

**TITLE 20 ENVIRONMENTAL PROTECTION**

[CLEAN JJP 4 12 07]

**CHAPTER 5 PETROLEUM STORAGE TANKS**

**PART 4 NEW AND UPGRADED STORAGE TANK SYSTEMS: DESIGN,  
CONSTRUCTION AND INSTALLATION**

20.5.4.1 ISSUING AGENCY: New Mexico Environmental Improvement Board.

20.5.4.2 SCOPE: This part applies to owners and operators of storage tanks as provided in 20.5.1 NMAC. If the owner and operator of a storage tank are separate persons, only one person is required to comply with the requirements of this part, including any notice and reporting requirements; however, both parties are liable in the event of noncompliance.

20.5.4.3 STATUTORY AUTHORITY: This part is promulgated pursuant to the provisions of the Hazardous Waste Act, NMSA 1978, sections 74-4-1 through 74-4-14, and the general provisions of the Environmental Improvement Act, NMSA 1978, sections 74-1-1 through 74-1-15.

20.5.4.4 DURATION: Permanent.

20.5.4.5 EFFECTIVE DATE: \_\_\_\_\_, 200\_, unless a later date is indicated in the bracketed history note at the end of a section.

20.5.4.6 OBJECTIVE: The purpose of 20.5.4 NMAC is to set forth the requirements for the design, construction, installation and upgrading of storage tank systems in a manner that will prevent releases and to protect the public health, safety and welfare and the environment of the state.

20.5.4.7 DEFINITIONS: The definitions in 20.5.1 NMAC apply to this part.

20.5.4.8 GENERAL PERFORMANCE STANDARDS FOR UST SYSTEMS: In order to prevent releases due to structural failure, corrosion or spills and overfills for as long as a UST system is used to store regulated substances, owners and operators of any UST system shall properly design, construct, and initially test each new UST system, provide project drawings, and ensure that any portion of a UST system that routinely contains regulated substances and is in contact with the ground or water shall be protected from corrosion, in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. Owners and operators shall ensure that the entire UST system is compatible with any regulated substance conveyed, as required by 20.5.5.16 NMAC.

20.5.4.9 PERFORMANCE STANDARDS FOR FIBERGLASS-REINFORCED PLASTIC USTS: If a UST is constructed of fiberglass-reinforced plastic, owners and operators shall comply with the requirements of the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

A. Underwriters Laboratories Standard 1316, “Standard for Safety for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures;”

B. Underwriters’ Laboratories of Canada CAN4-S615-M83, “Standard for Underground Reinforced Plastic Tanks;”

C. American Society of Testing and Materials D4021 “Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks.”

#### 20.5.4.10 PERFORMANCE STANDARDS FOR STEEL USTS:

A. Owners and operators shall cathodically protect steel USTs in the following manner:

- (1) coat the tank with a suitable dielectric material;
- (2) ensure that field-installed cathodic protection systems are designed by a corrosion expert;
- (3) design impressed current systems to allow determination of current operating status as required in Subsection C of 20.5.5.15 NMAC; and
- (4) operate and maintain cathodic protection systems in accordance with 20.5.5 NMAC.

B. In addition, owners and operators shall ensure that for any new or existing steel UST systems, owners and operators shall design and install any cathodic protection system (whether impressed current or sacrificial) to allow ready determination of current operating status.

C. The following may be used to comply with applicable requirements of this section:

- (1) Steel Tank Institute “Specification for Sti-P3 System of External Corrosion Protection of Underground Steel Storage Tanks;”
- (2) Underwriters Laboratories Standard 1746, “External Corrosion Protection Systems for Steel Underground Storage Tanks;”
- (3) Underwriters’ Laboratories of Canada CAN4-S603-N85, “Standard for Underground Steel Tanks;”
- (4) Underwriters’ Laboratories of Canada CAN4-G603.1-M85, “Standard for Galvanic Corrosion Protection Systems for Underground Steel;”
- (5) Underwriters’ Laboratories of Canada CAN4-S631-M84, “Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems;”
- (6) National Association of Corrosion Engineers Standard RP0285, “Corrosion Control of Underground Storage Tanks Systems by Cathodic Protection,” or
- (7) Underwriters Laboratories Standard 58, “Standard For Safety for Steel Underground Tanks for Flammable and Combustible Liquids.”
- (8) National Fire Protection Association 30, “Flammable and Combustible Liquids Code;”
- (9) National Fire Protection Association 30A, “Code for Motor Fuel Dispensing Facilities and Repair Garages;”
- (10) American Petroleum Institute Publication RP 1615, “Installation of Underground Petroleum Storage Systems;”
- (11) American Petroleum Institute Publication RP 1632, “Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems;”

(12) National Association of Corrosion Engineers International Standard RP0169 “Control of External Corrosion on Underground or Submerged Metallic Piping Systems;”

(13) Steel Tank Institute R892, “Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems;”

(14) American Petroleum Institute Publication RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks;"

(15) National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of Cathodic Protection;" or

(16) American Society of Testing and Materials G158, “Standard Guide for Three Methods of Assessing Buried Steel Tanks.”

