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Global Marketing

Our Family of Brands

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

December 18, 2007

US Department of Transportation
Pipeline and Hazardous Materials Safety Administration
12300 W. Dakota Ave., Suite 110
Lakewood, CO 80228

Mr. Chris Hoidal
Director, Western Region

RE: CPF 5-2007-5040M

Chevron submits the following explanation and supporting documents in answer to the allegations contained within your Notice of Amendment dated November 15, 2007.

Item 1 paragraph 1A alleges that Chevron's O&M Manual does not address the requirements to protect against ignitions arising out of static electricity, lightning, and stray currents during operation and maintenance activities involving aboveground breakout tanks, and does not note in procedures why compliance with API 2003 is not necessary for tank safety.

Item 1 paragraph 2A alleges that Chevron's O&M Manual does not address the requirement that an operator must review and consider the potentially hazardous conditions, safety practices and procedures outlined in API 2026 (Safe Access/Egress Involving Floating Roofs of Storage Tanks in Petroleum Service).

Item 2 alleges that Chevron's O&M Manual does not clearly address how inspection of the physical integrity of in-service atmospheric and low-pressure steel aboveground breakout tanks will be accomplished according to the requirements of Section 4 of API Standard 653.

Chevron submits for your consideration that all of these concerns are adequately addressed in Section 300 of the O&M Manual titled Design, Construction and Abandonment of Tanks. Subsection 301, Tank Specifications, states:

> The design and construction requirements to meet DOT Part 195 requirements are contained in the various Chevron manuals listed below:
>
> (A) Piping Materials
> (B) Pipeline Materials
> (C) Onshore Pipeline Construction Procedure (See Pipeline Manual)
> (D) Tank Manuals
> (E) Fire Protection Manuals
> (F) Pump Manuals
> (G) Chevron Products Company Operations Services Tank Standards

Item 1 paragraph 1A:

Protection of tanks against ignition concerns is thoroughly discussed in both the Tank Manual (revision date July 2000) and the Fire Protection Manual (revision date February 2006). Please refer to Attachments 1 through 3 for excerpts from these manuals. Specifically consider the statement in section 2050 Tanks, page 2000-18 of the Fire Protection Manual that states:

> Fire protection design considerations such as tank selection, location, spacing, drainage and impounding, fire protection systems, and static electricity and lightning protection, are included in almost all aspects of tank design, and are discussed in detail in the Tank Manual.

Further, consider section 811 Typical Causes of Fire, page 800-2 of the Tank Manual that states:

> Knowing the cause of past tank fires helps us prevent future fires. Some common causes of tank fires and methods to prevent them are given below:
>
> **Lightning Ignition**
> See Section 430 for a discussion of tank grounding.
>
> **Seals on Open-top Floating Roof Tanks.** Prevent these fires by properly designing and maintaining shunts for primary and secondary seals, and insulated pantograph hander sections where applicable. (See Section 420.)
>
> **Internal Floating Roof Tanks.** Ignition has occurred at vent openings due to flammable vapors in the vapor space. The flammable vapor space can be caused by:
>
> - A sunken roof
> - Filling the tank after the roof has been set on its legs
> - Volatile liquids entering the tank due to process upset
> - A separated roof seal
>
> Use of a buoyant roof, routine monitoring of the vapor space, and procedural control during lightning storms will prevent such fires (see Section 420). Internal floating roofs are not vulnerable to lightning ignitions at the seals, and shunts are not required.

And also consider the 4th bullet item of Section 431 Floating Roof of the Tank Manual, page 400-31 that states:

> - Floating roof tanks bonding requirements. Open-top floating roofs normally are adequately bonded against static build-up through rolling ladders, metallic weather shields, lighting shunts or by metal pantograph/shoe design. Some internal floating roof tanks could have metal roofs or metallic sections insulated from the shell. These should have all metal parts electrically bonded to the fixed roof by flexible cables.

Chevron believes that these statements meet the intent of API 2003 as related to the ignition issue.

