The Need to the Critical Few API Standards under the New SPCC Rules and What they Are

PEMyers

Introduction

The purpose of the new SPCC rule is 2 fold - to prevent oil spills from occurring and to respond to them if they do occur. I believe that few will argue that prevention is far better and less costly than response in general. So the focus of this paper is how the new SPCC invokes existing industry standards as a requirement for implementation at all covered facilities. In particular, we focus on the most important industry standards that are required to prevent spills from occurring in existing facilities. Since SPCC does not specifically identify any required standards the task of figuring out which standards must be taken seriously and implemented is a daunting task because there are at least a hundred tank facility industry standards.

One powerful way to simplify the task of reducing the complexity of industry standards is to narrow the focus to only existing facilities. This reduces the problem by eliminating nearly all of the standards that would normally be applicable for new construction.

So our purpose here is to narrow down the broad field of standards to the "critical few" that should form the core of compliance with the SPCC rule at most facilities. It is the intent to show which tank standards are the "critical few" .

While operations, training, management of change all impact the prevention of spills only the direct impact of equipment integrity and prevention of spills through the use of equipment integrity standards is examined here. Also excluded from consideration here are issues related to spills once they have occurred or those causes that are not standardized including operator error, training, emergency response and security issues.

SPCC Overview (40CFR112)

The Spills Prevention Control and Countermeasures Plan (SPCC) is a requirement of the Oil Pollution Prevention Regulation 40 CFR112 promulgated under authority of the Clean Water Act. It is anticipated that this summer the US EPA will issue amended requirements for SPCC plans.

Nearly all petroleum distribution facilities will be covered by the rule. Some facilities categories that are specifically mentioned in the preamble are "petroleum bulk stations and terminals, crude petroleum and natural gas extraction, electric power generation, and heating oil dealers".

Amendments to SPCC plans will be required for most, if not all, facilities, which currently have SPCC plans. Amended SPCC plans must be amended not later than 13 months after the date of publication of the rule in the Federal Register. For new facilities that will be operation after the rule is published, SPCC plans must be completed prior to the commencement of operations.

PE certified SPCC plans must be kept at the facility, implemented and be available to EPA's Regional Administrator.

EPA states that it is expected to reduce the paperwork burden by approximately 40%. The rule will be effective 30 days after the date of publication in the federal register.

PE Role

A PE is required to certify the SPCC plan or any technical amendments to the plan for it to be considered effective. The PE can be registered in any state and under any discipline. He may or may not be an employee of the facility for which the SPCC plan is required. The PE must certify the SPCC plan in which the certification means:

- The PE is familiar with the requirements of SPCC
- That the PE or his agent has made a site investigation of the facility
- The plan meets the requirements of the regulation
- That the plan is in accordance with "good engineering practice"
- That applicable industry standards have been considered

The PE is the strongest link to use of industry standards in the rule. It requires him to use good engineering practice and to implement industry standards. The PE must be aware of, understand and implement applicable industry standards. A partial list of standards development organizations is provided for in the preamble. A few noteworthy organizations specifically mentioned in the SPCC preamble are the American Petroleum Institute (API), the National Fire Protection Association (NFPA), and the International Codes Committee (ICC).

Industry Standards

While SPCC does not actually refer to any industry standards the preamble makes it clear that their use is mandatory. "Under this rule, a facility is required to at least consider the use of all relevant measures, including the use of industry standards, as a way to implement those measures." In addition to this the SPCC must be certified by a registered professional engineer (PE) who essentially is certifying that he has considered "good engineering practices" as well as appropriate "industry standards".

The question then is "why are not the standards referenced". The EPA has a legitimate reason for not listing the appropriate standards. The key reason is that standards come and go, become obsolete and get replaced by new ones. An example of this applies to inspection of small tanks. A few years ago, the most recognized tank inspection standard in existence was API Standard 653 , “Tank Inspection, Repair, Alteration, and Reconstruction” Last year, however, a new tank inspection standard that applies only to small tanks was introduced by the Steel Tank Institute titled SP001-00, “Standard for Inspection of In-Service Shop Fabricated Aboveground Tanks for Storage of

Combustible and Flammable Liquids". This standard is gaining wide acceptance for inspection of small shop built tanks.