20.5.4.11 PERFORMANCE STANDARDS FOR STEEL-FIBERGLASS-REINFORCED-PLASTIC COMPOSITE USTS: If a UST is constructed of a steel-fiberglass-reinforced-plastic composite, owners and operators shall meet the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

A. Underwriters Laboratories Standard 1746, “External Corrosion Protection Systems for Steel Underground Storage Tanks;” or

B. Association for Composite Tanks ACT-100, “Specification for the Fabrication of FRP Clad Underground Storage Tanks.”

20.5.4.12 PERFORMANCE STANDARDS FOR METAL USTS WITHOUT CORROSION PROTECTION: If a UST is constructed of metal without additional corrosion protection measures, owners and operators shall only install the tank at a site that is approved in writing by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operational life in advance of installation.

20.5.4.13 PERFORMANCE STANDARDS FOR EXISTING UST SYSTEMS:

A. Not later than December 22, 1998, all existing UST systems shall comply with one of the following requirements:

(1) new UST performance standards in 20.5.4 NMAC;

(2) upgrading requirements in Subsection B of 20.5.4.13 NMAC; or

(3) closure requirements in 20.5.8 NMAC.

B. UST upgrading requirements. Owners and operators shall upgrade existing steel USTs to meet one of the following requirements in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department:

(1) Internal lining. A UST may be upgraded by internal lining if the lining is installed in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. If a UST has been internally lined, owners and operators shall, within 10 years after installation of internal lining and every five years thereafter, internally inspect the lined tank in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory, or

manufacturer's recommendation, approved in advance by the department. National Leak Prevention Association 631, Chapter B may be used to comply with this requirement. If the internal lining is not performing in accordance with the original design specifications, owners and operators shall either:

(a) close the tank in compliance with the requirements of 20.5.8 NMAC until the lining is repaired to original design specifications in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. American Petroleum Institute RP 1631 may be used to comply with this requirement; or

(b) discontinue use of the tank until owners and operators perform an integrity test approved in advance by the department and ensure that the tank meets the requirements of subsection B of this section.

(2) Cathodic protection. USTs may be upgraded by cathodic protection if the cathodic protection system meets the requirements of 20.5.4.10 NMAC and if owners and operators ensure the integrity of the tank using one of the following methods:

(a) internal inspection and assessment to ensure that the tank is structurally sound and free of corrosion holes prior to installing the cathodic protection system;

(b) monitoring a tank monthly for releases in accordance with 20.5.6 NMAC, and the tank has been installed for less than 10 years; or

(c) assessing for corrosion holes by conducting 2 tightness tests that meet the requirements in 20.5.6 NMAC and that are approved in advance by the department, and the tank has been installed for less than 10 years. Owners and operators shall conduct the first tightness test prior to installing the cathodic protection system. Owners and operators shall conduct the second tightness test between 3 and 6 months following the first operation of the cathodic protection system; or

(3) Internal lining combined with cathodic protection. A UST may be upgraded by internal lining combined with cathodic protection if:

(a) The lining is installed in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory; and

(b) The cathodic protection meets requirements of 20.5.4.10 NMAC.

C. Piping upgrade requirements. Owners and operators shall upgrade piping in existing UST systems to meet the requirements of 20.5.4.21 NMAC, 20.5.4.22 NMAC, or 20.5.4.24 NMAC.

D. Spill and overflow prevention equipment. Owners and operators shall comply with the spill and overflow prevention requirements in 20.5.4.33 NMAC.

#### 20.5.4.14 INSTALLATION OF UST SYSTEMS:

A. Owners and operators shall properly install all USTs and piping:

(1) in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department; and

(2) in accordance with the manufacturer's instructions.

B. The following may be used to comply with the requirements of this section:

(1) American Petroleum Institute Publication RP 1615, "Installation of Underground Petroleum Storage Systems;"

(2) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems;" or

(3) American Society of Mechanical Engineering Standard B31.3, "Process Piping."

#### 20.5.4.15 SECONDARY CONTAINMENT FOR UST SYSTEMS:

A. After [the effective date of these regulations] owners and operators shall install secondary containment for any new UST system (including dispensers and piping) and for any UST, dispenser or piping replaced after [the effective date of these regulations].

(1) Owners and operators shall design, provide project drawings for, and construct the entire new UST system with the secondary containment system in compliance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The secondary containment system shall include all tanks, piping and dispensers, and shall include interstitial monitoring that meets the requirements of 20.5.6.603 and 604.

(2) If owners and operators replace a UST, they shall install a double-walled tank with an inner and outer barrier and a release detection system that meets the requirements of 20.5.6 NMAC.

(3) If owners and operators replace a dispenser, they shall install an under-dispenser containment system that shall be hydrostatically tested and approved by the department prior to use, in accordance with manufacturer's recommendations. Types of under-dispenser containment systems include, but are not limited to, dispenser liners, containment sumps, dispenser pans and dispenser sump liners.

(4) If owners and operators replace piping, they shall install only double-walled piping with an inner and outer barrier and a release detection system that meets the requirements of 20.5.6 NMAC for the replaced piping.

(5) The following may be used to comply with secondary containment requirements:

(a) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems; or

(b) American Petroleum Institute Publication RP 1615, "Installation of Underground Petroleum Storage Systems.

B. The department shall not require owners and operators to install secondary containment required in this section, if the owners and operators demonstrate to the department's satisfaction that no part of the UST system is within 1,000 feet of a community water system, potable drinking water well, or source water.