Item 1 paragraph 2A:

Consideration of potentially hazardous conditions, safety practices and procedures associated with safe access/egress involving floating roofs is also specifically discussed in Safe Work Practice 534 Tank

Cleaning, Repairing, and Dismantling. Excerpts of SWP 534 are included as Attachment 4. Specifically consider the following statements from SWP-534:

Overview of Practice 534	Environmental, Safety, and Health Work Practice 534: Tank Cleaning, Repairing, and Dismantling describes the precautions necessary to safely clean, repair, and/or dismantle atmospheric storage tanks. This Practice references several Environmental, Safety, and Health Practices that must be followed while performing work on tanks. Good judgment must be used when discrepancies occur between this Practice and other ESH work practices.
Purpose of Practice 534	Environmental, Safety, and Health Work Practice 534: **Tank Cleaning, Repairing, and Dismantling** describes the precautions and steps necessary to safely clean, repair, and/or dismantle atmospheric storage tanks. Its purpose is to ensure that Company personnel understand how to perform these tasks effectively and safely.
Two types of entry permits	Two types of entry permits are used in terminals: • A Special Entry Permit is used for entry into confined spaces that have limited egress and the potential to contain hazardous atmospheres. • A General Entry Permit is issued for entry into an enclosed space that has no potential to contain a hazardous atmosphere.
Typical uses of entry permits	Typically, a tank undergoing cleaning and maintenance is permitted as a Special Entry during initial entry for cleaning and roof stabilization. Then it is permitted as a General Entry after being degassed, or gas freed, and cleaned. You do not need an entry permit after the door sheet is removed. Due to limited available egress, you need a General Entry Permit to enter onto a floating roof.

While these statements are not an exhaustive list of all of the safety considerations provided within the Safe Work Practice, it clearly demonstrates the existence of and depth of discussions imbedded in our procedures on this subject.

Item 2:

Responsibility and Compliance with the requirements called for in Section 4 of API-653 is clearly stated in Section 1013 Responsibility and Compliance of the Tank Manual. This section is included for your review as Attachment 5. The Willbridge Terminal has completed internal and external inspections of all of its tanks currently in service, and none of the tanks are past due for their next inspections as mandated by the API-653 inspection intervals.

In closing, Chevron believes that our existing O&M Manual adequately addresses the allegations brought forth in this Notice of Amendment. We believe that our response satisfies your concerns in this matter.

Please notify me if you have any questions in need of clarification or if you have any further requirements for us.

Sincerely,

Gerald Henderson
Terminal Manager

cc: Gene Ketcham, TESH

Attachments:

1 – Fire Protection Manual, page 2000-18
2 – Tank Manual, page 800-2 through 800-5
3 – Tank Manual, page 400-30 through 400-32
4 – Safe Work Practice 534, Tank Cleaning and Dismantling, pages 534-1, 534-2, 534-4, and 534-9
5 – Tank Manual, page 1000-6

Attachment 1

Fuel Supply

The fuel supply to the IC engine shall have valves installed to allow the fuel supply to be safely isolated in the event of a fire involving the IC engine. Fuel supply day tanks shall be located outside the enclosure housing the IC engine or shall be located a minimum of 25 feet (8 meters) away from the IC engine with a manually operated shutoff valve at the tank discharge.

Ventilation

Where it is not practical or economical to modify a permanently installed IC engine as outlined in Section 2043, an acceptable alternate is to provide adequate ventilation to prevent accumulation of hydrocarbon vapor in concentrations above 25% of the lower flammable limit. The engine may be enclosed in a pressurized area to exclude vapor or ventilated with an air sweep that will ensure vapor concentration will never reach the flammable range. Automatic shutdown shall be provided in the event of a ventilation system failure.

Extinguishing Systems

Fixed fire control systems such as fire water monitors or water sprays over critical or high-risk equipment, water mist or carbon dioxide flooding of enclosures should also be considered. Except for combustion gas turbine enclosures, situations warranting such protection are not common. Therefore, the advice of a Fire Protection Engineer should be sought when considering these systems.

Detection System

Fire and combustible gas detectors should be employed to sound alarms or shut down operating equipment, shut off fuel supply, activate motor-operated valves to close all intake and discharge lines, relieve pressure to a vent stack, or activate fixed extinguishing systems. These detection systems are recommended for all critical unattended or not-regularly-attended facilities.

