

**TITLE 20 ENVIRONMENTAL PROTECTION**  
**CHAPTER 5 PETROLEUM STORAGE TANKS**  
**PART 109 NEW AND UPGRADED ABOVE GROUND STORAGE TANK SYSTEMS: DESIGN, CONSTRUCTION, AND INSTALLATION**

**20.5.109.1 ISSUING AGENCY:** New Mexico Environmental Improvement Board.  
[20.5.109.1 NMAC - N, 07/24/2018]

**20.5.109.2 SCOPE:** This part applies to owners and operators of above ground storage tanks as provided in 20.5.101 NMAC. If the owner and operator of an above ground 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.  
[20.5.109.2 NMAC - N, 07/24/2018]

**20.5.109.3 STATUTORY AUTHORITY:** This part is promulgated pursuant to the provisions of the Hazardous Waste Act, Sections 74-4-1 through 74-4-14 NMSA 1978, and the general provisions of the Environmental Improvement Act, Sections 74-1-1 through 74-1-17 NMSA 1978.  
[20.5.109.3 NMAC - N, 07/24/2018]

**20.5.109.4 DURATION:** Permanent.  
[20.5.109.4 NMAC - N, 07/24/2018]

**20.5.109.5 EFFECTIVE DATE:** July 24, 2018, unless a later date is indicated in the bracketed history note at the end of a section.  
[20.5.109.5 NMAC - N, 07/24/2018]

**20.5.109.6 OBJECTIVE:** The purpose of 20.5.109 NMAC is to set forth the requirements for the design, construction, installation and upgrading of above ground 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.  
[20.5.109.6 NMAC - N, 07/24/2018]

**20.5.109.7 DEFINITIONS:** The definitions in 20.5.101 NMAC apply to this part.  
[20.5.109.7 NMAC - N, 07/24/2018]

**20.5.109.8 to 20.5.109.899 [RESERVED]**

**20.5.109.900 INSTALLATION OF AST SYSTEMS:**

**A.** Owners and operators shall properly install all ASTs and piping in accordance with the manufacturer's instructions and 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 20.5.109.920 NMAC. Installations shall address the following:

- (1) support, if required in the sole discretion of the department, by the use of saddles or longitudinal supports;
- (2) a foundation that is of sufficient thickness and reinforcement to support the tank when the tank is filled to maximum capacity with a regulated substance and that is constructed of concrete with a minimum compression strength of 3,000 pounds per square inch at 28 days (or other comparable material approved by the department), and shall be used for:
  - (a) double-walled or double-bottomed above ground storage tanks;
  - (b) horizontal tanks with saddles, which shall be placed at a minimum on footings constructed of concrete or other comparable material approved in advance by the department;
  - (c) horizontal tanks with longitudinal supports, which shall be placed on a concrete slab that extends at least 12 inches beyond the perimeter of the tank and is constructed of concrete or other comparable material approved in advance by the department;
  - (d) vertical tanks, which shall be placed on a concrete slab that extends at least 12 inches beyond the perimeter of the tank and is constructed of concrete or other comparable material approved in advance by the department; and

(e) single-walled above ground storage tanks, which shall be installed inside secondary containment that meets the requirements of 20.5.109.904 NMAC;

- (3) anchorage;
- (4) fills, gauges and vents;
- (5) environmental protection; and
- (6) testing and inspection.

**B.** Tanks and underground piping installed or replaced after July 1, 2013 must be secondarily contained in accordance with 20.5.109.903 NMAC or 20.5.109.904 NMAC, except for any piping that meets the requirements for safe suction in 20.5.111.1108 NMAC.

**C.** Secondary containment must be able to contain regulated substances leaked from the primary containment until they are detected and removed and prevent the release of regulated substances to the environment at any time during the operational life of the AST.