(1) Owners and operators shall submit in advance of construction or replacement, for approval by the department, a detailed to-scale map of the proposed UST system that demonstrates that no part of the UST system is within 1,000 feet of any existing community water system, any existing potable drinking water well, any potable drinking water well the owner or operator plans to install at the facility, or any source water.

(2) The map shall be accompanied by a certified statement by owners and operators explaining who researched the existence of community water systems, potable drinking water wells, and source water, how the research was conducted, and that the proposed UST system complies with this subsection.

(3) To determine if any part of a UST system is within 1,000 feet of any existing community water systems, potable drinking water well, or source water, at a minimum owners and operators shall measure the distance from the closest part of the new or replaced UST, piping or dispenser, or other part of a UST system, to the closest part of the nearest community water system, potable drinking water well, or source water, including such components as the location of wellheads for groundwater, depth to groundwater, the location of the intake point for surface water, water lines, processing tanks, water storage tanks, and water distribution or service lines.

C. In a manifolded UST system, secondary containment is only required for a new or replaced UST; existing USTs in the manifolded system are not required to have secondary containment. Additionally, the secondary containment requirements of this section shall not apply to:

- (1) repairs meant to restore a UST, piping or dispenser to operating condition;
- (2) piping runs that are not new or replaced for USTs with multiple piping runs;

or

- (3) suction piping that meets the requirements of 20.5.6.601.B(2)(a)-(e) NMAC.

#### 20.5.4.16 PERFORMANCE STANDARDS FOR AST SYSTEMS:

A. In order to prevent releases due to structural failure, corrosion or spills and overfills for as long as an AST system is used to store regulated substances, owners and operators of new AST systems shall properly design, construct and initially test each new AST system, provide project drawings, and ensure that any portion of an AST system that routinely contains regulated substances and is in contact with soil, concrete or water shall be protected from corrosion, in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. Owners and operators shall ensure that the entire AST system is compatible with any regulated substance conveyed.

B. Owners and operators shall only install and operate ASTs made of steel.

C. The following may be used to comply with the requirements of this section:

- (1) Underwriters Laboratories 142, "Steel Aboveground Tanks for Flammable and Combustible Liquids;"
- (2) Underwriters Laboratories 2085, "Standard for Safety for Protected Aboveground Tanks for Flammable and Combustible Liquids;"
- (3) Underwriters Laboratories 2245, "Standard for Safety for Below-Grade Vaults for Flammable Liquid Storage Tanks;"
- (4) American Petroleum Institute Standard 650, "Welded Steel Tanks for Oil Storage;"
- (5) National Fire Protection Association 30, "Flammable and Combustible Liquids Code;"
- (6) National Fire Protection Association 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages;"
- (7) Petroleum Equipment Institute Publication RP200, "Recommended Practices for Installation of Above Ground Storage Systems for Motor Vehicle Fueling;"
- (8) American Petroleum Institute Publication RP 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems;"
- (9) National Association of Corrosion Engineers International Standard RP0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems;"

(10) Steel Tank Institute R892, “Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems;” or

(11) Steel Tank Institute R893, “Recommended Practice for External Corrosion Protection of Shop Fabricated Aboveground Tank Floors.”

20.5.4.17 USTS USED AS ASTS:

A. Before August 15, 2003, owners and operators shall close any above ground storage tank that was designed and built for underground use, unless the tanks meets one of the following requirements:

(1) The tank is certified for above-ground use by the original equipment manufacturer, in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance in writing by the department;

(2) A professional engineer certifies that the tank meets the standards for above-ground use in the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance in writing by the department; or

(3) The tank is certified for above-ground use by either an authorized inspector with certification from the American Petroleum Institute, or a Steel Tank Institute trained and certified tank inspector, approved in advance in writing by the department. The inspector shall personally inspect the tank in order to complete the certification process.

B. After [the effective date of these rules] owners and operators shall not install USTs for use as ASTs.

20.5.4.18 ADDITIONAL PERFORMANCE STANDARDS FOR FIELD-ERECTED ASTS:

A. If owners and operators install a field-erected tank, owners and operators shall comply with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department.

B. The following may be used to comply with the requirements of this section:

(1) American Petroleum Institute Standard 620, “Design and Construction of Large, Welded, Low Pressure Storage Tanks;”

(2) American Petroleum Institute Standard 650, “Welded Steel Tanks for Oil Storage;”

(3) American Petroleum Institute Specification 12B, “Bolted Tanks for Storage of Production Liquids;”

(4) American Petroleum Institute Specification 12D, “Field Welded Tanks for Storage of Production Liquids;” or

(5) American Society of Mechanical Engineers B96.1, “Welded Aluminum-Alloy Storage Tanks.”

20.5.4.19 INSTALLATION OF AST SYSTEMS:

A. Owners and operators shall properly install all ASTs and piping:

(1) in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department, that includes or provides for the following;

- (a) foundation, support and anchorage;
- (b) fills, gauges and vents;
- (c) environmental protection;
- (d) testing and inspection; and

(2) in accordance with the manufacturer's instructions.

