

# DER-26 / How to Prepare a Spill Prevention Report

New York State Department of Environmental Conservation

## DEC Program Policy

**Issuing Authority:** Val Washington

**Title:** Deputy Commissioner,  
Office of Remediation and Materials Management

**Date Issued:**

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### I. Summary:

This program policy provides guidance on how to prepare the Spill Prevention Report (SPR) required by 6 NYCRR 598.1(k) of the Chemical Bulk Storage (CBS) regulations promulgated by the New York State Department of Environmental Conservation (DEC).

### II. Policy:

SPRs shall be prepared in accordance with the guidance provided in this document so as to achieve compliance with subdivision 598.1(k) of the CBS regulations.

### III. Purpose and Background:

#### A. Purpose

The purpose of this document is to provide guidance on the preparation of an SPR by owners, operators or their consultants. This guidance is also intended to assist DEC inspectors reviewing the SPR. An SPR is required for every registered CBS facility and must be updated at least annually, whenever a significant release occurs or whenever a substantial modification is made.

#### B. Background

Subdivision 598.1(k) of the CBS regulations outlines what must be in an SPR. The need for this guidance is evidenced by the questions from CBS facility owners, operators and their consultants regarding how to prepare an SPR.

The Application Review Policy for PBS and CBS Registration Applications (DER-12) requires that the SPRs cover page, table of contents, and signature page of the facility SPR be submitted with the registration application. These excerpts from the SPR are needed to demonstrate the owner's knowledge of and compliance with the regulations. Although the SPR has been a requirement of CBS regulations since 1994, the recent requirement to submit portions of the SPR with the registration application has alerted many facility owners of the legal requirement to maintain and update the SPR annually.

## IV. Responsibility:

The DEC's Central and Regional Office CBS staff are responsible for implementing this program policy. The Bureau of Technical Support in the Division of Environmental Remediation (DER) is responsible for maintaining this program policy.

## V. Procedure:

### A. Preparing a Spill Prevention Report (SPR)

The following is general guidance for writing an SPR as required by New York State's CBS regulations. The SPR author should keep in mind the following regulatory language quoted from subdivision 598.1(k) which discusses the complexity of this report:

***“The comprehensiveness of the spill prevention report will be a function of the risks at the facility. At facilities with good operating histories, small quantities of low hazard substances in areas of minimal environmental risk, reports will contain basic information and assessments. Where facilities or risks are larger, the report will assess such risks and will be proportionately more complex.”***

The report must be properly indexed, logically organized, and filed on the premises of the facility at all times. The DEC recommends that the report be organized in an easy to use format. The report must be updated at least annually or whenever a significant release occurs or a substantial modification is made to the facility. The owner or operator must supply a copy of the report to the DEC upon request.

The SPR should identify the measures being taken by the facility to prevent spills. Facility owners need to assess and evaluate best practices for preventing spills at their facility. Particular attention should be given to evaluating the procedures for the transfer and storage of chemicals. These steps should be included in detail within the SPR. Paragraphs 596.6(d)(1) and (2) describe the use of best management practices (BMPs). DEC may require the facility owner to submit a BMP plan for approval and implementations in the event of the following:

- a release that results in significant environmental impacts; or
- a series of releases that indicates the lack of use of engineering practices, which should prevent such repeated releases.

### B. Who Can Prepare an SPR

Subparagraph 598.1(k)(2)(iv) states that the SPR can be prepared by a Professional Engineer (PE) licensed in New York State or by any “other qualified person.” The definition of “qualified,” “qualified engineer,” “qualified technician” or “qualified inspector” is defined in paragraph 596.1(c)(37) as:

***“A person who has knowledge of the physical sciences, technology or the principles of engineering and mathematics acquired by education and/or related practical experience, and is competent to engage in the practice so required. Engineers engaged in the practice of engineering must be licensed or otherwise permitted to practice engineering pursuant to Article 145 of the [New York] State Education Law.”***