Another reason is that there are actually so many standards that it is difficult ensure that the list is complete and comprehensive. For example, the list shown in **Table 1** is taken from API 2610 "Design, Construction, Operation, Maintenance, and Inspection and Tank & Terminal Facilities". As you might imagine, it is overwhelming to even the experienced tank facility engineer. How can anyone be totally familiar with each and every standard listed and incorporate it into the SPCC? The answer is that all of the standards can be boiled down to the "critical few".

Narrowing the Field of Standards to a Critical Few

So how is the set of standards cut down to something manageable and what are the critical few standards of interest?. Probably the 3 most important starting points for addressing the question are:

1) Guidance documents that EPA publishes on it's web site as well as the SPCC rule preamble refers to many of these standards by name and number.
2) API 2610 "Design, Construction, Operation, Maintenance, and Inspection of Tank and Terminal Facilities
3) API Publication 340 "Liquid Release Prevention and Detection Measures for Aboveground Storage Facilities".

API 2610 was originally developed to head of efforts on the part of congressman to create a national AST act in the late 80s and early 90s. Because it was anticipated to be "the standards for tank facilities" it was written in mandatory language, as an enforceable standard, and was comprehensive. So it is actually a very useful starting point that captures all of the fundamental considerations for any tank facility operator to be aware of.

API 2610 has very little content on any given topic but it is really an index of standards, practices, issues that comprehensively covers all aspects of tank and terminal facilities. However, it's real value is as a checklist. There is little in the document which will actually be useful for implementation as part of the SPCC rule. For that you must go to the actual standards such as API 653, API 570 and API 2350 and implement these.

API 340 is of interest because it is "represents a compilation of the various methods that industry uses to prevent and detect releases". A review of API 340 quickly shows that the primary preventive practices for piping and tank integrity comprise relatively few standards. It also shows what is currently "good engineering practice".

Table 1 shows the list of standards, codes and rules taken from API 2610 which are relevant to petroleum tank facilities**.** It is comprehensive, however, many of the standards shown will not be needed for compliance with SPCC. So how do you prune

the list of standards down to the few key standards? First, if there is no new construction taking place at the facility then all of the new construction standards can be eliminated from the list. For example, API 650, API 620, UL standards, and all of the ASME B31 codes can be pruned out. These all apply to new construction. The same is true for the building codes and steel construction codes and rail codes.

After going through the pruning exercise, there will be a short list. This is shown in **Table 2**.

Implementation of the Critical Few Standards

A first consideration that should occur in attempting to comply with SPCC is the use of the industry standards for tanks (API 653) and for piping (API 570) and overfills (API 2350). Should these standards be used in whole or part?

API Standards are generally considered "minimum requirements". Indeed, API 653 in the forward states "The rules given in this standard are minimum requirements." This stems from the fact that these are consensus documents and they cannot get out of committee to the street unless the rules are virtually the lowest common denominator of the committee opinion. Therefore, in general, it is possible to add supplementary requirements, but the standard should always be taken as a whole.

API 653

Paragraph 112.8(c)(3)[1] requires that tanks integrity be validated periodically on a regular schedule. The most likely and credible way to do this is to implement API 653. This paragraph also includes the usual requirements for documentation and recordkeeping, which would also be satisfied by implementation of API 653.

SPCC rule requirements could also be satisfied by implementation of STI SP001 for shop built tanks or by API 12R1 for producing tanks.