For enclosed IC engine facilities the detection system should alarm and activate any emergency ventilation systems to keep air in the facility below 20% of the lower flammable limit. If the combustible levels continued to rise up to 60% of LFL, the detection system should activate further protections (e.g., shutting down the ventilation and shutting down the engine). Another consideration should be the location of ventilation exhausts with respect to outside ignition sources.

2050 Tanks

Fire protection design considerations such as tank selection, location, spacing, drainage and impounding, fire protection systems, and static electricity and lightning protection, are included in almost all aspects of tank design, and are discussed in detail in the *Tank Manual*.

Section 160 of the *Tank Manual* contains a comprehensive list and short abstracts of the commonly used industry codes and standards related to tank design.

Attachment 2

810 General Considerations

Tank fires occur at a rate of around 3 x 10^{-3} fires per tank year (or three fires per year for every thousand tanks). Compared to other types of equipment in the oil and chemical industries, this is a relatively low frequency. On the other hand, tank fires, when they occur, can be very spectacular, attract plenty of unwanted attention, and can be very costly. Therefore, a well-thought out balance of prevention, suppression and acceptable level of risk is the recommended approach to fire protection on tanks.

Overall, the design concepts for protecting tankage from fires are based on the following objectives:

1. Minimize the occurrence of tank fires.
2. Avoid conditions that can result in major spills, major vapor releases, froth-overs, or boilovers.
3. Contain spills, leaks, or overfills to minimize their effect on other tanks and associated equipment.
4. Control fires at the tank and limit their spread to other tanks or facilities.

811 Typical Causes of Fire

Knowing the cause of past tank fires helps us prevent future fires. Some common causes of tank fires and methods to prevent them are given below:

Lightning Ignition

See Section 430 for a discussion of tank grounding.

Seals on Open-top Floating Roof Tanks. Prevent these fires by properly designing and maintaining shunts for primary and secondary seals, and insulated pantograph hanger sections where applicable. (See Section 420.)

Internal Floating Roof Tanks. Ignition has occurred at vent openings due to flammable vapors in the vapor space. The flammable vapor space can be caused by:

- A sunken roof
- Filling the tank after the roof has been set on its legs
- Volatile liquids entering the tank due to process upset
- A separated roof seal

Use of a buoyant roof, routine monitoring of the vapor space, and procedural control during lightning storms will prevent such fires (see Section 420). Internal floating roofs are not vulnerable to lightning ignitions at the seals, and shunts are not required.

Cone Roof Tanks. On tanks with flammable vapor space, ignition has occurred when there have been openings through the roof. To prevent these incidents, use pressure/vacuum valves on the tank vents (see Section 743), assure the gaging and sampling hatches have been closed, and use proper maintenance to ensure that no corrosion openings exist in the tank's vapor space. It is recommended to use floating roof or internal floating roof tanks for flammable liquids and for liquids stored at or above their flash point (with the exception of hot asphalt tanks).

Overfill of Tanks Storing Flammable Liquid

Overfilling can cause vapors to reach ignition sources outside the diked area (see Exterior Ignition Sources below). Overfills are prevented by sound operating procedures and controls. Engineering can assist by providing necessary gaging equipment, level alarms and shutdown equipment to carry out these procedures. This equipment should be designed and installed so that it is easy for the operator to test and maintain it. (See Section 900.)

Ignition While Performing Hot Work

Prevent these fires by detailed preplanning to identify and avoid potential risks when removing tanks from service and during maintenance work. Engineering can reduce risks during these operations by: (1) providing liquid-tight pontoon compartments (See Section 420) and (2) designing internal piping and structural members with positive drainage to minimize risk of flammable liquids being trapped (See Section 700.)

Hot Asphalt Tank Fires

These fires are caused mostly by cracking and rapid oxidation at excessively high temperatures. They primarily are prevented by operational control keeping storage temperatures below 400°F. Suitable temperature indicators and alarms must be provided. An alternate approach is to use inert blanketing for hot tanks.