B. The following may be used to comply with the requirements of this section:

(1) American Petroleum Institute Standard 650, "Welded Steel Tanks for Oil Storage;"

(2) National Fire Protection Association 30, "Flammable and Combustible Liquids Code;"

(3) National Fire Protection Association 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages;"

(4) Petroleum Institute Publication RP200, "Recommended Practices for Installation of Above Ground Storage Tank Systems for Motor Vehicle Fueling;" or

(5) Steel Tank Institute RP R912, "Installation Instructions for Shop Fabricated Stationary Aboveground Storage Tanks for Flammable, Combustible Liquids."

C. In addition to other requirements of this section, if owners or operators want to place into service any shop-fabricated AST that has been permanently closed at any location, owners and operators shall:

(1) not use the AST until they have provided to the department:

- (a) the age and type of tank;
- (b) the tank manufacturer;
- (c) a list of regulated and non-regulated substances previously stored in the tank and for what duration; and
- (d) a description of any unusual circumstances involving the AST; and

(2) install the system in compliance with all requirements for new AST systems in this part.

D. Based on the information received in Subsection C of this section, the department may require owners and operators who want to re-locate an AST to have the tank recertified by a certified tank inspector, the tank manufacturer, or a professional engineer prior to use.

#### 20.5.4.20 GENERAL PERFORMANCE STANDARDS FOR PIPING:

A. Owners and operators shall properly design and construct new piping, provide project drawings, initially test piping, and ensure that any steel portion of piping that routinely contains regulated substances and is in contact with the ground or water shall be protected from corrosion, in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

- (1) third party certification from a nationally recognized laboratory;
- (2) American Society of Mechanical Engineering Standard B31.3, "Process

Piping;"

(3) American Society of Testing and Materials A53, "Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless;"

(4) American Society of Testing and Materials A106, "Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service;" or

(5) American Society of Testing and Materials A135, Standard Specification for Electric-Resistance-Welded Steel Pipe."

B. Owners and operators shall ensure that piping is compatible with any regulated substance conveyed.

C. Owners and operators shall protect all piping from impact, settlement, vibration, expansion, corrosion, damage by fire.

D. Owners and operators shall install a containment sump at any point where piping transitions from above the surface of the ground to below the ground surface.

E. If owners and operators install more than one type of piping at a storage tank system, then owners and operators shall comply with the requirements applicable to each type of piping for that run of piping.

#### 20.5.4.21 PERFORMANCE STANDARDS FOR FIBERGLASS-REINFORCED PLASTIC AND FLEXIBLE PIPING;

A. If owners and operators construct or operate piping of fiberglass-reinforced plastic or flexible piping for a UST system, the piping shall be:

(1) completely underground;

(2) within secondary containment that includes a release detection system that meets the requirements of 20.5.6 NMAC;

(3) with a suitable cover approved by the piping manufacturer; or

(4) with equivalent protection approved by the piping manufacturer and approved by the department prior to installation.

B. If owners and operators install fiberglass-reinforced or flexible piping in an AST system, the piping shall be double-walled.

C. Owners and operators shall ensure that the piping meets the requirements of the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department, and that the piping is approved by the manufacturer for the application for which it is to be used. The following may be used to comply with this requirement:

(1) Underwriters Laboratories Standard 971, "Standard for Safety for Nonmetallic Underground Piping for Flammable Liquids;"

(2) Underwriters Laboratories Standard 567, "Pipe Connectors for Petroleum Products and LP-Gas;"

(3) Underwriters' Laboratories of Canada Guide ULC-107.7, "Glass-Fibre Reinforced Plastic Pipe and Fittings for Flammable Liquids;" or

(4) Underwriters' Laboratories of Canada Standard CAN 4-S633-M81, "Flexible Underground Hose Connectors."

#### 20.5.4.22 PERFORMANCE STANDARDS FOR STEEL PIPING FOR UST SYSTEMS:

A. If owners and operators construct or operate piping of steel for a UST system, owners and operators shall:

(1) coat the piping with a suitable dielectric material;

(2) field-install a cathodic protection system designed by a corrosion expert; and

(3) design any impressed current system to allow ready determination of current operating status as required in Subsection C of 20.5.5.15 NMAC.

B. If owners and operators construct piping of steel for a UST system without additional corrosion protection measures, owners and operators shall only install the piping at a site that is approved in writing by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operational life.

#### 20.5.4.23 PERFORMANCE STANDARDS FOR STEEL PIPING FOR AST SYSTEMS:

If owners and operators construct or operate piping of steel for an AST system, owners and operators shall properly design and construct and provide project drawings for piping that routinely contains regulated substances in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. Owners and operators shall install all piping in accordance with the piping manufacturer's recommendations.

A. Steel piping for ASTs shall be coated with a suitable material approved by the piping manufacturer and shall either:

- (1) be totally above the ground with all surfaces visible, or
- (2) be entirely contained in secondary containment that complies with the requirements of 20.5.4.27 NMAC and either the requirements of 20.5.4.28 or 20.5.4.29 NMAC.

B. The following may be used to comply with the requirements of this section:

- (1) American Society of Mechanical Engineering Standard B31.3, "Process Piping;"
- (2) American Society of Testing and Materials A53, "Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless;" or
- (3) American Society of Testing and Materials A 135, "Standard Specification for Electric-Resistance-Welded Steel Pipe."

#### 20.5.4.24 SECONDARY CONTAINMENT FOR PIPING:

A. Owners and operators shall only install or replace piping for AST systems that is:

- (1) double-walled in compliance with 20.5.4.28 NMAC;
- (2) designed and constructed with secondary containment that meets the requirements of 20.5.4.27 and 20.5.4.29 NMAC; or

- (3) steel piping that meets the requirements of 20.5.4.23 NMAC.