**D.** Owners and operators shall provide an approval from the New Mexico state fire marshal's office to the department for any exceptions to the requirements of the international fire code, including any AST at a retail fueling facility that exceeds the size limit on ASTs;

**E.** 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;
  - (d) a description of any unusual circumstances involving the AST; and
  - (e) any other information requested by the bureau based on the circumstances; and
- (2) install the system in compliance with all requirements for new AST systems in this part.

**F.** Based on the information received in Subsection D of this section, the department may require owners and operators who want to relocate an AST that has been temporarily or permanently closed to have the tank recertified by a certified tank inspector, the tank manufacturer, or a professional engineer prior to use.

**G.** Owners and operators shall use the applicable national code or standard listed below to comply with the requirements for the installation of above ground storage tank systems in this part:

- (1) *American Petroleum Institute Standard 650, "Welded Tanks for Oil Storage"*;
- (2) *American Petroleum Institute Standard 2610, "Design, Construction, Operation, Maintenance, and Inspection of Terminal & Tank Facilities"*;
- (3) *National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code"*;
- (4) *National Fire Protection Association Standard 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages"*;
- (5) *Petroleum Equipment Institute Publication RP200, "Recommended Practices for Installation of Above Ground Storage Tank Systems for Motor Vehicle Fueling"*;
- (6) *Petroleum Equipment Institute Publication RP700, "Recommended Practices for the Design and Maintenance of Fluid Distribution Systems at Vehicle Maintenance Facilities"*;
- (7) *Petroleum Equipment Institute Publication RP800, "Recommended Practices for the Design and Installation of Bulk Storage Plants"*;
- (8) *Petroleum Equipment Institute Publication RP1000, "Recommended Practices for the Installation of Marina Fueling Systems"*;
- (9) *Petroleum Equipment Institute Publication RP1300, "Recommended Practices for the Design, Installation, Service, Repair, and Maintenance of Aviation Fueling Systems"*;
- (10) *Petroleum Equipment Institute Publication RP1400, "Recommended Practices for the Design and Installation of Fueling Systems for Emergency Generators, Stationary Diesel Engines and Oil Burner Systems"*;
- (11) *Steel Tank Institute RP R912, "Installation Instructions for Shop Fabricated Aboveground Storage Tanks for Flammable, Combustible Liquids"*; or
- (12) *International Code Council, "International Fire Code"*.

[20.5.109.900 NMAC - N, 07/24/2018]

**20.5.109.901 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) installation of any tank pad, vault, or secondary containment for a storage tank system;
  - (2) setting of a storage tank and piping, including placement of any anchoring devices, backfill to the level of the tank, and strapping, if any;
  - (3) placing a regulated substance in the tank;
  - (4) any time during the installation in which components of piping are connected;
  - (5) preparation of any excavation immediately prior to receiving backfill for piping or containment sumps;
  - (6) all pressure testing or integrity testing of a storage tank system, including associated piping, spill prevention equipment, and containment sumps performed during the installation;
  - (7) completion of backfill and filling of any excavation;
  - (8) installation and testing of overfill prevention equipment and release detection equipment.
- 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, facility ID number, address (with county), and telephone number;
  - (3) owner name, owner ID number, 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 overfill prevention;
  - (8) type of corrosion protection (sacrificial, impressed current, or none with explanation why corrosion protection not required);
  - (9) method of leak detection (automatic tank gauges, visual, interstitial monitoring);
  - (10) approximate date installation will take place; and
  - (11) the signature of the owner or owner's representative filling out the form.
- C.** Owners, operators and certified tank installers shall provide required project drawings with the 30-day written notice.
- D.** 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. In the oral notice, owners, operators and certified tank installers shall describe any changes to the 30-day written notice required in Subsection B of this section, such as different equipment or installation methods.

**E.** 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. [20.5.109.901 NMAC - N, 07/24/2018]

[The department provides an optional form that may be used for notification of installation. The form is available on the Petroleum Storage Tank Bureau's pages on the department's website or by contacting the Petroleum Storage Tank Bureau at 505-476-4397 or 2905 Rodeo Park Drive East, Building 1, Santa Fe, New Mexico 87505.]

