14.2007(37)***

An *LNG system* is a system of safety devices, containers, and other LNG equipment installed at a facility or on a vehicle and designed for use in the sale, storage, transportation for delivery, or distribution of

LNG. ***LNG Safety Rules §14.2007(38)***

*The maximum allowable working pressure* is the maximum gauge pressure permissible at the top of completed equipment, containers, or vessels in their operating position for a design temperature.

***LNG Safety Rules §14.2007(41)***

A *mobile fuel container* is an LNG container mounted on a vehicle and used to store LNG as the fuel supply for uses other than motor fuel.

***LNG Safety Rules §14.2007(42)***

An *Outlet* is a site operated by an LNG licensee at which the business conducted materially duplicates the operation for which the licensee is initially granted a license.



***LNG Safety Rules §14.2007(52)***

A *pressure relief valve* is a valve which is designed both to open automatically to prevent a continued rise of internal fluid pressure in excess of a specified value (set pressure) and to close when the internal fluid pressure is reduced below the set pressure.

***LNG Safety Rules §14.2007(54)***

A *pressure vessel* is a container or other component designed in accordance with the ASME Code. *LNG*

***Safety Rules §14.2007(55)***

*PSIG* means Pounds per square inch gauge.

***LNG Safety Rules §14.2007(72)***

*Transport system* is any and all piping, fittings, valves, and equipment on a transport, excluding the container

***LNG Safety Rules §14.2007(75)***

*Water capacity* is the amount of water in gallons required to fill a container.

## ***Title 49, Code of Federal Regulations***

***§178.338-1 (a) (1)***

Design pressure means the “Maximum Allowable Working Pressure” as used in Section VIII of the ASME Code, and is the gauge pressure at the top of the tank.

***§178.338-1 (a) (2)***

Design service temperature means the coldest temperature for which the tank is suitable.

## Key Topics

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NOTE: The list below is not exhaustive. You are responsible for knowing all the facts, rules, standards and procedures that apply to the LP-gas activities you will perform, as well as the rules and standards highlighted in this guide.

As you study the applicable codes and standards, pay special attention to the facts, rules and procedures related to the following key topics. When you take the examination, read each question very carefully.

### General Requirements

Design pressure means the “Maximum Allowable Working Pressure” as used in Section VIII of the ASME Code, and is the gauge pressure at the top of the tank.

*§178.338–1 (a) (1) General requirements.*

Design service temperature means the coldest temperature for which the tank is suitable.

*§178.338–1 (a) (2) General requirements*

Each cargo tank must consist of a suitably supported welded inner vessel enclosed within an outer shell or jacket, with insulation between the inner vessel and outer shell or jacket, and having piping, valves, supports and other appurtenances as specified in § 178.338 49 CFR

*§178.338–1 (a) (2) (b) General requirements*

The design pressure of each cargo tank (the inner vessel) must be at least 25.3 psig but not more than 500 psig. *§178.338–1(c) (1) General requirements*

To preclude the entrapment of foreign material, the design and construction of the cargo tank must allow washing of all interior surfaces by the normal surging of the lading during transportation.

*§178.338–1(c) (3) General requirements*

The exterior surface of the tank must be insulated with a material compatible with the lading.

*§178.338–1 (d) General requirements*

Each vacuum-insulated cargo tank must be provided with a connection for a vacuum gauge to indicate the absolute pressure within the insulation space.

*§178.338–1 (d) (3) General requirements*

An evacuated jacket must be designed to sustain a minimum critical collapsing pressure of 30 psig.  
**§178.338-1 (f) (1) General requirements**

### Sample Question

If the jacket (the outer shell or insulation cover) is evacuated, the cargo tank (the inner vessel) must be designed for a pressure of \_\_\_\_\_ psi, plus the lading static head, higher than its design pressure.

- A. 14.7
- B. 12.6
- C. 11.9
- D. 10.7

*Answer: A*

### Material

All material used for cargo tank pressure parts must conform to the requirements of Section II of the ASME Code.

#### **§178.338-2 (a) Material**

All tie-rods, mountings, and other appurtenances within the jacket and all piping, fittings and valves must be of material suitable for use at the lowest temperature to be encountered.

#### **§178.338-2 (b) Material**

Impact tests are required on all cargo tank materials, except materials that are excepted from impact testing by the ASME Code, and must be performed using the procedure prescribed in the ASME Code.

#### **§178.338-2 (b) Material**

Impact tests are required on all cargo tank materials, except materials that are excepted from impact testing by the ASME Code, and must be performed using the procedure prescribed in the ASME Code.

**§178.338–2 (c) Material**

The direction of final rolling of the shell material must be the circumferential orientation of the tank shell.