While DEC strongly recommends that a licensed PE prepare the SPR, per the above referenced regulations, it is not required. Generally, at smaller facilities (one or two tanks **and** a total storage capacity not to exceed 2000 gallons), the SPR can be prepared by a qualified person meeting the definition given above. DEC recommends that the author be capable of following this guidance document and the details in the CBS regulations to produce a document acceptable to DEC (i.e., the SPR contains all the required information, appendices, and is updated annually). At larger facilities (three or more tanks **or** greater than 2000 gallons total storage capacity) or at any facility which store one or more acutely hazardous substances as listed in Part 597, the DEC recommends that a New York State licensed PE prepare the SPR. The regulations allow for professional judgement regarding qualifications required of the SPR author.

### C. SPR Guidance

The following sections describe the information that should be included in an SPR. Refer to Appendix A for a suggested table of contents for an SPR.

#### **SECTION 1: GENERAL INFORMATION [598.1(k)(2)i, ii, iii and iv]**

The following descriptive information *must* be included at the beginning of the report:

- management approval of the SPR;
- SPR preparer's certification;
- copies of the registration applications and valid certificate; and
- an up-to-date facility map(s) of sufficient detail to locate and identify tanks, transfer stations, and connecting pipes.

The following descriptive information *should* be included at the beginning of the report:

- facility name and address;
- a description of the facility and its overall operations; and
- person responsible for the SPR.

#### **SECTION 2: SUMMARY OF RELEASES WHICH HAVE OCCURRED OVER THE PAST FIVE YEARS [598.1(k)(2)(v)], IDENTIFICATION AND CAUSES OF SPILLS AND RELEASES [598.1(k)(2)(vi), 596.6(b), 595.3]**

Paragraph 595.1(c)(16) defines "spill" as "*any escape of a substance from the containers employed in the normal course of storage, transfer, processing or use.*" "Release" is defined in Paragraph 595.1(c)(12) as "*any unauthorized pumping, pouring, emitting, emptying, overfilling, spilling, leaking, leaching or disposing, directly or indirectly, of a hazardous substance or any other substance which results in the formation of a hazardous substance or any related constituent thereof, or any degradation product of such a substance or a related constituent thereof, may enter the environment.*" Put simply, a spill is material outside of the tank/piping; and a release is a spill that enters the environment (i.e., air, water, land, flora, fauna).

The SPR must list and describe reportable [under 6 NYCRR Paragraph 595.1(c)(13) or federal law] releases that have occurred over the past five years, or any releases the facility owner or operator can determine to have occurred through an examination of existing records. Examination of records

should include review of materials from daily, annual, and five-year inspection reports and materials. For example, if during a daily inspection, product is observed in the secondary containment system that was not present the previous day, this observation should be noted. Determination of the existence of releases could also include mass balance estimates utilizing data on deliveries and chemical usage over time.

**Note:** Any non-reportable spill must be documented and added to the SPR.

Section 597.2 sets forth a comprehensive list of regulated hazardous substances and the thresholds for reportable quantities of released substances. A release of a reportable quantity must be reported to DEC within two hours of the release. The release of a lesser quantity must be reported within two hours if any of the following conditions exist [see paragraph 595.3(a)(2)]:

1. such release results, or may reasonably be expected to result, in a fire with potential off-site impacts;
2. such release causes, or may reasonably be expected to cause, an explosion;
3. such release causes, or may reasonably be expected to cause, a contravention of air quality standards;
4. such release results, or may reasonably be expected to result, in vapors, dust and/or gases that may cause illness or injury to persons, not including persons in a building at a facility where a release originates; or
5. runoff from fire control or dilution waters may cause or contribute to a contravention of water quality standards.

Paragraph 595.3(a)(4) lists specific exceptions to reporting requirements when spills or overfills of reportable quantities are to a secondary containment system and ONLY if:

1. the secondary containment system meets the design, installation, and operation requirements of sections 599.9 and 599.17;
2. there is control over the spill or overfill, and it is completely remediated within 24 hours;  
**and**
3. the total volume of the spill or overfill is recovered or accounted for.