Another specifically mentioned assessment that is required is assessment of brittle fracture mentioned in Paragraph 112.7(I)[2]. It applies only to field erected tanks which would be inspected under API 653. Section 3 of API 653 has a complete treatment of

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[1] Paragraph 112.8(c)(3)"Test each aboveground container for integrity on a regular schedule, and whenever you make material repairs. The frequency of and type of testing must take into account container size and design (such as floating roof, skid-mounted, elevated, or partially buried). You must combine visual inspection with another testing technique such as hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or another system of non-destructive shell testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept und/er usual and customary business practices will suffice for purposes of this paragraph."

[2] SPCC Brittle Fracture Requirement in paragraph 122.7(I)
If a field-constructed aboveground container undergoes a repair, alteration, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, evaluate the container for risk of discharge or failure due to brittle fracture or other catastrophe, and as necessary, take appropriate action.

brittle fracture assessment. An alternative, but much more difficult and costly way to satisfy this requirement would be to use API 579 "Fitness for Service".

API 570

The SPCC rules covers transfer lines and piping in Paragraph 112.8(d). Piping must be regularly inspected. The basic industry standard that satisfies the requirement for piping is API 570 "Piping Inspection Code".

API 2350

The preamble to the rule makes it clear that overfill is a major cause of discharges but the rule has provisions suggesting the use of API 2350 in Paragraph 112.8(c)(8) . Again, reliance on NFPA 30 and API 2350 which are consistent with one another (meaning that if you satisfy one, you satisfy both) is the best policy and practice.

Conclusion

The amended SPCC due out this summer (2002) is generally a favorable improvement to industry in terms of requirements, paperwork reduction, and simplification. However, it also more forcefully requires that the standards we have been talking about here be used and implemented. For companies which already have a tank facility integrity program the transition to compliance with SPCC will be simple and a continuation of past practice. For those who are unfamiliar with "industry standards" much effort and planning will be required to get into compliance. Table 3 is a list of recommendations for the PE as well as the Owner/Operator to consider.

Table 2 - The "Critical Few Industry Standards for Tank and Terminal Facilities"

Category	Standard	Title	What it addresses
Tank Integrity	API 653	"Tank Inspection, Repair, Alteration, and Reconstruction";	Tank integrity, testing, inspection, maintenance, recordkeeping, repairs. API 653 is applicable to both large field erected tanks as well as small tanks or shop built tanks.
Tank Integrity	Steel Tank Institute Standard SP001-00	"Standard for Inspection of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids"	Ditto This standard is applicable to shop built tanks
Tank Integrity	API 12R1	Recommended Practice for Setting, Maintenance, Inspection, Operation, and Repair of Tanks in Production Service	Ditto Used exclusively in upstream
Piping Integrity	API 570	"Piping Inspection Code (Inspection, Repair, Alteration, and Rerating of In-Service Piping Systems)";	Piping integrity, testing, inspection, maintenance, recordkeeping, repairs. Applicable to steel piping systems, but not applicable to cross country pipelines (B31.4 piping)
Overfill Prevention	NFPA 30	Flammable and Combustible Liquids	Fire protection requirements
Overfill Prevention	API 2350	Overfill Protection for Petroleum Tanks in Petroleum Facilities	Overfill prevention Scope is limited to marine or pipeline receipts of Class 1 liquids. Principles should be adapted to all tank transfers and all classes of liquids.

Only 1 standard from the "tank integrity category" need be selected for any given tank. In the Overfill category both NFPA 30 and API 2350 are essentially consistent in principles so satisfying 1 standard also typically satisfies the other.