B. After [the effective date of these regulations], owners and operators shall only install or replace piping for UST systems that meets the requirements of 20.5.4.15 NMAC.

#### 20.5.4.25 ADDITIONAL REQUIREMENTS FOR AST SYSTEMS:

Above ground tanks located at an elevation so as to produce a gravity head on the dispenser or piping shall be equipped with an anti-siphon or solenoid valve which meets the requirements of the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. National Fire Protection Association 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages," may be used to meet this requirement. Owners and operators shall install and adjust the anti-siphon or solenoid valve so that fuel cannot flow by gravity from the tank to the dispenser if the piping fails when the dispenser is not in use.

20.5.4.26 STORAGE TANKS AT MARINAS:

A. Owners and operators of storage tank systems at marinas shall install an automatic break-away device to shut off flow of fuel from on-shore piping, which shall be located at the connection of the on-shore piping and the piping leading to the dock. Owners and operators shall install another automatic break-away device to shut off flow of fuel located at any connection between flexible piping and hard piping on the dispenser and dock. The automatic break-away devices shall be easily accessible, and their location shall be clearly marked.

B. Owners and operators of storage tank systems at marinas shall electrically isolate dock piping where excessive stray currents are encountered.

C. Owners and operators of storage tank systems at marinas shall protect piping from stress due to tidal action.

20.5.4.27 SECONDARY CONTAINMENT FOR NEW AST SYSTEMS: Owners and operators shall design, provide project drawings for, and construct all new AST systems with a secondary containment system approved in this part, except for any piping that meets the requirements of 20.5.4.23 NMAC. Owners and operators shall base all secondary containment systems on the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

A. Petroleum Equipment Institute Publication RP 200, "Recommended Practices for Installation of Above Ground Storage Systems for Motor Vehicle Fueling;"

B. Society of Protective Coatings SSPC-TU2/NACE6G197, "Design, Installation and Maintenance of Coating Systems for Concrete Used in Secondary Containment;"

C. American Concrete Institute Publication ACI 350R, "Environmental Engineering of Concrete Structures;"

D. American Petroleum Institute Standard 650, "Welded Steel Tanks for Oil Storage;" or

E. Steel Tank Institute RP R912, "Installation Instructions for Shop Fabricated Stationary Aboveground Storage Tanks for Flammable, Combustible Liquids."

20.5.4.28 AST SECONDARY CONTAINMENT: DOUBLE-WALLED TANKS AND PIPING: Owners and operators may use double-walled ASTs and piping as secondary containment. The following may be used to comply with the requirements of this section and 20.5.4.27 NMAC:

A. Underwriters Laboratories Standard 971, "Standard for Safety for Nonmetallic Underground Piping for Flammable Liquids;"

B. Underwriters Laboratories Standard 567, "Pipe Connectors for Petroleum Products and LP-Gas;"

C. Underwriters' Laboratories of Canada Guide ULC-107.7, "Glass-Fibre Reinforced Plastic Pipe and Fittings for Flammable Liquids;"

D. Underwriters' Laboratories of Canada Standard CAN 4-S633-M81, "Flexible Underground Hose Connectors;"

E. Underwriters Laboratories 142, "Steel Aboveground Tanks for Flammable and Combustible Liquids;"

F. Underwriters Laboratories 2085, "Standard for Safety for Protected Aboveground Tanks for Flammable and Combustible Liquids;" or

G. Underwriters Laboratories 2245, “Standard for Safety for Below-Grade Vaults for Flammable Liquid Storage Tanks.”

20.5.4.29 AST SECONDARY CONTAINMENT: SINGLE-WALLED TANKS AND PIPING: Owners and operators shall construct a containment area under and around single-walled ASTs and piping, except for piping that meets the requirements of 20.5.4.23 NMAC. Internal lining of ASTs shall not be used as a method of secondary containment.

A. General requirements:

(1) Owners and operators shall design and construct secondary containment to minimize damage to the surfaces of the tanks due to corrosion, accumulation of water, and stray electrical current.

(2) Owners and operators shall ensure that any regulated substance stored in an AST system is chemically compatible with the secondary containment material. If owners and operators store more than one type of regulated substance within a single containment area, owners and operators shall ensure that the substances are chemically compatible with each other and with the containment material.

(3) Owners and operators shall construct a containment area which has a capacity of at least one hundred ten percent of the size of the largest AST in the containment area plus the area displaced by the other AST(s).

(4) Owners and operators shall not use clay for the construction of secondary containment.

(5) Owners and operators may use a vault which complies with the requirements of this section as secondary containment.

B. Concrete secondary containment. Owners and operators may use concrete for construction of the containment area.

(1) If owners and operators use concrete for construction of secondary containment, the concrete containment shall be constructed in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory, which shall be approved in advance of construction by the department. Concrete secondary containment shall be coated or internally lined with a material which, in conjunction with the concrete, has a permeability rate to the regulated substance stored of  $1 \times 10^{-7}$  centimeters per second or less.