**Note:** Accounting for and recovering released gases is much more difficult than for liquids.

If the entire amount [including gases and vapors] is not completely accounted for within 24 hours of its occurrence, the spill or overfill must be reported. If the secondary containment system does not prevent a reportable quantity of the hazardous substance from reaching the environment, the spill or overfill must be reported at the time the substance reaches the environment, but in no event should it be reported later than 2 hours from the time of the spill or overfill. The New York State Spill Hotline numbers are 1-800-457-7362 or 518-457-7362 (if outside New York State).

As described in subdivision 595.3(b):

***“The owner or operator of a storage facility shall notify DEC of a suspected or probable release of a hazardous substance unless an investigation shows that a release has not occurred or does not need to be reported under subdivision (a) of Part 595.”***

An assessment of the magnitude and impact of spills and releases must be reported including the cause(s), total quantity, flow direction and area(s) affected at the facility. Also, a list of all corrective action(s) and preventive measure(s) taken should be included in the SPR. The SPR must include an actual “accounting,” which means the facility owner should know how much chemical was delivered and how much was used. In the event of a spill or a release, the quantity of lost product can be estimated. Including a detailed assessment of the spill is very important. Each assessment will be unique based on the specific layout of the facility. Issues to consider regrading the spill include:

- Was it near a stream, a storm sewer, a drinking water supply?
- Did the spill seep into the groundwater?
- Was the product a vapor when it was released?
- Was air quality affected?
- Did the product find its way into the biota and nearby plant life?

Corrective actions and preventive measures are a key and essential part of the SPR. Reducing or eliminating spills can be accomplished by writing and implementing a series of best management practices which “escort” the product from delivery, to use, and , if required, to disposal.

### **SECTION 3: STATUS REPORT ON COMPLIANCE & SPILL PREVENTION PREPAREDNESS [598.1(k)(2)(vii)]**

The status report must demonstrate compliance with Parts 596, 598 and 599. This requirement can be satisfied by using the CBS inspection form, which may be obtained from the general DEC website (<http://www.dec.ny.gov/>). This status report must be prepared after self-inspection that is performed at least annually. The inspection form must be filled out completely and accurately for all applicable tanks. The status report should reflect any upgrades made to any pre-1994 UST and any pre-1999 AST to achieve compliance with 6 NYCRR Parts 598-599. Additional information on the status of compliance must be supplied to DEC upon request. The most recently completed inspection form must be included with the SPR.

If the SPR author has questions or is uncertain of what is being described on the inspection form, they should refer to the regulations on the general DEC website at <http://www.dec.ny.gov/>. The SPR author will also find the Regional and Central Office contacts listed at this link. Although full compliance with the CBS regulations should result in effective spill prevention, facility owners may implement additional facility-specific measures to reduce the potential for spills. The SPR should document these measures and procedures.

### **SECTION 4: PERIODIC EQUIPMENT INSPECTION RECORDS [598.1(k)(2)(viii)]**

Reports for each monthly, annual or five-year inspection required by sections 598.6, 598.7 and 598.8 must be kept in or with the SPR, be maintained and made available to DEC upon request.

Records of annual inspections must be kept for five (5) years. Records of five-year inspections or tests must be kept for ten (10) years. Although the regulations do not require that facility owners keep records of daily inspections, DEC recommends such records be kept. These records can be reviewed internally to determine the onset of a problem; i.e., when a spill to secondary containment system may have begun.

Additional information must be supplied to the DEC upon request following an SPR review. All post-inspection corrective actions should be documented and kept in the SPR. If any equipment must be repaired, subdivision 598.9(h) states that ***“all repaired equipment must be inspected for tightness and soundness before it is returned to service.”***

CBS regulations require that an index of records be kept in the SPR. The records required are listed in Parts 596, 598 and 599 [subparagraph 598.1(k)(viii) and section 598.8 discuss record keeping]. Reports for each monthly, annual or five-year test or inspection must be kept with the SPR. Records for daily inspections are not required but are strongly recommended.