Table 1 Industry Standards

This list of standards is taken from the 2nd edition of API 2610 "Design, Construction, Operation, Maintenance, and Inspection of Tank and Terminal Facilities

AAR[1]	Mechanical Division Standards	
ABS[2]	Rules for Building and Classing Steel Vessels	
ACI[3]	318	Building Code Requirements for Structural Concrete and Commentary
AISC[4]	ASD	Manual of Steel Construction – Allowable Stress Design
API	Spec 5L	Specification for Line Pipe
	Spec 6FA	Specification for Fire Test for Valves
	Spec 12P	Specification for Fiberglass Reinforced Plastic Tanks
	RP 12R1	Recommended Practice for Setting, Maintenance, Inspection, Operation, and Repair of Tanks in Production Service
	Publ 306	An Engineering Assessment of Volumetric Methods of Leak Detection in Aboveground Storage Tanks
	Publ 307	An Engineering Assessment of Acoustic Methods of Leak Detection in Aboveground Storage Tanks
	Publ 315	Assessment of Tankfield Dike Lining Materials and Methods
	Publ 334	A Guide to Leak Detection for Aboveground Storage Tanks
	Publ 340	Liquid Release Prevention and Detection Measures for Aboveground Storage Facilities
	Publ 341	A Survey of Diked-Area Liner Use at Aboveground Storage Tank Facilities
	Publ 351	Overview of Soil Permeability Test Methods
	RP 500	Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division I and Division 2.
	RP 540	Electrical Installations in Petroleum Processing Plants
	API 570	Piping Inspection Code: Inspection, Repair, Alteration, and Rerating of In-Service Piping Systems
	RP 575	Inspection of Atmospheric & Low Pressure Storage Tanks
	Std 607	Fire Test for Soft-Seated Quarter Turn Valves
	Std 610	Centrifugal Pumps for Petroleum, Heavy Duty Chemical, and Gas Industry Services
	Std 620	Design and Construction of Large, Welded, Low-Pressure Storage Tanks
	Std 650	Welded Steel Tanks for Oil Storage
	RP 651	Cathodic Protection of Aboveground Storage Tanks
	RP 652	Lining of Aboveground Petroleum Storage Tank Bottoms
	Std 653	Tank Inspection, Repair, Alteration, and Reconstruction
	Std 674	Positive Displacement Pumps - Reciprocating
	Std 675	Positive Displacement Pumps - Controlled Volume
	Std 676	Positive Displacement Pumps - Rotary
	RP 1004	Bottom Loading and Vapor Recovery for MC-306 Tank Motor Vehicles
	RP 1110	Pressure Testing of Liquid Petroleum Pipelines
	RP 1124	Ship, Barge, and Terminal Hydrocarbon Vapor Collection Manifolds
	RP 1125	Overfill Control Systems for Tank Barges
	Bull 1529	Aviation Fueling Hose

	Publ 1581	Specifications and Qualification Procedures for Aviation Jet Fuel Filter/Separators
	RP 1604	Closure of Underground Petroleum Storage Tanks
	RP 1615	Installation of Underground Petroleum Storage Systems
	RPI 1621	Bulk Liquid Stock Control at Retail Outlets
	RP 1626	Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations
	RP 1627	Storage and Handling of Gasoline-Methanol/Cosolvent Blends at Distribution Terminals and Service Stations
	Publ 1628	A Guide to the Assessment and Remediation of Underground Petroleum Releases
	Publ 1629	Guide for Assessing and Remediating Petroleum Hydrocarbons in Soil
	RP 1631	Interior Lining of Underground Storage Tanks
	RP 1632	Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems
	RP 1637	Using the API Color Symbol System to Mark Equipment and Vehicles for Product Identification at Service Stations and Distribution Terminals
	Publ 1638	Waste Management Practices for Petroleum Marketing Facilities
	Std 2000	Venting Atmospheric and Low-Pressure Storage Tanks: Nonrefrigerated and Refrigerated
	RP 2003	Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents
	Publ 2009	Safe Welding and Cutting Practices in Refineries, Gasoline Plants, and Petrochemical Plants
	Std 2015	Safe Entry and Cleaning of Petroleum Storage Tanks
	Publ 2021	Fighting Fires in and Around Flammable and Combustible Liquid Atmospheric Petroleum Storage Tanks
	Publ 2026	Safe Access/Egress Involving Floating Roofs of Storage Tanks in Petroleum Service
	Publ 2202	Dismantling and Disposing of Steel from Aboveground Leaded Gasoline Storage Tanks
	RP 2220	Improving Owner and Contractor Safety Performance
	RP 2350	Overfill Protection for Petroleum Tanks in Petroleum Facilities
	STD 2510	Design and Construction of Liquified Petroleum Gas Installations (LPG)
	Publ 2517D	Documentation File for API Publ 2517, Evaporation Loss From External Floating-Roof Tanks
	Publ 2519D	Documentation File for API Publ 2519, Evaporation Loss from Internal Floating-Roof Tanks
	Publ 2557	Vapor Collection and Control Operations for Storage and Transfer Operations in the Petroleum Industry
	Publ 4588	Development of Fugitive Emission Factors and Emission Profiles for Petroleum Marketing Terminals, Volume 1
	Publ 4602	Minimization, Handling, Treatment, and Disposal of Petroleum Products Terminal Waste Waters
	Manual of Petroleum Measurements Standards	
AREMA[5]	Manual for Railway Engineering	
ASM Intl[6]	ASM Metals Handbook, Volume 13, Corrosion	
ASME[7]		
	B16.5	Pipe Flanges and Flanged Fittings
	B16.9	Factory Made Wrought Steel Buttwelding Fittings
	B16.11	Forged Fittings Socket Welding and Threaded