**20.5.109.902 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 in accordance with 20.5.109.901 NMAC, and ensure that any portion of an AST system that routinely contains regulated substances and is in contact with an electrolyte, such as 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. Owners and operators shall use the applicable national code or standard listed below to meet the requirements of this section:

- (1) *National Fire Protection Association Standard 30, “Flammable and Combustible Liquids Code”;*

- (2) *National Fire Protection Association Standard 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages";*
- (3) *National Fire Protection Association Standard 407, "Standard for Aircraft Fuel Servicing";* or
- (4) *International Code Council, "International Fire Code".*

**B.** Owners and operators shall install and operate only ASTs made of steel that are constructed in accordance with one or more of the following, as applicable:

- (1) *Underwriters Laboratories 142, "Steel Aboveground Tanks for Flammable and Combustible Liquids";*
- (2) *Underwriters Laboratories 2085, "Standard for Protected Aboveground Tanks for Flammable and Combustible Liquids";*
- (3) *Underwriters Laboratories 2245, "Standard for Below-Grade Vaults for Flammable Liquid Storage Tanks";*
- (4) *American Petroleum Institute Standard 650, "Welded Tanks for Oil Storage";* or
- (5) *International Code Council, "International Fire Code".*

**C.** Owners and operators shall protect newly installed ASTs from corrosion in accordance with one or more of the following:

- (1) *American Petroleum Institute Publication RP 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems";*
- (2) *National Association of Corrosion Engineers International Standard RP0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems";*
- (3) *Steel Tank Institute R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems";*
- (4) *Steel Tank Institute R893, "Recommended Practice for External Corrosion Protection of Shop Fabricated Aboveground Storage Tank Floors";*
- (5) *American Petroleum Institute Publication RP651, "Cathodic Protection of Aboveground Petroleum Storage Tanks".*

**D.** Above ground tanks located at an elevation so as to produce a gravity head on the dispenser system 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. Owners and operators shall install and adjust the anti-siphon or solenoid valve so that fuel cannot flow by gravity or siphon from the tank to the dispenser system, loading rack, or other equipment, if the piping fails when the dispensing or transferring equipment is not in use. One of the following shall be used to meet the requirements of this Subsection:

- (1) *National Fire Protection Association Standard 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages";* or
- (2) *International Code Council, "International Fire Code".*

[20.5.109.902 NMAC - N, 07/24/2018]

**20.5.109.903 AST SECONDARY CONTAINMENT: DOUBLE WALLED AST SYSTEMS:** Owners and operators shall design, provide project drawings for, and install double walled above ground storage tank systems in accordance with the following:

**A.** Double-walled above ground storage tanks shall be installed in accordance with the applicable installation requirements in this part and shall use one or more of the following, as applicable, 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 Protected Aboveground Tanks for Flammable and Combustible Liquids";* or
- (3) *Underwriters Laboratories 2245, "Standard for Below-Grade Vaults for Flammable Liquid Storage Tanks".*

**B.** Above ground piping shall meet the requirements in 20.5.109.913 NMAC and 20.5.109.915 NMAC;

**C.** Underground piping shall be double-walled and meet the requirements for underground piping in this part. Owners and operators shall use one or more of the following, as applicable, to meet these requirements:

- (1) *Underwriters Laboratories Standard 971, "Standard for Nonmetallic Underground Piping for Flammable Liquids";*
- (2) *Underwriters Laboratories Standard 567, "Standard for Emergency Breakaway Fittings, Swivel Connectors and Pipe-Connection Fittings 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";*
- (4) *ULC Standards CAN/ULC-S633:2017, "Standard for Flexible Connector Piping for Fuels".*

**D.** Containment sumps shall be installed in accordance with the requirements in this part.

**E.** 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. One or more of the following shall be used, as applicable, to comply with these requirements:

- (1) *Petroleum Equipment Institute Publication RP 200, "Recommended Practices for Installation of Above Ground Storage Systems for Motor Vehicle Fueling";*
- (2) *Society of Protective Coatings SSPC-TU2/NACE6G197, "Design, Installation and Maintenance of Coating Systems for Concrete used in Secondary Containment";*
- (3) *American Concrete Institute Publication ACI 350-06, "Code Requirements for Environmental Engineering Concrete Structures";*
- (4) *American Petroleum Institute Standard 650, "Welded Tanks for Oil Storage";* or
- (5) *Steel Tank Institute RP R912, "Installation Instructions for Shop Fabricated Aboveground Storage Tanks for Flammable, Combustible Liquids".*

[20.5.109.903 NMAC - N, 07/24/2018]

**20.5.109.904 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 Paragraph (1) of Subsection A of 20.5.109.915 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 volume 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 except for masonry or cinder block which shall not be used.

(1) If owners and operators use concrete for construction of secondary containment installed on or after July 1, 2011, the concrete containment shall be designed and constructed in accordance with 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. New concrete secondary containment shall comply with Subparagraph (a), (b) or (c) below:

(a) be coated or internally lined with a material which, in conjunction with the concrete, has a demonstrated permeability rate to the regulated substance stored of  $1 \times 10^{-7}$  centimeters per second or less;

(b) be installed in accordance with a set of plans that have been stamped by a professional engineer demonstrating that the secondary containment system is able to contain a release of regulated substances for seven days and properly support the above ground storage tank systems within the secondary containment; or

(c) be installed in accordance with an alternate method for concrete secondary containment design and construction that is approved in advance by the department pursuant to 20.5.109.920 NMAC.

(2) One of the following shall be used to comply with the concrete secondary containment requirements:

- (a) *American Concrete Institute 350-06, "Code Review for Environmental Engineering Concrete Structures"*;
- (b) *American Concrete Institute 350.2R-04, "Concrete Structures for Containment of Hazardous Materials"*;
- (c) *American Concrete Institute 224R-01, "Control of Cracking in Concrete Structures"*;
- (d) *National Association of Corrosion Engineers International RP0892-2007, "Coatings and Linings Over Concrete for Chemical Immersion and Containment Service"*;
- (e) *Society of Protective Coatings TU2/NACE6G197, "Design, Installation and Maintenance of Coating Systems for Concrete Used in Secondary Containment"*;
- (f) *National Association of Corrosion Engineers International Standard Number 6/SSPC-SP 13, "Surface Preparation of Concrete"*;
- (g) *National Association of Corrosion Engineers International RP0281, "Method for Conducting Coating (Paint) Panel Evaluation Testing in Atmospheric Exposures"*; or
- (h) *American Society for Testing and Materials D4258, "Standard Practice for Surface Cleaning Concrete for Coating"*.

(3) Owners and operators of existing AST systems shall have the option of fulfilling the requirements of this subsection by submitting to the department a report stamped by a professional engineer demonstrating that the secondary containment system is able to contain a release of regulated substances for seven days and properly support the above ground storage tank systems within the secondary containment.

**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 according 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, concrete, or another electrolyte, 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.

[20.5.109.904 NMAC - N, 07/24/2018]

**20.5.109.905 USTS USED AS ASTS:** Effective July 1, 2013, the use of USTs as ASTs is prohibited.

[20.5.109.905 NMAC - N, 07/24/2018]

**20.5.109.906 [RESERVED]**

**20.5.109.907 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.** Owners and operators shall use one or more of the following 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 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".*

[20.5.109.907 NMAC - N, 07/24/2018]

**20.5.109.908 PERFORMANCE STANDARDS FOR EXISTING AST SYSTEMS:**

**A.** Owners and operators of existing single walled AST systems (installed on or before July 1, 2001), must have complied with the following requirements:

- (1) New AST performance standards in 20.5.109 NMAC by July 1, 2011;
- (2) Upgrade requirements in Subsections C, D, and E of 20.5.109.908 NMAC by the deferred date of July 1, 2013; or
- (3) Closure requirements in 20.5.115 NMAC by July 1, 2011.
- (4) Any good faith upgrades to an AST system secondary containment made in compliance with this part prior to December 3, 2010 shall be deemed in compliance with this section.