All reports must include the following information:

1. facility registration number;
2. identification number for tank, piping or equipment tested or inspected;
3. date of test or inspection;
4. results of tests and inspections, including a report on the condition of piping, tank, and ancillary equipment, expected life of service and need for repair;
5. test and inspection methods used;
6. certification by the engineer or technician that the test or inspection has been performed in a manner consistent with the requirements of Part 598 (refer to Appendix B for suggested certification language);
7. statement of engineer or technician’s qualifications;
8. name of engineer or technician;
9. business address of engineer or technician; and
10. signature of engineer or technician.

#### **SECTION 5: FINANCIAL RESPONSIBILITY [598.1(k)(2)(ix)]**

This section is applicable **only if** the DEC requests proof of financial responsibility.

Section 598.11 outlines what must be in the SPR to document compliance with financial responsibility requirements. In part, it states that DEC may request that the owner or operator provide evidence of financial responsibility for corrective action, operating, maintaining or closing of storage tanks. Financial responsibility can be proven by one or a combination of insurance, guarantee, surety bond, letter of credit, qualification as a self insurer or other evidence acceptable to DEC.

#### **SECTION 6: SPILL RESPONSE PLAN [598.1(k)(2)(x)]**

A spill response plan must be included in the SPR. The plan must be reviewed and updated annually.

The spill response plan should include:

- ◆ spill reporting procedures; New York State Spill Hotline (1-800-457-7362 or 518-457-7362), name and phone number for emergency contacts, coordinators and clean-up contractor(s);
- ◆ material safety data sheets (MSDS) for all CBS regulated chemicals;\*
- ◆ identification and evaluation of potential spill hazards (small, medium, and worst-case discharge scenarios and response actions);\*

- ◆ a listing of health and safety issues and how they are addressed;\*
- ◆ initial response and containment procedures for the chemical stored;\*
- ◆ a prediction of the direction of flow or dispersion of a spill (for example: where the product will travel to, if product is likely to get into a storm sewer and out to a stream, a municipal sewage treatment plant, ground water, surface water, etc.);
- ◆ a map detailing areas potentially impacted by a spill including sewers, drainage ditches, water supplies, wells, streams and populated areas;
- ◆ a list of equipment and materials to contain a spill and where they are stored;
- ◆ the name of a qualified individual having full authority to implement removal actions, and require immediate communication between the person and the appropriate authorities and responders;\*
- ◆ detailed implementation plan for containment and disposal;\*
- ◆ identify and ensure availability of resources to remove, to the extent practicable, a worst-case discharge;\*
- ◆ describe training, testing, unannounced drills, and response actions of persons at the facility;\*
- ◆ plans for annual drills and other information consistent with generally accepted spill prevention control and countermeasures; and
- ◆ security (fences, lighting, alarms, guards, emergency cut-off valves and locks, etc.).\*

**Note:** Additional guidance and examples of Spill Prevention Control and Countermeasure Plans (SPCCs) and Facility Response Plans may be found on the United States Environmental Protection Agency's website at [www.epa.gov/oilspill](http://www.epa.gov/oilspill).

\*Items denoted with an asterisk (\*) are not strictly mandated by regulation.

## **SECTION 7: DISCUSSION AND ASSESSMENT OF EQUIVALENT EQUIPMENT, METHOD, OR PRACTICE [598.1(k)(3)]**

This section is applicable **only if** the facility uses equivalent technology. It should be noted that Part 599 allows for the use of other technologies without DEC approval as long as the technology meets a consensus code, practice or standard developed by a nationally recognized association or independent testing laboratory.

Technology that does not meet a consensus code, practice, or standard developed by a nationally recognized association or independent testing laboratory will require DEC approval prior to use. A request to use equivalent technology must:

1. identify the applicable provision of Part 598; and
2. include documentation, such as data, plans, specifications and test results that demonstrate that the technology, method or practice desired to be used will protect the public health, safety, and welfare and the environment in a manner which equals or exceeds the requirements of the applicable provision of Part 598. This information must be included in the SPR; however, the DEC may request additional documentation.