**§178.338–2 (d) Material**

Each cargo tank constructed in accordance with part UHT of the ASME Code must be Postweld heat treated as a unit after completion of all welds to the shell and heads.

**§178.338–2 (e) Material**

A copy of the sketch of each plate used in the tank showing the location of each plate in the shell and heads of the tank, must be provided to the owner of the cargo tank and a copy must be retained by the fabricator for at least five years and made available, upon request, to any duly identified representative of the U.S. Department of Transportation.

**§178.338–2 (f) Material**

**Sample Question**

All \_\_\_\_\_ welds in tanks and load bearing jackets must be located so as not to intersect nozzles or supports other than load rings and stiffening rings.

- A. Butt
- B. Fillet
- C. Transverse

**Answer: D**

## Structural Integrity

Except as permitted, the maximum calculated design stress at any point in the tank may not exceed the lesser of the maximum allowable stress value prescribed in section VIII of the ASME Code or 25 percent of the tensile strength of the material used.

### *§178.338-3 (a) (1) Structural integrity*

The relevant physical properties of the materials used in each tank may be established either by a certified test report from the material manufacturer or by testing in conformance with a recognized national standard. In either case, the ultimate tensile strength of the material used in the design may not exceed 120 percent of the minimum ultimate tensile strength specified in either the ASME Code or the ASTM standard to which the material is manufactured

### *§178.338-3 (a) (2) Structural integrity*

Stress concentrations in tension, bending, and torsion which occur at pads, cradles, or other supports must be considered in accordance with Appendix G of Section VII, Division 1 of the ASME Code.

### *§178.338-3 (b) (2) Structural integrity.*

For a cargo tank constructed of stainless steel, the maximum design stress may not exceed 75 percent of the ultimate tensile strength of the type steel used.

### *§178.338-3 (d) Structural integrity.*

Accident protection structures and external circumferential reinforcement devices must be used as sites for attachment of appurtenances and other accessories to the cargo tank, when practicable:

### *§178.338-3 (g) (1) Structural integrity.*

A lightweight attachment to the cargo tank wall such as a conduit clip, brakeline clip, skirting structure, lamp mounting bracket, or placard holder must be of a construction having lesser strength than the cargo tank wall materials and may not be more than 72 percent of the thickness of the material to which it is attached.

### *§178.338-3 (g) (2) Structural integrity.*

Except as prescribed in the 49 CFR code, the welding of any appurtenance to the cargo tank wall must be made by attachment of a mounting pad so that there will be no adverse effect upon the lading retention integrity of the cargo tank if any force less than that prescribed in the 49 CFR code is applied from any direction.

### *§178.338-3 (g) (3) Structural integrity.*

The thickness of the mounting pad may not be less than that of the shell or head to which it is attached and not more than 1.5 times the shell or head thickness.

### *§178.338-3 (g) (3) Structural integrity.*

*Each mounting pad must be fabricated from material determined to be suitable for welding to both the cargo tank material and the material of the appurtenance or structural support member*

***§178.338-3 (g) (3) (i) Structural integrity.***

Each mounting pad must be preformed to an inside radius no greater than the outside radius of the cargo tank at the attachment location.

***§178.338-3 (g) (3) (ii) Structural integrity.***

Each mounting pad must extend at least 2 inches in each direction from any point of attachment of an appurtenance or structural support member. This dimension may be measured from the center of the attached structural member.

***§178.338-3 (g) (3) (iii) Structural integrity. (iii)***

Each mounting pad must have rounded corners, or otherwise be shaped in a manner to minimize stress concentrations on the shell or head.

***§178.338-3 (g) (3) (iv) Structural integrity.***

### Sample Question

Each cargo tank must have an insulation system that will prevent the tank pressure from exceeding the pressure relief valve set pressure within the specified holding time when the tank is loaded with the specific cryogenic liquid at the design conditions of which of the following condition:

- A. The specified temperature and pressure of the cryogenic liquid
- B. The exposure of the filled cargo tank to an average ambient temperature of 85 °F
- C. The pressure of the cryogenic liquid
- D. The exposure of the filled cargo tank to an average ambient temperature of 114 °F.
- E. A and B

***Answer: E***

## Joins

All joints in the tank, and in the jacket if evacuated, must be as prescribed in the ASME Code, except that a butt weld with one plate edge offset is not authorized.

***§178.338-4 (a) Joins.***

Records of the qualification of welding procedure and welder performance tests must be retained by the tank manufacturer for at least five years and must be made available, upon request, to any duly identified representative of the U.S. Department of Transportation, or the owner of the cargo tank.