**B.** Owners and operators of existing AST systems that do not comply with the requirements of the International Fire Code shall provide approval from the state fire marshal's office to the department no later than three years after the effective date of these regulations.

**C.** Tank Upgrade Requirements. Owners and operators must have upgraded existing single walled ASTs by installing secondary containment or replaced them with double walled ASTs by July 1, 2013 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. ASTs that have not been upgraded by the effective date of these regulations shall be permanently closed in accordance with 20.5.115 NMAC.

(1) Owners and operators of ASTs must have met secondary containment requirements either by the installation new concrete secondary containment in accordance with 20.5.109.904 NMAC or upgraded the existing concrete secondary containment to meet the general requirements in Subsection A of 20.5.109.904 NMAC along with one of the following:

- (a) submit to the department a report stamped by a professional engineer for the existing concrete secondary containment that demonstrates the secondary containment system is able to contain a release of regulated substance for seven days and properly supports the AST systems within the secondary containment; or
- (b) coat the interior of, or install an internal lining in, the existing concrete secondary containment in accordance with the manufacturer's instructions or 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;

(2) Owners and operators of ASTs must have upgraded the secondary containment by the installation of liners that meet the following:

- (a) requirements for liners as secondary containment in Subsection C of 20.5.109.904 NMAC; and

(b) requirements for installation of AST systems in 20.5.109.900 NMAC; or

(3) Owners and operators of ASTs must have met the secondary containment requirements by the installation of steel secondary containment in accordance with the requirements in Subsection D of 20.5.9.904 NMAC.

**D.** Piping upgrade requirements. Owner and operators of ASTs must have met the requirements of 20.5.109.916 NMAC for secondary containment of piping.

**E.** Owners and operators must have used one or more of the following to comply with the existing secondary containment requirements:

- (1) *American Concrete Institute 350-06, "Code Review for Environmental Engineering Concrete Structures";*

- (2) *American Concrete Institute 350.2R-04, "Concrete Structures for Containment of Hazardous Materials";*
  - (3) *American Concrete Institute 224R-01, "Control of Cracking in Concrete Structures";*
  - (4) *National Association of Corrosion Engineers International RP0892-2007, "Coatings and Linings Over Concrete for Chemical Immersion and Containment Service";*
  - (5) *Society of Protective Coatings TU2/NACE6G197, "Design, Installation and Maintenance of Coating Systems for Concrete Used in Secondary Containment";*
  - (6) *National Association of Corrosion Engineers International Standard Number 6/SSPC-SP 13, "Surface Preparation of Concrete";*
  - (7) *National Association of Corrosion Engineers International RP0281, "Method for Conducting Coating (Paint) Panel Evaluation Testing in Atmospheric Exposures";* or
  - (8) *American Society for Testing and Materials D4258, "Standard Practice for Surface Cleaning Concrete for Coating".*
- [20.5.109.908 NMAC - N, 07/24/2018]

**20.5.109.909 ABOVE GROUND STORAGE TANKS AT MARINAS:**

- A.** Owners and operators of AST 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 system and dock. The automatic break-away devices shall be easily accessible, and their location shall be clearly marked.
- B.** Owners and operators of AST systems at marinas shall electrically isolate dock piping where excessive stray electrical currents are encountered.
- C.** Owners and operators of AST systems at marinas shall protect piping from stress due to tidal action.
- D.** Owners and operators of AST systems at marinas shall install spill catchment basins in addition to a system that will allow the level of regulated substance in the AST to be monitored during a delivery of fuel to the AST. Unless the AST system is equipped with an audible overfill alarm that will alert the transfer operator at ninety percent of capacity, and overfill protection which will shut off flow of product during a fuel delivery to the tank at ninety-five percent, owners and operators shall visually monitor the delivery of fuel.
- E.** Owners and operators shall use one or more of the following to comply with the requirements in this section:

- (1) *Petroleum Equipment Institute Publication RP 1000, "Recommended Practices for the Installation of Marina Fueling Systems";* or
  - (2) *National Fire Protection Association Standard 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages".*
- [20.5.109.909 NMAC - N, 07/24/2018]

**20.5.109.910 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 above ground storage tank systems, owners and operators shall use the following spill and overfill prevention equipment:
  - (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 bucket); and
  - (2) overfill prevention equipment for ASTs that will:
    - (a) automatically shut off flow into the tank when the tank is no more than ninety-five percent full; or
    - (b) alert the transfer operator when the tank is no more than ninety 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 Subsections A and G 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) or (2) of Subsection A of this section; or
  - (2) the above ground storage tank system is filled by transfers of no more than 25 gallons at one time;



C. Flow restrictors shall not be used in vent lines and shall not be used as overfill prevention equipment for ASTs.

D. Spill and overfill prevention equipment must be periodically tested or inspected in accordance with 20.5.110.1005 NMAC.

E. Owners and operators of AST systems that were previously exempt from spill and overfill requirements shall install no later than three years after the effective date of these regulations, spill and overfill prevention equipment required in Paragraphs (1) and (2) of Subsection A of this section for any AST system at retail and fleet refueling facilities where the fill port is located within a secondary containment system.

F. Overfill prevention and spill prevention equipment shall be either listed in accordance with an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory for use with flammable and combustible liquids or approved prior to installation in accordance with Paragraph (1) of Subsection B of this section.

[20.5.109.910 NMAC - N, 07/24/2018]

#### **20.5.109.911 VENTING FOR ABOVE GROUND STORAGE TANK SYSTEMS:**

A. Owners and operators shall design and construct venting for all above ground storage tank 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. Normal atmospheric tank vents shall be located so that the discharge point is outside of buildings and higher than the fill pipe opening. Vent pipes shall be installed not less than 15 feet from power ventilation air intake devices and not less than five feet from a building opening. Vent outlets and devices shall be designed and installed to minimize blockage. Normal vent piping on AST systems installed after the effective date of these regulations shall not be used for any purpose other than venting the tank.

C. 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 five 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.

D. One of the following shall be used to comply with the requirements of this section:

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

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

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

(4) *International Code Council, "International Fire Code".*

[20.5.109.911 NMAC - N, 07/24/2018]

#### **20.5.109.912 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 20.5.109.904 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 Standard 70, "National Electrical Code"* shall 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; and
- (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. One of the following shall be used to comply with this requirement:
- (1) *National Fire Protection Association Standard 70, "National Electrical Code"*; or
- (2) *Underwriters Laboratories 2245, "Standard 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 shall be used to comply with this requirement: *National Fire Protection Association Standard 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.

[20.5.109.912 NMAC - N, 07/24/2018]

**20.5.109.913 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 an electrolyte, such as soil 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 use one or more of the following to comply with the requirements of this section:

- (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 in accordance with 20.5.110.1009 NMAC.

**C.** Owners and operators shall protect all piping from impact, settlement, vibration, expansion, corrosion, and 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. Containment sumps shall be either listed in accordance with an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory for use with flammable and combustible liquids or approved prior to installation by the Department in accordance with the alternate methods requirements in 20.5.109.920 NMAC.

**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. [20.5.109.913 NMAC - N, 07/24/2018]

**20.5.109.914 PERFORMANCE STANDARDS FOR PIPING CONSTRUCTED OF NON-CORRODIBLE MATERIAL:**

**A.** If owners and operators construct or operate piping of fiberglass-reinforced plastic or flexible piping, the piping shall:

- (1) be completely underground;
- (2) be within secondary containment that includes a release detection system that meets the requirements of 20.5.111 NMAC;
- (3) have a suitable cover approved by the piping manufacturer; or
- (4) have equivalent protection approved by the piping manufacturer and approved by the department prior to installation.