Large Vapor Releases

These releases result from stocks with excessively high vapor pressure (over 14.7 psia true vapor pressure) entering atmospheric tankage. External sources have provided the source of ignition (see External Ignition Sources below). Suitable instrumentation on process equipment and in gasoline blending systems will minimize the release potential. Large vapor releases also have occurred from slop tanks where naphtha-type slops have been introduced into heated slop tanks. Segregated piping and tankage should be provided to avoid mixing light and heated heavy slops.

Tank Froth-overs

Froth-overs occur when water enters hot tanks (over 212°F) or when hot streams enter tanks with water bottoms. The resulting massive froth releases have travelled significant distances to reach exterior ignition sources (see below).

Tank froth-overs can be minimized by (1) designing process limit cooling water systems to operate at a lower pressure than the hot process streams. This method prevents water from leaking through the cooler bundles into hot rundown streams; (2) providing proper instrumentation on rundown lines to tankage operating below 212°F, preventing these rundown streams from exceeding that temperature (usually 200°F is the tank temperature limit, see Section 1230); and (3) by designing facilities to make it easy to regularly remove any water which accumulates in the bottom of the tank.

Pyrophoric Ignitions

These spontaneous ignitions occur when iron sulfide deposits oxidize in the presence of a flammable mixture in the vapor space of tanks. Such iron sulfide deposits can form on metal in the vapor space where the hydrogen sulfide content is high and there is no oxygen. Upon introduction of air, such deposits oxidize and create an ignition source.

During normal operation of sour stock tanks, the risk can be minimized by using floating roof tanks or by inert blanketing of fixed roof tanks. When removing sour tanks from service, use careful procedural control until the tanks are gas free and all built up deposits removed. Tank design should provide a means to evacuate gas and sweeten the tank.

Static Electricity Ignitions

Such ignitions usually occur during initial filling, mixing, sampling, and gaging in fixed roof tanks. Refined stocks with conductivities lower than 50 picoSiemens/meter (pS/M), and which can have flammable mixtures near the liquid surface are particularly vulnerable. The use of floating roof tanks in these services, with roofs properly bonded to the shell (see Standard Drawing GB-D1082 for bonding details) basically eliminates these potentials except during the initial fill period until the roof is floating.

Higher flash stock tanks, where hydrogen or light hydrocarbon vapors can enter with rundown streams due to process upsets, are also vulnerable. Some preventive steps which can be taken are:

Floating Roof Tanks:

- Fill the tanks with water until the roof is floating before you introduce the product, or
- Until roof is floating during initial fill, reduce fill rate to less than 3 ft/sec through inlet diffuser.
- Make the vapor space beneath the roof inert before filling.

Fixed Roof Tanks (handling refined stocks which can have flammable mixtures near the liquid surface):

- During initial fill, reduce the fill rate to less than 3 ft/sec through inlet diffuser until diffuser is covered by 6" of product.
- Provide gaging and sampling wells or
- Provide blanketing in the vapor space (could be inert, N_2 flue gas, or natural or refinery gas).

Contaminated High Flash Stock Tanks:

- Closely control process operations, particularly stripping, to minimize carry-over of hydrogen or light hydrocarbon into tanks.
- Regularly sample rundown streams and test for product contamination.
- Periodically test vapor space of these rundown tanks to determine if flammability exists.
- Provide gaging and sampling wells in these fixed roof tanks.

Exterior Ignition Sources

Sources such as motor vehicles, energized electrical equipment, hot surfaces from pump bearing failure, and open flames can start fires. These ignitions usually occur with high vapor releases caused by overfilling or high-vapor-pressure stocks entering tanks. A similar problem exists when froth-overs occur.

Within the immediate vicinity of the tanks and their associated impounding and drainage areas, control is accomplished through proper electrical area classification and work permit procedures. It is impractical to protect against ignition for the major release situations. They are avoided through process controls, safe operating procedures, and training.

Equipment with a higher fire risk, especially pumps, should be located outside of tank impounds.