(2) Existing AST systems with secondary containment constructed of concrete shall meet the requirements of this section on the schedule established in 20.5.4.35 NMAC, if the secondary containment is made impervious in accordance with the standard in paragraph 1 of this Subsection. Owners and operators shall install the coating or internal lining in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory, which shall be approved by the department in advance of installation.

(3) Owners and operators of AST systems shall submit to the department a report on the installation of the coating or internal lining for concrete secondary containment which shall certify that the coating or internal lining has been installed in accordance with the manufacturer's recommendations or an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory. The report shall contain the date of the inspection or installation, the test methods used during the inspection, the data

collected during the inspection, and the standard or code of practice to which the installation was conducted. One of the following shall conduct the inspection and prepare the inspection report:

(a) A Coating Inspector who is certified by the National Association of Corrosion Engineers; or

(b) A Protective Coatings Specialist who is certified by the Society for Protective Coatings.

(4) The following may be used to comply with the concrete secondary containment requirements:

(a) American Concrete Institute 350R, "Environmental Engineering of Concrete Structures;"

(b) American Concrete Institute 224R, "Control of Cracking in Concrete Structures;"

(c) National Association of Corrosion Engineers International RP0892, "Coatings and Linings over Concrete for Chemical Immersion and Containment Service;"

(d) Society of Protective Coatings TU2/NACE6G197, "Design, Installation and Maintenance of Coating Systems for Concrete Used in Secondary Containment;"

(e) National Association of Corrosion Engineers International Standard Number 6/SSPC 13, "Surface Preparation of Concrete;"

(f) National Association of Corrosion Engineers International RP0281, "Method for Conducting Coating (Paint) Panel Evaluation Testing in Atmospheric Exposures; or

(g) American Society for Testing and Materials D4258, "Standard Practice for Cleaning Concrete for Coating."

C. Liners as secondary containment.

(1) If owners and operators use geo-synthetic membrane for secondary containment, the geo-synthetic membranes or liners shall have a minimum thickness of 60 mils.

(2) Owners and operators shall install liners in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department, or in accordance with the manufacturer's specifications. Owners and operators shall submit to the department a report on the installation of the geo-synthetic membrane which shall certify that the geo-synthetic membrane has been installed in accordance with the manufacturer's recommendations or an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory. The report shall contain the date of the inspection and installation of the geo-synthetic membrane, the test methods used during the inspection, data collected during the inspection, and the standard or code of practice to which the installation was conducted. An installer or inspector with appropriate certification or experience (which shall be documented in the report) shall prepare the report.

(3) Earthen dike fields shall be lined with a geo-synthetic membrane to qualify as secondary containment.

D. Steel as secondary containment. If owners and operators use steel for construction of the secondary containment area and if the steel is routinely in contact with soil, water or concrete, owners and operators shall cathodically protect the containment area in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department.

#### 20.5.4.30 VENTING FOR NEW AST SYSTEMS:

A. Owners and operators shall design and construct venting for all new AST systems, following the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department.

B. Types of vent pipes.

(1) Vent pipes that are provided for normal tank venting shall extend at least 12 feet above ground level.

(2) If attached to a structure, vent pipes shall extend at least 5 feet above the highest projection of the canopy or roof.

(3) Vent pipes for normal tank venting shall be of appropriate size for the capacity and operating conditions of the tank.

(4) Emergency vents shall be of appropriate size for the capacity of the AST and shall be installed on the primary tank and on the interstice of all double-walled tanks.

C. The following may be used to comply with the requirements of this section:

(1) Petroleum Equipment Institute Publication RP200 "Recommended Practices for Installation of Above Ground Storage Systems for Motor Vehicle Fueling;"

(2) National Fire Protection Association 30, "Flammable and Combustible Liquids Code;" or

(3) Underwriters Laboratories 142, "Steel Aboveground Tanks for Flammable and Combustible Liquids."

#### 20.5.4.31 VAULTS:

A. Owners and operators shall provide project drawings for and install new AST systems which include vaults in accordance with the following requirements:

(1) A vault must completely enclose each tank, with no openings in the vault enclosure except those necessary for access to, inspection of, and filling, emptying, and venting of the tank. Each tank shall be enclosed in its own vault, although adjacent vaults may share a common wall. However, for good cause shown, the department, in its sole discretion, may grant a variance from the one-tank-one-vault requirement, for existing tanks only, if owners and operators demonstrate that the variance will provide equivalent protection of health, safety and welfare and the environment.

(2) Every vault shall be liquid tight or sealed with no backfill around the tank. If a vault is constructed of concrete, owners and operators shall ensure it meets the requirements of subsection B of 20.5.4.29 NMAC.

(3) There shall be adequate space between the tank and the vault for inspection of the tanks and its appurtenances.

(4) Above-grade vaults shall be resistant to damage from the impact of a motor vehicle, or suitable collision barriers shall be installed.

(5) A vault shall include connections to permit venting of each vault to dilute, disperse, and remove any vapors prior to personnel entering the vault.

(6) A vault shall be equipped with a detection system capable of detecting liquids, including water, and capable of activating an audible alarm.

(7) A vault shall include a means for recovering liquid from the vault.

(a) If a pump is used to meet this requirement, it shall not be permanently installed in the vault.

(b) Electric-powered portable pumps shall meet the requirements of the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department.

(c) National Fire Protection Association 70, "National Electrical Code," may be used to comply with the requirements of this paragraph.