In reference to secondary containment systems for aboveground tanks, paragraph 598.5(c)(2) states that if an alternative is used it must be inspected by a qualified engineer and be certified to conform with section 599.9.

## **SECTION 8: SITE ASSESSMENT AND FINDINGS [598.1(k)(4)]**

When an owner or operator performs a site assessment as required by DEC under paragraph 598.1(g)(3) or subdivision 598.10(e), the findings must be included in the SPR.

The first requirement [paragraph 598.1(g)(3)] is applicable when an owner or operator fails to be in compliance with the regulations. In this case DEC can direct the owner or operator to conduct a site assessment to determine if there is evidence of a release. This assessment must satisfy the requirements described in subdivision 598.10(e) and be submitted to DEC within a specified time frame.

The second requirement [subdivision 598.10(e)] pertains to site assessments for permanent closure of any underground tank or aboveground tank with ten (10) percent or more of the tank in-ground.

In each case, the site assessment must include soil, vapor, or groundwater monitoring in sufficient extent depth to determine if environmental contamination exists in the vicinity of the tank site. The type of monitoring and number and location of samples must be based on geology, water table contours, aquifer thickness, porosity, background water quality, and the physical properties of the substance known or suspected to have been stored at the facility.

If contaminated soil, vapor, groundwater, or free product is discovered, the owner and operator must report the release in accordance with paragraph 595.3(a)(3) and must follow the corrective action requirements described in section 596.6.

The site assessment must be prepared by a qualified engineer or technician. Records of the date of spill closure and the report must be included in the SPR and maintained for the life of the facility.

Additional guidance can be found in program policy DER-10: Draft Technical Guidance for Site Investigation and Remediation, December 2002 (or a finalized version).

## **SECTION 9: WRITTEN PROCEDURES TO PREVENT THE MIXING OF INCOMPATIBLE SUBSTANCES [598.4(b)(7)]**

Paragraph 596.1(c)(20) defines “incompatible” as *“those substances or materials which if allowed to come in contact, may pose an adverse environmental impact such as releasing a toxic gas or vapor, causing or intensifying a fire, creating an explosion, or causing any other adverse reaction which may threaten human health, safety, welfare or the environment.”*

Paragraph 598.4(b)(7) requires that, by August 11, 1996, “. . . *equipment or practices must be in-place which prevent the mixing of incompatible substances. This must include either mating of couplings to prevent mixing, written site procedures which prevent delivery of a substance to the wrong tank and which prohibit transfer of incompatible substances at the same time within the same transfer station, or equivalent practices.*” All written procedures must be included in the SPR. Written procedures should include step-by-step instructions that incorporate best management practices for receiving chemical deliveries.

Written procedures to conduct hazardous substance transfers are recommended, even if not explicitly required by section 598.4. The operator or a carrier must know and follow all operating requirements provided in paragraphs 598.4.(b)(1) through 598.4.(b)(6). The DEC recommends that facilities have written procedures so that operators and carriers know the appropriate steps to follow during deliveries.

## **SECTION 10: CONSENSUS CODES FOR TANK DESIGN, CONSTRUCTION AND INSTALLATION [599.3(c)(3) and 599.8(b)(2)]**

Consensus codes are codes that have been reviewed, approved and have become industry standards. A listing of pertinent codes at this writing is found in Appendix C. This list is taken from the DEC website at [www.dec.ny.gov](http://www.dec.ny.gov).

Consensus codes are required for:

- ◆ the design, manufacture and installation of tanks and piping; required by subdivisions 598.1(j); 599.6(i); and 599.6(j); paragraphs 599.8(b)(1) and (2); paragraph 599.16(f); and subdivisions 599.11(a) and (b);
- ◆ repairs of fiberglass-reinforced plastic tanks, see subdivision 598.9(c);
- ◆ cathodic protection of tanks and piping; required where corrosion is possible, see subdivision 598.9(e);
- ◆ secondary containment systems:
  - ▶ for old aboveground storage tanks (ASTs) (installed before 02/11/1995), see subdivision 598.5(c);
  - ▶ for new ASTs (installed on or after 02/11/1995), see section 599.9; and
  - ▶ for new on-ground & underground piping (installed on or after 02/11/1995), see section 599.14.