B16.20 Metallic Gaskets for Pipe Flanges, Ring-Joint Spiral Wound and Jacketed
B16.21 Non-metallic Flat Gaskets for Pipe Flanges
B16.28 Wrought-Steel Buttwelding Short-Radius Elbows and Returns
B16.47 Large Diameter Steel Flanges
B31.3 Process Piping
B31.4 Pipeline Transportation Systems for Liquid hydrocarbons and Other Liquids
B31.5 Refrigeration Piping
B73.1M Specifications for Horizontal End Suction Centrifugal Pumps for Chemical Process

ASTM[8]

A193 Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service
A194 Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High-Pressure or High-Temperature Service, or Both
A325 Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength

AWS[9]

D-1.1 Structural Welding Code-Steel

AWWA[10]

B300 Disinfection Standards

C110 American National Standard for Ductile-Iron and Gray-Iron Fittings, 3in. through 48in. (75 mm through 1200 mm), for Water and Other Liquids
C115 American National Standard for Flanged Ductile-Iron Pipe With Threaded Flanges
C150 American National Standard for Thickness Design of Ductile-Iron Pipe
C151 American National Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water
C153 American National Standard for Ductile-Iron Compact Fittings, 3in. through 24in. (76mm through 610 mm) and 54in. through 64in. (1,400mm through 1,600mm), for Water Service

BOCA[11]

BOCA National Building Code
BOCA National Fire Code

CFR[12]

28 CFR 36 Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities
29 CFR 1910 Occupational Safety and Health Standards
29 CFR 1926 Occupational Safety and Health Regulations for Construction
33 CFR 26 Vessel Bridge to Bridge Radio Telephone Regulation
33 CFR 126 Handling of Class 1 (Explosives) or other Dangerous Cargoes Within or Contiguous to Waterfront Facilities
33 CFR 154 Facilities Transferring Oil or Hazardous Material in Bulk
33 CFR 155 Oil or Hazardous Material Pollution Prevention Regulations for Vessels
33 CFR 156 Regulations on Oil and Hazardous Material Transfer Operations
40 CFR 51 EPA Requirements for Preparation, Adoption, and Submittal of implementation plans
40 CFR 52 EPA Regulations on Approval and Promulgation of Implementation Plans
40 CFR 60 EPA Regulations on Standards of Performance for New Stationary Sources
40 CFR 61 EPA Regulations on National Emission Standards for Hazardous Air Pollutants
40 CFR 112 EPA Regulations on Oil Pollution Prevention
40 CFR 122 EPA Administered Permit Programs: The National Pollutant Discharge Elimination System
40 CFR 123 EPA Regulations on State Program Requirements