812 Design Considerations for Firefighting

The design must provide for containment of the tank contents and for the safety and effectiveness of firefighters during a tank fire. The basic fire protection design concepts for tankage areas require the movement of personnel, foam generating equipment, and portable hoses and equipment to the fire area. It is important to consult with the local fire fighting agency on available equipment and fire fighting techniques during the design phase. See Section 830 for a discussion of tank fire fighting.

Accessibility

Accessibility is the key factor, both in the movement of the mobile equipment to the fire site and the effective, safe use there. Some of the primary overall considerations in this regard are:

Roads. Two or more road accesses from different directions should be available to each tank field area. A road should be provided on at least one side of all low flash stock tanks. The roads must be wide enough or have sufficient turnouts to allow efficient maneuvering of firefighting vehicles.

Mains, hydrants. Fire water mains and hydrants should be located along these roadways, with hydrants positioned on the roadside of any dikes, pipeways, drainage ditches, or other obstructions. As appropriate, walkways or accessways

Attachment 3

Walkways are rarely used on domes as there is really no reason to access the top of the dome. The center vent at the top does not need maintenance in most cases. However, when many tanks are located near one another, walkways have been used to provide access as shown in Figure 400-17.

Fig. 400-17 Aluminum Dome Roof Walkways ***Courtesy of Conservatek***

430 Fire Protection Requirements for Roofs

Inherently, many of the features of tank design and construction are related to minimizing fire losses. The welding and tank foundation requirements are designed to provide basic integrity to the tank. The steel materials of tank construction as well as the valve connections provide for high resistance under fire exposure. The spacing and layout requirements as well as drainage and impounding provisions are tied directly to fire containment and control. All such items cannot be included, but several key considerations are listed for emphasis. Reference should be made to the appropriate sections elsewhere in the *Tank Manual* for details relative to their design and installation.

431 Floating Roof

- Primary and secondary seal designs for open-top floating roof tanks, including materials of construction and provision for lightning shunts (see Standard Drawing GB-D1082). Effective sealing contains flammable vapors to the immediate seal area during normal operation. The very important shunts minimize the chance of ignitions at the seal, both from direct and induced lightning.

- Approved-type floating roofs for both open-top and internal floating roof tanks. The floating roof must stay buoyant during normal operation and during fires. Pan-type roofs are not acceptable because they sink.
- Vapor-tight pontoon compartments including full welding of pontoon bulkheads and gasketed manway covers. We do not want hydrocarbon liquids or vapors entering pontoons and creating flammable mixtures. These mixtures can ignite during hot work and cause complications during rim space fires.
- Floating roof tanks bonding requirements. Open-top floating roofs normally are adequately bonded against static build-up through rolling ladders, metallic weather shields, lightning shunts or by metal pantograph/shoe design. Some internal floating roof tanks could have metal roofs or metallic sections insulated from the shell. These should have all metal parts electrically bonded to the fixed roof by flexible cables.
- Drains shall be installed on open-top floating roofs to prevent rainwater accumulation and roof sinking. Suitable swing joint pipes or flexible pipe types are less likely than hose to fail with subsequent oil release (see Section 700). Double deck roofs should have emergency open-type roof drains, provided that it is all right for the stock to mix with water.

432 Internal Floating Roof

- Ventilation requirements for internal floating roof tanks (see Section 422). Adequate ventilation of the space above the floating roof is needed to:
  - Avoid accumulation of flammable vapors that leak past the seal during normal operation.
  - Dissipate vapors displaced from beneath the roof during initial filling. (These vapors can be minimized or eliminated by filling with water up to where the roof floats.)
- Overflow openings or slots for internal floating roof tanks (see Section 422). These are provided for in API 650 Appendix H to avoid damage to the floating roof in case the allowable fill height is exceeded.

433 Cone Roof

- Need for pressure/vacuum (p/v) valves in cone roof tanks where flammable vapors could exist (see Section 740). Such valves prevent flashback into tanks through otherwise open vents and reduce evaporation losses and vapor space corrosion. Commercial flame arrestors are not needed when p/v valves are properly sized and installed.
- Weak roof-to-shell seams (frangible joints) and/or emergency venting for cone roof tanks. In case of fire exposure, weak roof-to-shell seams allow the tank to vent at the tank top rather than to over-pressurize and rupture at the shell-to-bottom seam where a leak would release the tank contents.