Consensus codes, standards, and practices should be incorporated into the SPR. Though the CBS regulations do not require that the SPR contain a list of consensus codes, DEC strongly recommends this practice. Having the codes listed and available is helpful to facility owners and operators for many reasons and serve as handy reference guides. If a consensus code is not used for tanks or piping, a variance must be requested from DEC by the owner in writing and approved by the DEC prior to tank installation.

## **VI. Related References:**

- ◆ 6 NYCRR Parts 595-599, Chemical Bulk Storage Regulations, August 11, 1994.
- ◆ Spill Prevention Control and Countermeasure Plans, United States Environmental Protection Agency, [www.epa.gov/oilspill](http://www.epa.gov/oilspill)

## **Attachments:**

- Appendix A - **Suggested Table of Contents for Spill Prevention Report (SPR)**
- Appendix B - **Suggested Certification Language**
- Appendix C - **Consensus Standards and Recommended Practices for Bulk Storage of Petroleum and Hazardous Substances in New York State**

## Appendix A

### **Suggested Table of Contents for Spill Prevention Report (SPR)**

Section 1	General Information	Page Number
Section 2	Summary and Causes of Releases, Spills and Leaks	Page Number
Section 3	Compliance Status	Page Number
Section 4	Inspections and Records	Page Number
Section 5	Financial Responsibility (if applicable)	Page Number
Section 6	Spill Response Plan	Page Number
Section 7	Equivalent Equipment, Method, or Practice (if applicable)	Page Number
Section 8	Site Assessment and Finding (if applicable)	Page Number
Section 9	Prevention of Mixing of Incompatible Substances (if applicable)	Page Number
Section 10	Consensus Codes	Page Number

**Appendix B**  
**Suggested Certification Language**

Name of Facility: \_\_\_\_\_ CBS Number: \_\_\_\_\_  
Facility Address: \_\_\_\_\_  
Person Responsible for Spill Prevention Report at this facility:  
Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_  
Work Phone: \_\_\_\_\_

**MANAGEMENT APPROVAL**

This Spill Prevention Report (SPR) has been prepared in accordance with good engineering practices and has the full approval and support of management at a level of authority to commit the necessary resources as may be required to protect public health, safety and the environment.

[Facility Owner's name]'s management acknowledges any compliance deficiencies identified in Section 3 (Compliance Status) of this report and is committed to taking immediate action to correct those deficiencies. The SPR has the full approval and support of the management of this facility and will be implemented as described herein.

Printed Name: \_\_\_\_\_  
Title: \_\_\_\_\_ Date: \_\_\_\_\_

**SPR PREPARER'S CERTIFICATION**

I certify that I have acquired, through education and/or related practical experience, knowledge of the physical sciences, technology and principles of storing and handling hazardous substances as it relates to this facility.

I have examined the facility, and being familiar with the provisions of 6 NYCRR Parts 595, 596, 597, 598, and 599, attest that this Spill Prevention Report has been prepared in accordance with requirements therein.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Printed Name of Qualified Person: \_\_\_\_\_  
Title: \_\_\_\_\_

OR

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name of Registered Professional Engineer:\* \_\_\_\_\_

**Seal**

Date: \_\_\_\_\_ Registration No. \_\_\_\_\_ State \_\_\_\_\_

\*Engineers engaged in the practice of engineering must be licensed or otherwise permitted to practice engineering pursuant to Article 145 of the State Education Law.

## Appendix C

# Consensus Standards and Recommended Practices for Bulk Storage of Petroleum and Hazardous Substances in New York State

Below is a partial listing of consensus standards and recommended practices applicable to the Chemical Bulk Storage (6 NYCRR Parts 595-599) and Petroleum Bulk Storage (6 NYCRR Parts 612-614) programs in New York State. Many of these consensus standards and practices are available for purchase, although a few of the documents (e.g., federal government publications) may be downloaded from the Internet at no cost.