**B.** If owners and operators install non-corrodible 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. Owners and operators shall use one or more of the following to comply with this requirement:

- (1) *Underwriters Laboratories Standard 971, "Standard for Nonmetallic Underground Piping for Flammable Liquids"*; or
- (2) *Underwriters Laboratories of Canada Standard S660, "Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids"*.

[20.5.109.914 NMAC - N, 07/24/2018]

**20.5.109.915 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 be either:

- (1) totally above the ground with all surfaces visible; or
- (2) entirely contained in secondary containment that complies with the requirements of

20.5.109.916 NMAC.

- B. Steel piping with an internal diameter greater than two inches shall be welded or flanged together.
- C. Owners and operators shall use one or more of the following 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"*.

[20.5.109.915 NMAC - N, 07/24/2018]

**20.5.109.916 SECONDARY CONTAINMENT FOR AST PIPING:** To install new piping or replace existing piping in an AST system, owners and operators shall only use piping that is:

- A. double-walled in compliance with 20.5.109.903 NMAC;
- B. designed and constructed with secondary containment that meets the requirements of 20.5.109.904 NMAC; or
- C. steel piping that meets the requirements of 20.5.109.915 NMAC.

[20.5.109.916 NMAC - N, 07/24/2018]

**20.5.109.917 SECONDARY CONTAINMENT FOR AST DISPENSERS:** Owners and operators shall install a containment sump underneath each dispenser system 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.

C. Under-dispenser containment sumps shall be either listed in accordance with an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory for use with flammable and combustible liquids or approved prior to installation by the department in accordance with the alternate methods requirements in 20.5.109.920 NMAC.

[20.5.109.917 NMAC - N, 07/24/2018]

**20.5.109.918 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. Owners and operators shall use one or more of the following to comply with the requirements of this section:

(1) *American Petroleum Institute Standard 2610, "Design, Construction, Operation, Maintenance & Inspection of Terminal and Tank Facilities"*;

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

(3) *International Code Council, "International Fire Code"*; or

(4) *Petroleum Equipment Institute RP 800, "Recommended Practices for Installation of Bulk Storage Plants"*.

B. Owners and operators of aviation fuel storage tank systems who install loading racks shall comply with *National Fire Protection Association Standard 407, "Standard for Aircraft Fuel Servicing"*.

C. Owners and operators shall install a containment system that is designed to contain all releases of regulated substances that occur during loading and unloading operations at the loading rack. For all loading racks, owners and operators shall install either:

(1) a drainage system, or secondary containment system meeting the requirements of 20.5.109 NMAC, 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 that is connected to a treatment facility designed to receive releases of regulated substances that occur during loading and unloading operations.

**D.** Owners and operators shall ensure that loading racks are at least 25 feet from ASTs containing class I liquids (such as gasoline), buildings, and property lines. Owners and operators shall ensure that loading racks are at least 15 feet from tanks containing class II or class III liquids.  
[20.5.109.918 NMAC - N, 07/24/2018]

**20.5.109.919 REQUIRED CERTIFICATIONS:**

**A.** Certification of compliance. All owners and operators of new above ground storage tank systems shall certify in the registration form required by 20.5.102 NMAC compliance with the following requirements:

(1) installation of tanks and piping in 20.5.109 NMAC;  
(2) installation of cathodic protection of steel tanks and piping in 20.5.109.902 NMAC and Subsection D of 20.5.109.904 NMAC;

(3) financial responsibility under 20.5.117 NMAC; and  
(4) release detection in 20.5.111 NMAC.