***§178.338-4 (b) Joins***

All longitudinal welds in tanks and load bearing jackets must be located so as not to intersect nozzles or supports other than load rings and stiffening rings.

***§178.338-4 (c) Joins***

Substructures must be properly fitted before attachment and the welding Substructures must be properly fitted before attachment and the welding sequence must minimize stresses due to shrinkage of welds.

***§178.338-4 (d) Joins***

Filler material containing more than 0.05 percent vanadium may not be used with quenched and tempered steel.

***§178.338-4 (e) Joins***

### Sample Question

The direction of final rolling of the shell material must be the circumferential orientation of the tank shell.

- A. True
- B. False

*Answer: A*

## Manholes

Each tank having a manhole must be provided with a means of entrance and exit through the jacket, or the jacket must be marked to indicate the manhole location on the tank.

***§178.338–6 (b) Manholes.***

A manhole with a bolted closure may not be located on the front head of the tank.

***§178.338–6 (c) Manholes.***

## Openings

The inlet to the liquid product discharge opening of each tank intended for flammable ladings must be at the bottom centerline of the tank.

***§178.338–7 (a) Openings.***

If the leakage of a single valve, except a Pressure relief valve , Pressure control valve, a Full trycock valve or a Gas phase manual vent valve would permit loss of flammable material, an additional closure that is leak tight at the tank design pressure must be provided outboard of such valve.

***§178.338–7 (b) Openings.***

## Pressure Relief Devices, Piping, Valves and Fittings

The burst pressure of all piping, pipe fittings, hoses and other pressure parts, except for pump seals and pressure relief devices, must be at least 4 times the design pressure of the tank.

***§178.338–8 (1) Pressure relief devices, piping, valves, and fittings***

Where copper tubing is permitted, Joints must be brazed or be of equally strong metal union type.

***§178.338–8 (2) Pressure relief devices, piping, valves, and fittings***



All Piping, valves and fittings on a cargo tank must be proved free from leaks.

*§178.338-8 (5) Pressure relief devices, piping, valves, and fittings*

Each valve must be suitable for the tank design pressure at the tank design service temperature.

*§178.338-8 (6) Pressure relief devices, piping, valves, and fittings*

## **Holding Time**

If more than one cargo tank is made to the same design, only one cargo tank must be subjected to the full holding time test at the time of manufacture.

*§ 178.338-9(c) Holding time.*

## **Accident Damage Protection**

All valves, fittings, pressure relief devices and other accessories to the tank proper, which are not isolated from the tank by closed intervening shut-off valves or check valves, must be installed within the motor vehicle framework or within a suitable collision resistant guard or housing, and appropriate ventilation must be provided.

*§ 178.338-10(a) Accident damage protection.*

Each pressure relief device must be protected so that in the event of the upset of the vehicle onto a hard surface, the device's opening will not be prevented and its discharge will not be restricted.

*§ 178.338-10(a) Accident damage protection.*

The static loading of a LNG cargo tank must equal to twice the loaded weight of the tank and attachments.

*§ 178.338-10(b) Accident damage protection.*

For Accident damage protection, a safety factor of four times, based on the tensile strength of the material, shall be used for a LNG cargo tank.

*§ 178.338-10(b) Accident damage protection.*

Each protective device or housing, and its attachment to the vehicle structure, must be designed to withstand static loading in any direction that it may be loaded as a result of a front, rear, side, or sideswipe collision, or the overturn of the vehicle.

**§178.338-10(b) Accident damage protection**

The protective device or the housing must be made of steel at least 3/16-inch thick, or other material of equivalent strength for accident damage protection for a LNG cargo tank.

**§ 178.338-10(b) Accident damage protection.**

The following is required Rear-end tank protections devices: (1) At least one rear bumper designed to protect the cargo tank and piping in the event of a rear-end collision. (2) Device design must transmit the force of the collision directly to the chassis of the vehicle. (3) The rear-end tank protection device dimensions must extend vertically to a height adequate to protect all valves and fittings located at the rear of the cargo tank from damage that could result in loss of lading

**§ 178.338-10(c) Rear-end tank protection.**

Every part of the loaded cargo tank, and any associated valve, pipe, enclosure, or protective device or structure (exclusive of wheel assemblies), must be at least 14 inches above level ground.

**§ 178.338-10(d) Rear-end tank protection.**

### Sample Question

The minimum thickness of the shell or heads of the tank must be \_\_\_\_\_ inch for steel and \_\_\_\_\_ inch for aluminum.