Other comparable consensus codes, standards, or practices developed by a nationally recognized organization or independent testing laboratory, e.g., Underwriters Laboratories (UL); Petroleum Equipment Institute (PEI); Chlorine Institute (CI); Steel Tank Institute (STI); etc., and meet the standards of 6 NYCRR Parts 595-599 are also acceptable.

### 1. Steel Tank/Piping Systems

**"Pressure Vessel Inspection Code: Maintenance Inspection, Rating, Repair, and Alteration" -**

Addresses the maintenance inspection, repair, alteration and re-rating procedures for pressure vessels used in the petroleum and chemical process industries. [API 510](#)

**"Piping Inspection Code: Inspection, Repair, Alteration and Rerating of In-Service Piping Systems" -**

Addresses inspection, repair, alteration, and re-rating procedures for metallic piping systems that have been in service. [API 570](#)

**"Inspection of Pressure Vessels" -** Addresses the inspection of pressure vessels. It includes a description of the various types of pressure vessels and the standards that can be used for their construction and maintenance. [API RP 572](#)

**"Inspection Practices for Piping System Components, June 1998" -** Addresses the inspection practices for piping, tubing, valves (other than control valves), and fitting used in petroleum refineries and chemical plants. [API RP 574](#)

**"Inspection of Atmospheric and Low-Pressure Storage Tanks" -** Addresses the inspection of atmospheric storage tanks that have been designed to operate at pressures from atmospheric through 0.5 psig and inspection of low-pressure storage tanks that have been designed to operate at pressure above 0.5 psig but less than 15 psig. [API RP 575](#)

**"Inspection of Pressure Relieving Devices" -** Addresses the inspection and control of those devices used in the plants to ensure their proper performance. [API RP 576](#)

**"Recommended Rules for Design and Construction of Large, Welded, Low-Pressure Storage Tanks,"** June 1990, American Petroleum Institute Publishers, 1220 L Street, NW, Washington, DC 20005. [API 620](#)

**"Welded Steel Tanks for Oil Storage,"** 9th Edition, 1993, American Petroleum Institute Publishers, 1220 L Street, NW, Washington, DC 20005. [API 650](#)

**"Cathodic Protection of Above-ground Petroleum Storage Tanks,"** 1991, American Petroleum Institute Publishers, 1220 L Street, NW, Washington, DC 20005. [API 651](#)

**"Lining of Aboveground Petroleum Storage Tank Bottoms,"** 1991, American Petroleum Institute Publishers, 1220 L Street, NW, Washington, DC 20005. [API 652](#)

**"Tank Inspection, Repair, Alteration, and Reconstruction"** - Provides guidance in the inspection, repair, alteration and reconstruction of steel storage tanks used in the petroleum and chemical industries. [API 653](#)

**"Installation of Underground Petroleum Storage Systems,"** 1987, with 1989 supplement, American Petroleum Institute Publishers, 1220 L Street, NW, Washington, DC 20005. [API 1615](#)

**"Standard for Shop Fabricated Steel Aboveground Horizontal Tanks for Flammable and Combustible Liquids,"** 1984, Underwriters' Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, Canada M1R3A9. [CAN4-S601-M84](#)

**"Standard for Shop Fabricated Steel Aboveground Vertical Tanks for Flammable and Combustible Liquids,"** 1984, Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, Canada M1R3A9. [CAN4-S630-M84](#)

**"Flammable and Combustible Liquids Code, No. 30,"** 1993, National Fire Protection Association, Batterymarch Park, Quincy, MA 02269. [NFPA No. 30](#)

**"Spill Prevention, Minimum 10-Year Life Extension of Existing Steel Underground Storage Tanks by Lining Without the Addition of Cathodic Protection,"** 1991, National Leak Prevention Association, Route 2, Box 106A, Falmouth, KY 41040. [NLPA 631](#)