40 CFR 125	EPA Criteria and Standards for the National Pollutant Discharge Elimination System
40 CFR 262	EPA Standards Applicable to Generators of Hazardous Waste
40 CFR 264	EPA Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	EPA Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities
40 CFR 280	EPA Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks(UST)
40 CFR 311	EPA Worker Protection
40 CFR 403	EPA General Pretreatment Regulations for Existing and New Sources of Pollution
46 CFR 39	Vapor Control Systems
49 CFR 195	Transportation of Hazardous Liquids by Pipeline

ICBO[13]

Uniform Building Code
Uniform Fire Code

ICOS/OCIMF/IAPH[14]

International Safety Guide for Oil Tankers and Terminals

IES[15]

IES Lighting Handbook

MSS[16]

SP-75	Specification for High Test Wrought Butt Welding Fittings
SP-83	Class 3000 Steel Pipe Unions, Socket-Welding and Threaded

NACE International Standards[17]

RP0169	Control of External Corrosion on Underground or Submerged Metallic Piping Systems
RP0193	External Cathodic Protection of On Grade Metallic Storage Tank Bottoms
RP0285	Corrosion Control of Underground Storage Tank Systems by Cathodic Protection
RP0575	Internal Cathodic Protection Systems in Oil-Treating Vessels

NFPA[18]

10	Standard for Portable Fire Extinguishers
11	Standard for Low-Expansion Foam
15	Standard for Water Spray Fixed Systems for Fire Protection
16	Standard for Installation of Foam-Water Sprinkler Systems and Foam Water Spray Systems
20	Standard for Installation of Stationary Fire Pumps for Fire Protection
22	Standard for Water Tanks for Private Fire Protection
24	Installation of Private Fire Service Mains and Their Appurtenances
30	Flammable and Combustible Liquids Code
69	Standard on Explosion Prevention Systems
70	National Electrical Code
77	Recommended Practice on Static Electricity
101	Life Safety ® Code
111	Standard on Stored Electrical Energy Emergency and Standby Power Systems
496	Standard on Purged and Pressurized Enclosures for Electrical Equipment
497	Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas
600	Standard on Industrial Fire Brigades
780	Standard for the Installation of Lightning Protection Systems

OCIMF[19]

Design and Construction Specification for Marine Loading Arms

SBCC[20]

Standard Building Code
Standard Fire Protection Code

SSPC[21]

SP1 Solvent Cleaning
SP2 Hand Tool Cleaning
SP3 Power Tool Cleaning
SP5 White Metal Blast Cleaning
SP6 Commercial Blast Cleaning
SP7 Brush-Off Blast Cleaning
SP10 Near-White Metal Blast Cleaning
Steel Structures Painting Manual, Volume 1, Good Painting Practice
Steel Structures Painting Manual, Volume 2, Systems and Specifications

UL[22]

UL-142 Standard for Safety for Steel Aboveground Tanks for Flammable and Combustible Liquids