440 Roof Construction

This section discusses the construction of fixed and floating roofs and roof drains.

441 Fixed Roof

A fixed roof is constructed after the bottom and shell are erected. Lap welded roof deck plate should be laid in reverse shingle orientation (as shown in Figure 400-7) to prevent capture of condensate in the stockside overlapped seam. The fixed roof should be built with a frangible joint (roof-deck-plate-to-top-angle weld) as described in Section 420. Excess weld material should be removed by grinding. This joint is critical to protect the shell and bottom-to-shell seam during internal overpressure.

442 Floating Roof

Some tank builders prefabricate sections of the pontoon for assembly inside the tank while others merely cut plates and assemble the roof in place. Erection of the floating roof usually begins after completion of the first shell course. An even annular space all around the roof is of primary importance. The roof is usually assembled on low temporary supports (see Figure 400-18). The roof is then raised by air or is floated on water to the high leg position where the leg assemblies are installed. Once the roof leg assemblies have been installed and entry to the tank under the roof is possible, the roof leg or guide assembly should be welded to the reinforcing pad or roof deck plate from the underside of the roof. See Figure 400-19.

Fig. 400-18 Temporary Supports—New Floating Roof

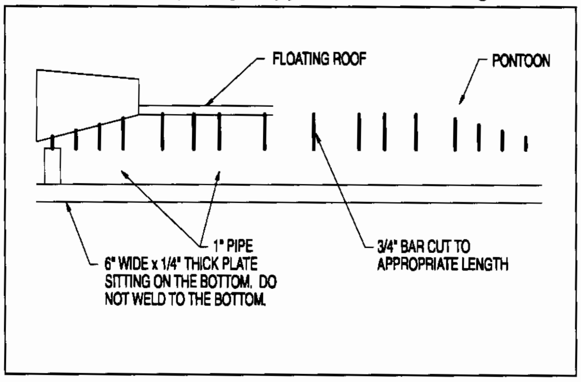
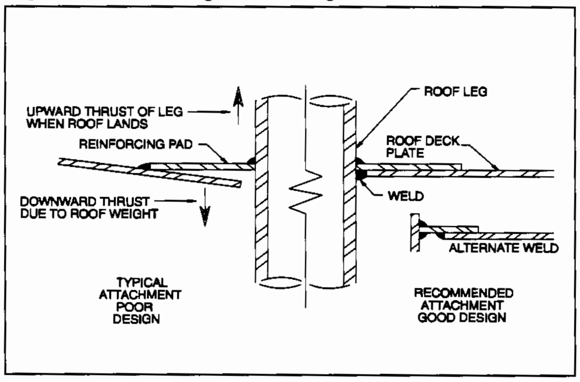


Fig. 400-19 Welding of Roof Leg to Roof Deck Plate



All floating roof pontoon compartment bulkheads should be welded so as to make the pontoon vapor tight. This requires that each inspection hatch cover be equipped with a gooseneck vent.

Attachment 4

ABSTRACT

Overview of Practice 534

Environmental, Safety, and Health Work Practice 534: **Tank Cleaning, Repairing, and Dismantling** describes the precautions necessary to safely clean, repair, and/or dismantle atmospheric storage tanks. This Practice references several Environmental, Safety, and Health Practices that must be followed while performing work on tanks. Good judgment must be used when discrepancies occur between this Practice and other ESH work practices.

Regulatory requirements prevail

This ESH work practice incorporates state and Federal requirements. If any provision in this or other referenced ESH work practice conflicts with any regulatory requirement, the regulation shall apply.

Contents

This Practice covers the following information:

- References for information about working in and around tanks
- Relevant terms and definitions
- Hazards associated with cleaning, repairing, and dismantling tanks
- Job planning, including permits, preparation, and tank emptying
- Tank isolation and static discharge
- Tank isolation and roof stabilization
- Tank cleaning
- Tank maintenance
- Returning a tank to service

SECTION 1 – PURPOSE

Purpose of Practice 534

Environmental, Safety, and Health Work Practice 534: **Tank Cleaning, Repairing, and Dismantling** describes the precautions and steps necessary to safely clean, repair, and/or dismantle atmospheric storage tanks. Its purpose is to ensure that Company personnel understand how to perform these tasks effectively and safely.