**"Steel Structures Painting Manual, Chapter 2 - Surface Preparation Specifications, Commercial Blast Cleaning,"** June 1991, Steel Structures Painting Council, 40 24th Street, Pittsburgh, PA 15222. [SSPC-SP 6](#)

**"Inspection of In-service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids,"** Steel Tank Institute. [STI Standard SP001-00](#)

**"Standard for Steel Underground Tanks for Flammable and Combustible Liquids,"** 1992, Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, Canada M1R3A9. [ULC Standard S603-92](#)

## **2. Corrosion**

**"Cathodic Protection of Underground Petroleum Storage Tanks and Piping System,"** 1987, American Petroleum Institute Publishers, 1220 L Street, NW, Washington, DC 20005. [API 1632](#)

**"Recommended Practice - Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems,"** 2002, National Association of Corrosion Engineers, 1440 South Creek Drive, Houston, Texas 77084-4906. NACE RP0285-2002

**"Recommended Practice - Control of External Corrosion on Underground or Submerged Metallic Piping Systems, RP0169-2002,"** Reaffirmed 2002, National Association of Corrosion Engineers, 1440 South Creek Drive, Houston, Texas 77084-4906.  
NACE Standard RP0169-2002

**"Standard for Galvanic Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids,"** 1992, Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, Canada M1R3A9. ULC-S603.1-M1982

### **3. Federal Government Regulations**

**"Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST),"** Part 280 of Title 40 of the Code of Federal Regulations, July 1, 1993, Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. CFR 280

**"Approval of State Underground Storage Tank Programs,"** Part 281 of Title 40 of the Code of Federal Regulations, July 1, 1993, Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. CFR 281

**"Continuous Releases,"** Section 8, Part 302 of Title 40 of the Code of Federal Regulations, July 1, 1990, Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. CFR 302.8

### **4. Fiberglass/Plastic Tank/Piping Systems**

**"Specification for Filament-Wound Reinforced Thermosetting Resin Pipe,"** 1988, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103. ASTM D2996-88

**"Filament-Wound Glass-Fiber-Reinforced Thermoset Resin Chemical-Resistant Tanks,"** 1988, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103. ASTM D3299-88

**"Contact-Molded Glass-Fiber-Reinforced Thermoset Resin Chemical-Resistant Tanks,"** 1988, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103. ASTM D4097-88

**"Standard Practice for Acoustic Emission Examination of Fiberglass Reinforced Plastics Resin (FRP) Tanks/Vessels,"** American Society For Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103. ASTM E 1067-96

**"Recommended Practice For Acoustic Emission Testing of Fiberglass Reinforced Plastic Resin (RP) Tanks/Vessels,"** Reinforced Plastics of the Composites Institute, Society of the Plastics Industry, Inc. Although this document is not a consensus standard, it is a peer reviewed guidance that serves as a

Recommended Practice. The title of the document does not appear in the listing at the web address provided. However, the website provides a telephone number where a call can be placed to order the document. The Society of the Plastics Industry, Inc.

**"Reinforced Thermoset Plastic Corrosion Resistant Equipment,"** American Society of Mechanical Engineers (ASME) International. RTP-1-1995

**"Guidelines for Inspecting Used FRP Equipment,"** Technical Association of the Pulp and Paper Industry (TAPPI), 1999. While this document is not a consensus standard, it should be viewed as a Recommended Practice. TIP 0402 - 28

**"Glass Fiber Reinforced Plastic Pipe and Fittings for Flammable Liquids,"** 1993, Underwriters' Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, Canada M1R3A9. ULC-C107.7-1993

## 5. Other

**"Non-Refrigerated Liquid Chlorine Storage"** - Addresses design, construction, location, installation and inspection of non-refrigerated liquid chlorine storage system. CI Pamphlet 5

**"Hydrochloric Acid Tank Motor Vehicle Loading/Unloading"** - Provides recommended practices for the safe shipping (loading), handling and/or receiving (unloading) of hydrochloric acid in tank motor vehicles. CI Pamphlet 150