B. Vault construction. Owners and operators shall design and construct:

(1) the walls and floor of a vault of reinforced concrete at least six inches thick;

(2) the top of an above-grade vault of noncombustible material, and shall design and construct the top:

(a) to be weaker than the walls of the vault, to ensure that the thrust of any explosion occurring inside the vault is directed upward before significantly high pressure can develop within the vault; and

(b) to safely relieve or contain the force of any explosion occurring inside the vault.

(3) the top and floor of the vault and the tank foundation to withstand the anticipated loading, including loading from vehicular traffic, where applicable.

(4) the walls and floor of any vault installed below grade in compliance with good engineering practice to withstand anticipated soil and hydrostatic loading.

C. All tanks, piping and other associated equipment in the interior of a vault shall meet the requirements of the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

(1) National Fire Protection Association 70, "National Electrical Code;" or

(2) Underwriters Laboratories 2245, "Standard for Safety for Below-Grade Vaults for Flammable Liquid Storage Tanks;"

D. Venting of vaults.

(1) Vent pipes that are provided for normal tank venting shall extend at least 12 feet above ground level.

(2) Emergency vents shall be vapor tight and may be permitted to discharge inside the vault.

(3) Owners and operators shall not use long-bolt manhole covers for this purpose.

(4) Owners and operators shall ensure that all vault vents meet the requirements of the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement: National Fire Protection Association 91, "Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids."

E. Vault entry.

(1) A vault shall include a method of personnel entry.

(2) Owners and operators shall post a warning sign indicating procedures for safe entry at each entry point.

(3) Owners and operators shall secure each entry point against unauthorized entry and vandalism.

(4) Owners and operators shall provide each vault with a suitable means for admission of a fire suppression agent.

20.5.4.32 AST DISPENSERS: Owners and operators shall install a containment sump underneath each dispenser associated with an AST, unless the dispenser is located within secondary containment.

A. Owners and operators shall hydrostatically test the sump upon installation, in accordance with manufacturer's recommendations.

B. The following may be used to comply with this containment sump requirement: dispenser liners, under-dispenser containment, dispenser pans, and dispenser sump liners.

20.5.4.33 SPILL AND OVERFILL PREVENTION:

A. Except as provided in Subsection B of this section, to prevent spilling and overfilling associated with transfers of regulated substances to storage tank systems, owners and operators shall use the following spill and overfill prevention methods as of August 15, 2004 for ASTs and as of December 22, 1998 for USTs:

(1) Spill prevention equipment that will prevent release of regulated substances to the environment when the transfer hose is detached from the fill pipe (for example, a spill catchment basin); and

(2) Overfill prevention equipment for USTs that will:

(a) automatically shut off flow into the tank when the tank is no more than 95 percent full; or

(b) alert the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank or triggering a high-level audible alarm.

(3) Overfill prevention equipment for ASTs that will:

(a) automatically shut off flow into the tank when the tank is no more than 95 percent full; or

(b) alert the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank or triggering a high-level audible and visual alarm.

B. Owners and operators are not required to use the spill and overfill prevention equipment specified in Subsection A of this section if approved in writing in advance by the department where:

(1) alternative equipment is used that is determined by the department to be no less protective of public health, safety and welfare and the environment than the equipment specified in Paragraphs (1), (2) or (3) of Subsection A of this section; or

(2) the storage tank system is filled by transfers of no more than 25 gallons at one time;

C. Owners and operators are not required to install and operate spill and overfill prevention equipment required in Paragraph (1) of Subsection A for any AST system where the fill port is located within a secondary containment system meeting the requirements of 20.5.4.27 NMAC and 20.5.4.29 NMAC.

D. Owners and operators shall install any AST for a marina with a system that will allow the level of regulated substance in the AST to be monitored during a delivery of fuel to the AST in addition to spill catchment basins. Unless the AST system is equipped with an audible overfill alarm that will alert the transfer operator at 90 percent of capacity, and overfill protection which will shut off flow of product during a fuel delivery to the tank at 95 percent, owners and operators shall visually monitor the delivery of fuel.

20.5.4.34      LOADING RACKS:

A.      Owners and operators shall design, construct and install loading racks following the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department. The following may be used to comply with this requirement:

- (1)     American Petroleum Institute Standard 2610, "Design, Construction, Operation, Maintenance & Inspection of Terminal and Tank Facilities;" or
- (2)     National Fire Protection Association 30, "Flammable and Combustible Liquids Code."

B.      Owners and operators shall install one of the following containment systems for all loading racks:

- (1)     a drainage system, or secondary containment system meeting the requirements of 20.5.4 NMAC, designed to contain all releases of regulated substances that occur during loading and unloading operations at the loading rack, with a catchment basin capable of containing the largest compartment of a tank car or tanker truck that is loaded or unloaded at the facility; or
- (2)     a drainage system designed to contain all releases of regulated substances that occur during loading and unloading operations at the loading rack and is connected to a treatment facility designed to receive those releases.

C.      Owners and operators shall ensure that loading racks are at least 25 feet from ASTs, buildings, and property lines.