**B.** Installer certification. All owners and operators of new above ground storage tank systems shall ensure that the installer certifies in the registration form required by 20.5.102 NMAC that the methods used to install the tanks and piping comply with the requirements in 20.5.109 NMAC.

**C.** Certification of installation. For installations after August 15, 2003, owners and operators shall demonstrate compliance with the installation standards in 20.5.109.900 NMAC. Owners and operators shall provide a certification of installation on the AST registration form required by 20.5.102 NMAC, which asserts that all of the following methods of certification, testing, and inspection were used to demonstrate compliance with installation requirements of the AST system:

(1) the installer has been certified by the tank and piping manufacturers;  
(2) the installer has been certified or licensed as required in 20.5.105 NMAC;  
(3) the installer has notified, submitted required documentation to, and the installation has been inspected by the department; and

(4) all work listed in the manufacturer's installation checklists has been completed.  
[20.5.109.919 NMAC - N, 07/24/2018]

**20.5.109.920 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 with materials or methods that are not 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, facility ID number, address (with county) and telephone number;  
(3) owner name, owner ID number, 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;  
(6) justification of proposed alternate method or material, including citation to a standard or code supporting its use, if available; and  
(7) 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.

[20.5.109.920 NMAC - N, 07/24/2018]

[The department provides an optional form that may be used to request approval of an alternate method. The form is available on the Petroleum Storage Tank Bureau's pages on the department website or by contacting the Petroleum Storage Tank Bureau at 505-476-4397 or 2905 Rodeo Park Drive East, Building 1, Santa Fe, New Mexico 87505.]

**HISTORY OF 20.5.109 NMAC:**

**Pre-NMAC History:** The material in this part was derived from that previously filed with the commission of public records - state records center and archives.

EIB/USTR-4, Underground Storage Tank Regulations - Part IV - New and Upgraded UST Systems: Design,

Construction, and Installation, filed 9/12/88

EIB/USTR-4, Underground Storage Tank Regulations - Part IV - New and Upgraded UST Systems: Design, Construction, and Installation, filed 8/4/89

EIB/USTR-4, Underground Storage Tank Regulations - Part IV - New and Upgraded UST Systems: Design, Construction, and Installation, filed 6/12/90

**History of Repealed Material:** 20 NMAC 5.4, Underground Storage Tanks, New and Upgraded UST Systems: Design, Construction, and Installation (filed 2/27/97), repealed 8/15/03.

20.5.4 NMAC, Petroleum Storage Tanks, New and Upgraded Tank Systems: Design, Construction and Installation (filed 7/16/03) repealed 4/4/08.

20.5.4 NMAC, Petroleum Storage Tanks, New and Upgraded Tank Systems: Design, Construction and Installation (filed 4/4/08) repealed 07/24/2018.

**Other History:**

EIB/USTR-4, Underground Storage Tank Regulations - Part IV - New and Upgraded UST Systems: Design, Construction, and Installation (filed 6/12/90), renumbered, reformatted and replaced by 20 NMAC 5.4, New and Upgraded UST Systems: Design, Construction, and Installation, effective 11/5/95.

20 NMAC 5.4, Underground Storage Tanks, New and Upgraded UST Systems: Design, Construction, and Installation (filed 10/6/95) replaced by 20 NMAC 5.4, New and Upgraded UST Systems: Design, Construction, and Installation, effective 4/1/97.

20 NMAC 5.4, Underground Storage Tanks, New and Upgraded UST Systems: Design, Construction, and Installation (filed 2/27/97) was renumbered, reformatted and replaced by 20.5.4 NMAC, New and Upgraded Tank Systems: Design, Construction and Installation, effective 8/15/03.

20.5.4 NMAC, Petroleum Storage Tanks, New and Upgraded Tank Systems: Design, Construction and Installation (filed 8/15/03) was replaced by 20.5.109 NMAC, Petroleum Storage Tanks, New and Upgraded Above Ground Storage Tank Systems: Design, Construction and Installation, effective 7/24/18.