[1] Association of American Railroads, 50 F Street, NW, Washington, DC 20001-1564.
[2] American Bureau of Shipping, ABS Plaza, 16855 Northchase Drive, Houston, TX 77060.
[3] American Concrete Institute, PO Box 9094, Farmington Hills, MI 48333.
[4] American Institute of Steel Construction, One East Wacker Drive, Suite 3100, Chicago, IL 60601-2001.
[5] American Railway Engineering and Maintenance of Way Association, 8201 Corporate Drive, Suite 1125, Landover, Maryland 20785-2230
[6] American Society of Metals, 9639 Kinsman Road, Materials Park, Ohio 44073-0002
[7] American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990
[8] American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19423-2959
[9] American Welding Society, 550 NW LeJeune Road, Miami, FL 33126
[10] American Water Works Association, 6666 West Quincy Avenue, Denver, CO 80235
[11] Building Officials Code Administrators, 4051 W. Flossmoor Road, Country Club Hills, IL 60478
[12] Code of Federal Regulations, Government Printing Office, North Capitol & H Streets NW, Washington, DC 20401
[13] International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, CA 90601
[14] International Chamber of Shipping, Carthusian Court, 12 Carthusian Street, London, EC1M 6EZ, England; Oil Companies International Marine Forum, 27 Queen Anne's Gate, London, SW1H9BU, England; International Association of Ports and Harbors, 5th Floor, North Tower New Pier Takeshiba, 1-11-1 Kaigan, Minato-ku, Tokyo, 105-0022, Japan
[15] Illuminating Engineering Society of North America, 120 Wall Street, 17th Floor, New York, NY 10005
[16] Manufacturers Standardization Society of the Valve and Fittings Industry, Inc., 127 Park Street, NE, Vienna, VA, 22180-4602
[17] National Association of Corrosion Engineers International, PO Box 218340, Houston, TX 77218-8340
[18] National Fire Protection Association, 1 Batterymarch Park, PO Box 9101, Quincy, MA 02269-9101
[19] Oil Companies International Marine Forum, , 27 Queen Anne's Gate, London, SW1H9BU, England
[20] Southern Building Code Congress International, Inc., 900 Montclair Road, Birmingham, Al 35213-1206.
[21] The Society for Protective Coatings, 40 24th Street, 6th Floor, Pittsburgh, PA 15222-4656.
[22] Underwriters Laboratories, 333 Pfingsten Road, Northbrook, Illinois 60062.

Table 3 - Recommendations for Those Responsible for Preparing SPCC Plans

- Review API 2610, API 340, API 653, API 570, API 2350, for existing facilities not subject to new construction. There is no need to review the B31 piping codes or the numerous construction codes such as UL, STI or API 650 and API 620 unless new construction is involved. Note that each of the "critical few" standards listed above have many references to other standards within. For example, API 653 refers to API 2015 for tank cleaning. However, it may not be necessary to review this as this is the responsibility of the tank inspection agency who will be involved with the tank cleaning and the confined space entry rules.
- Consult with good inspection agencies who can review the requirements of API 570 and API 653. As mentioned they can brief you on all of the additional and ancillary standards that are required to implement the basic standard such as API 570.
- If the inspection agency has personnel certified in both API 653 and API 570 consider having both of these inspections can be performed at the same time and by the same person saving mobilization costs, review of plant safety rules, etc.
- Prioritize the worst and highest risk tanks first. An example would be single bottom tanks are higher risk with respect to a bottom leak than double bottom tanks. Another example is that underground piping is a higher risk than aboveground piping. The higher the risk the more prevention and inspection is required.
- Remember that inspections for tanks and piping require API certified inspectors, but the review of overfill protection systems do not. Inspection agencies will be very useful to the Owner/Operator in establishing inspection schedules and assisting with prioritization.
- Make sure that any past inspection reports are collected and available and the PE should review these and incorporate in the schedule for setting up the inspection plan. In many cases, no data or reports will be available, thus the prioritization must be based on other factors. These might include age, product, service, presence of water bottoms, proximity to ignition source, important buildings or process units, etc.
- SPCC rule requires saving records for only 3 years. However, it is best practice to retain any tank and piping inspection records until at least the next inspection which can be as long as 20 years.
- Ask yourself the following questions:

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What industry standards are referenced in the SPCC and are they being implemented?

Are all tanks scheduled for both external and internal inspections? Is a plan available to the regional administrator should he or she "drop by"?

How is the integrity of both aboveground and belowground piping being addressed and what industry standards are being used?

Where are past inspection reports for various tanks?

Where are the inspection reports for the piping?

What kind of overfill system is being used?

Can the overfill system be classified per API 2350?

Is the secondary containment area sufficiently large to handle the largest tank container size plus precipitation?