- A. 0.157 / 0.240
- B. 0.167 / 0.250
- C. 0.177 / 0.260
- D. 0.187 / 0.270

*Answer: D*

## Discharge Control Devices

If the LNG cargo transport jacket is not evacuated, the seat of the remotely controlled self-closing shutoff valve must be Inside the tank, in the opening nozzle or flange, or in a companion flange bolted to the nozzle

***§178.338-11 (c) (1) Discharge control devices.***

For cargo tank motor vehicle discharge control devices, one means may be used to close more than one remotely controlled valve.

***§178.338-11 (c) (2) Discharge control devices.***

For cargo tank motor vehicle discharge control devices, the loading/unloading connection area is where hoses are connected to the permanent metal piping.

***§178.338-11 (c) (2) Discharge control devices.***

## Supporting and Anchoring

On a cargo tank motor vehicle designed and constructed so that the cargo tank constitutes in whole or in part the structural member used in place of a motor vehicle frame, the cargo tank or the jacket must be supported by external cradles or by load rings.

***178.338-13 (a) Supporting and anchoring.***

For a cargo tank mounted on a motor vehicle frame, the tank or jacket must be supported by external cradles or by load rings

***178.338-13(a) Supporting and anchoring.***

If cradles are used for supporting and anchoring, they must subtend at least 120 degrees of the cargo tank Circumference.

***178.338-13(a) Supporting and anchoring.***

When a loaded tank is supported within the vacuum jacket by structural members, the design calculations for the tank and its structural members must be based on a safety factor of four and the tensile strength of the material at ambient temperature.

***13. 178.338-13(b) Supporting and anchoring.***

For a cargo tank the enhanced tensile strength of the material at actual operating temperature may be substituted for the tensile strength at ambient temperature to the extent recognized in the ASME Code for static loadings.

***178.338–13(b) Supporting and anchoring.***

## **Gauging devices**

A fixed-length dip tube, a fixed trycock line, or a differential pressure liquid level gauge must be used as the primary control for filling. Other gauging devices, except gauge glasses, may be used, but not as the primary control for filling

***§ 178.338–14 Gauging devices (a) (1).***

## **Marking**

Each cargo tank certified after October 1, 2004 must have a corrosion- resistant metal name plate (ASME Plate) and specification plate permanently attached to the cargo tank by brazing, welding, or other suitable means on the left side near the front, in a place accessible for inspection.

***§ 178.338(a)–18 Marking.***

If the specification plate is attached directly to the cargo tank wall by welding, it must be welded to the tank before the cargo tank is postweld heat treated.

***§ 178.338(a)–18 Marking.***

Each insulated cargo tank must have the corrosion- resistant metal name plate (ASME Plate) and specification plate attached to the jacket in the location specified unless the specification plate is attached to the chassis and has the information as required.

***§178.338–18 (a) (2) Marking.***

## **GENERAL REQUIREMENTS (ADMINISTRATIVE)**

### **Licenses, Related Fees**

A Category 20 license for transport outfitters authorizes the subframing, testing, and sale of LNG transport containers; the testing of LNG storage containers; the installation, testing, and sale of LNG motor or mobile fuel containers and systems; and the installation and repair of transport systems and motor or mobile fuel systems for use in Texas.

*LNG Safety Rules §14.2013 (b) (1)*

### **Licenses Requirements**

(a) A person is required to obtain a license from the commission to engage in any of the following activities:

(1) work that includes the manufacture, assembly, repair, testing, sale, installation, or subframing of LNG containers for use in this state;

(2) systems work that includes the sale, installation, modification, or servicing of LNG systems for use in this state, including the installation, modification, or servicing by any person, except a political subdivision, of a LNG motor fuel system or mobile fuel system on a vehicle used in the transportation of the general public; or

(3) product work that includes the sale, storage, transportation for delivery, or dispensing of LNG state.

(b) A license obtained by a partnership, corporation or other Legal entity extends to the entity's employees who are performing LNG work, provided that each employee is qualified and registered as required by rules adopted by the commission.

(c) No license is required by an original vehicle manufacturer or a subcontractor of such manufacturer for the installation and sale of a new LNG system when such system is installed on a new original vehicle fueled by LNG.

***NRC-116.031 p.145***

(c) Licensees must maintain a copy of the current version of the *Regulations for Liquefied Natural Gas* adopted by the Commission and must provide at least one copy to each company representative and operations supervisor.

(d) Licensees and operations supervisors at each outlet must have all current licenses and certificates available for inspection during regular business hours.

(f) (2) if a person's license has been expired for more than 90 calendar days but less than one year, the person must submit a renewal fee that is equal to two times the renewal fee.

(f) (3) if a person's license has been expired for one year or longer, that person may not renew, but must comply with the requirements for issuance of an original license.