20.5.4.35      DEADLINES FOR CLOSING OR UPGRADING EXISTING AST SYSTEMS:

Not later than July 1, 2011, all owners and operators shall upgrade existing AST systems as follows:

A.      Existing AST systems shall meet all performance standards for new AST systems in 20.5.4 NMAC with the exception that existing AST systems need not submit project drawings; or

B.      Owners and operators shall close any AST system that does not meet performance standards in 20.5.4 NMAC.

C.      Owners and operators shall close any UST being used as an AST.

20.5.4.36      REQUIRED NOTIFICATION PRIOR TO INSTALLATION: To ensure that an inspector has an opportunity to be present during the steps in procedures which are important to the prevention of releases, owners, operators, and certified tank installers shall give the department notice of the dates on which critical junctures in the installation of a storage tank system are to take place. The inspector may require that critical junctures be performed from Monday through Friday during regular business hours.

A.      For installations, the term "critical junctures" means:

- (1)     preparation of the excavation immediately prior to receiving backfill and a UST or piping for an AST or UST;
- (2)     installation of any tank pad, vault, or secondary containment for a storage tank system;
- (3)     setting of a storage tank and piping, including placement of any anchoring devices, backfill to the level of the tank, and strapping, if any;
- (4)     any time during the installation in which components of piping are connected;

(5) all pressure testing or integrity testing of a storage tank system, including associated piping, performed during the installation; and

(6) completion of backfill and filling of the excavation

B. Owners, operators and certified tank installers shall give at least 30 days written notice before the installation of a storage tank system. At a minimum, the installation notice shall contain the following information:

(1) date the form is completed;

(2) facility name, number, address (with county), and telephone number;

(3) owner name, number, and address, and telephone number;

(4) contractor name, address, and telephone number;

(5) tank details (number and size, type and materials, products to be stored;

(6) piping material and type of leak detection;

(7) type of spill and overflow prevention;

(8) type of corrosion protection (sacrificial, impressed current, or none with explanation why corrosion protection not required);

(9) leak detection (statistical inventory reconciliation, automatic tank gauges, visual, vapor monitoring, interstitial monitoring, inventory control with tightness testing;

(10) whether any part of the system is within 1,000 feet of a community water system or a potable drinking water well;

(11) approximate date installation, replacement, modification or repair will take place; and

(12) the signature of the owner or owner's representative filling out the form.

C. In addition to the written notice described in this section, owners, operators and certified tank installers shall give oral notice at least 24 hours in advance of the commencement of the procedure.

D. If owners, operators and certified tank installers are separate persons, only one person is required to comply with the notice requirements of this section; however, all parties are liable in the event of noncompliance.

[The department provides a form that may be used for notification of installation.]

#### 20.5.4.4.37 REQUIRED CERTIFICATIONS:

A. Certification of compliance. All owners and operators of new storage tank systems shall certify in the registration form required by 20.5.2 NMAC compliance with the following requirements:

(1) installation of tanks and piping in 20.5.4.14 NMAC for UST systems, 20.5.4.19 NMAC for AST systems or 20.5.4.38 NMAC for either;

(2) cathodic protection of steel tanks and piping in 20.5.4.10 NMAC and 20.5.4.22 NMAC for UST systems, or 20.5.4.12 NMAC for UST systems, or 20.5.4.16 and 24 NMAC for AST systems;

(3) financial responsibility under 20.5.9 NMAC; and

(4) release detection under 20.5.6 NMAC.

B. Installer certification. All owners and operators of new storage tank systems shall ensure that the installer certifies in the registration form required by 20.5.2 NMAC that the methods used to install the tanks and piping comply with the requirements in 20.5.4.14 NMAC for UST systems and 20.5.4.20 NMAC for AST systems.

C. Certification of installation. For installations after August 15, 2003, owners and operators shall demonstrate compliance with:

(1) the installation standards in 20.5.4.19 NMAC (for ASTs) and 20.5.4.14 NMAC (for USTs). Owners and operators shall provide a certification of installation on the UST or AST registration form required by 20.5.2 NMAC, which asserts that one or more of the following methods of certification, testing, or inspection was used to demonstrate compliance with installation requirements of the AST or UST system:

- (1) the installer has been certified by the tank and piping manufacturers;
  - (2) the installer has been certified or licensed as required in 20.5.14 NMAC;
- except that this provision shall not become effective until August 15, 2004 for ASTs;
- (3) the installation has been inspected and certified by a registered professional engineer with education and experience in UST system or AST system installation (whichever is applicable);
  - (4) the installation has been inspected and approved by the department; or
  - (5) all work listed in the manufacturer's installation checklists has been completed.

#### 20.5.4.38 ALTERNATE METHODS:

A. If owners and operators want to install tanks, piping, storage tank systems, spill and overfill equipment, secondary containment, or any other requirement of this part by another method in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory, owners and operators shall apply in writing to the department, shall provide supporting documentation, and shall not begin the installation unless and until the department approves the request in writing. At a minimum, the request for an alternate method shall contain the following:

- (1) date the form is completed;
- (2) facility name, number, address (with county), and telephone number;
- (3) owner name, number, and address, and telephone number;
- (4) citation to regulation for which alternate method or material (such as type of piping) is requested;
- (5) brief description of the proposed alternate method or material; and
- (6) justification of proposed alternate method or material, including citation to the standard or code supporting its use, and demonstration of its equivalent protection of public health, safety and welfare and the environment.

B. The department shall not grant the request unless owners and operators demonstrate that the request will provide equivalent protection of public health, safety and welfare and the environment.