***LNG Safety Rules, §14.2016***

**Certification Requirements**

(a) (1) No individual may work or be employed in any capacity which requires contact with LNG or LNG systems until that individual has submitted to and passed a commission examination

(a) (5) (B) Successful completion of any required examination must be credited to the individual.

An individual who has been issued a certification card must make the card readily available and must present the card to any Commission employee or agent who requests proof of certification.

(a) (5) (C) Any individual who fails an examination must be immediately disqualified from performing any LNG activities covered by that examination.

(d) To maintain active status, a certificate holder must pay the \$25 annual renewal fee on or before May 31 of each year.

*LNG Safety Rules, §14.2019*

#### **Entry on Property; Inspection and Investigation**

(a) A commission authorized person may enter the premises of a licensee or any building or other premises open to the public or inspect any LNG system or motor vehicle equipped with LNG equipment any reasonable time.

(b) Any authorized commission representative may enter any building or premises where an accident has occurred in which LNG was a probable cause for purposes of investigating the Cause, origin, and circumstances of such accident.

During the Commission investigation of a LNG related accident the Commission may request that any state or local authority having jurisdiction take appropriate action as may be necessary for preservation of property and premises.

*NRC-116.015 p.145*

### **Insurance Requirements**

(a) All licensees must acquire and maintain appropriate workers' compensation or coverage for its employees under policies of work-related accident, disability, and health insurance, including coverage for death benefits, from an insurance carrier authorized to provide coverage in this state and other insurance coverage required by the commission in the amounts required by the commission.

*NRC-116.036 p.149*

### **Disciplinary Action**

(e) During a proceeding hearing for Disciplinary Action involving a LNG Licensee, if the Commission determines that a probable violation or noncompliance concerning CNG motor vehicles constitutes an immediate danger to the public health, safety, or welfare, it must require the immediate cessation of the probable violation or noncompliance

*NRC-116.037p.149*

### **Injunctive Relief**

(a) On request of the commission, the Attorney General of Texas may bring suit in the name of the state to enjoin a person from violating this chapter or a rule adopted under this chapter.

*NRC-116.141 p.152*

### **Administrative Penalty**

(a) A civil penalty under Chapter 116 may be assessed after the persons charged with the violation have been given an opportunity to schedule or be granted a public hearing.

(b) Each day a violation continues may be considered a separate violation for purposes of penalty assessments, the maximum civil penalty that may be assessed is \$10,000 per day per violation.



*NRC-116.143 p.152*

### **Penalty Assessment Procedure**

(a) A civil penalty may be assessed only after the person charged with the violation has been given an opportunity for a public hearing

*NRC-116.144 p.153*

### **Report of LNG Incident/Accident**

(a) If an incident or accident occurs during transport, as a result of a pullaway, or where LNG is or is suspected to be the cause, the licensee or nonlicensee owning, operating, or servicing the installation must notify the Safety Division by telephone as soon as possible after the licensee or nonlicensee has knowledge of the incident or accident if any of the following occurs:

- (1) A spill of 25 gallons or more of LNG;
- (2) Property damage of \$1,000 or greater; or
- (3) An injury requiring transport to a medical facility.

(b) Any transport unit required to be registered with LP-Gas Operations involved in an accident where there is damage to the tank, piping appurtenances, or any release of LNG resulting from the accident must be reported to the Safety Division, regardless of the accident location. Any LNG-powered motor vehicle used for school transportation or mass transit, including any state-owned vehicle, which is involved in an accident resulting in a release of LNG or damage to LNG equipment must be reported to the Safety Division, regardless of the accident location.

(c) The telephone notification must include the following information:

- (1) The date and time of the incident or accident;
  - (2) Type of structure or equipment involved;
  - (3) Resident's or operator's name;
  - (4) Physical location;
  - (5) Number and type of injuries or fatalities;
  - (6) Whether fire, explosion, or leak has occurred;
  - (7) Whether LNG is currently leaking; and
  - (8) Whether immediate assistance from the division is requested.
- (d) The individual making the telephone notification must leave his or her name and telephone number.
- (e) Following the initial telephone report of any of the incidents or accidents described in this section, the licensee must file LNG Form 2020 with the Safety Division. The form must be postmarked within 14 calendar days of the date of initial notification to the Safety Division.

***LNG Safety Rules §14.2049***

### Sample Question

At the request of the Railroad Commission, which state entity must bring suit in the name of the state to enjoin a person from violating Chapter 116 or a rule adopted under Chapter 116?

- A. State Office of Administrative Hearings
- B. Travis County District Attorney
- C. Texas Attorney General's Office
- D. Texas Department of Public Safety

Answer: C

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