SECTION 2 – REFERENCES

References

For additional and detailed information about working in and around tanks, refer to the following documents:

Document Number	Title
API 2015	Safe Entry and Cleaning of Petroleum Storage Tanks
API 2207	Preparing Tank Bottoms for Hot Work
API 2217	Guidelines for Confined Space Entry in the Petroleum Industry
29 CFR 1910.146, and appendices	Permit Required Confined Spaces
TES-TK-101	Braces of Floating Roofs in Pre-cleaned Tanks
TES-TK-102	Entry Requirements under Floating Roofs after Tanks have been Gas-Freed or Cleaned
SCAQMD Rule 1149	Storage Tank Cleaning and Degassing
BAAQMD Standard 8-5-328	Tank Cleaning Requirements
ESH-506	Release of Equipment to Maintenance
ESH-507	General Work Permit
ESH-508	Hot Work
ESH-509	Lockout/Tagout
ESH-511	Personal Protective Equipment
ESH-512	Gas Testing
ESH-513	Enclosed and Confined Space Entry
ESH-517	Respiratory Protection

SECTION 4 – HAZARDS OF CLEANING, REPAIRING, AND DISMANTLING TANKS

Introduction

Tanks that have been in hydrocarbon service — including tanks removed from service and cleaned — pose risks to workers. These risks include:

- Fire and explosion
- Toxic vapors (hydrocarbons, benzene, MTBE, organic lead)
- Oxygen deficiency or enrichment
- Physical hazards
- Dust and fumes

This section details these risks.

Fire and explosion

The following create fire and/or explosion hazards:

- Mixtures of hydrocarbon vapor and air can ignite if the fuel-to-air ratio is within flammable or explosive limits.
- Sludge, if disturbed, can release hydrocarbon vapor.

Toxic vapors

The following substances encountered in tank work, alone or acting together, may have a detrimental effect when inhaled:

- Gasoline
- Ethanol
- Diesel fuel
- Jet fuel
- Aviation gas
- Additives
- Coatings
- Grit used to clean tanks

Continued on next page

5.1 – Work Permits, Continued

Two types of entry permits

Two types of entry permits are used in terminals:
- A Special Entry Permit is used for entry into confined spaces that have limited egress and the potential to contain hazardous atmospheres.
- A General Entry Permit is issued for entry into an enclosed space that has no potential to contain a hazardous atmosphere.

Typical uses of entry permits

Typically, a tank undergoing cleaning and maintenance is permitted as a Special Entry during initial entry for cleaning and roof stabilization. Then it is permitted as a General Entry after being degassed, or gas freed, and cleaned. You do not need an entry permit after the door sheet is removed. Due to limited available egress, you need a General Entry Permit to enter onto a floating roof.

5.2 – Preparing for the Job

Job preparation

Preparing to clean, repair, or dismantle a tank requires a series of steps before the tank is taken out of service.

Procedure

Make the following preparations before taking a tank out of service:

Step	Action
1	Prepare a safety and work plan for tank isolation, entry, and cleaning.
2	Review tank configuration, piping, and site layout.
3	Review information about products contained in the tank.
4	Establish a schedule for the job.

Continued on next page

Attachment 5

While it does not provide AST owners with *cookbook* answers to all problems, this standard does offer the best and most cost-effective current technology to ensure that in-service ASTs:

- Do not leak.
- Do not fail catastrophically because of brittle fracture or structural breakdown.

1013 Responsibility and Compliance

Responsibility

Owner/Operator. The owner/operator of the AST has the ultimate responsibility for complying or not complying with the provisions of API 653. This standard places the burden of determining long-range *suitability of service* on the owner/operator and defines the degree of quality by:

- Establishing the qualifications of inspection personnel.
- Requiring that findings be documented at the time of inspections.

The Company. The Company can assign certain tasks such as repairs or data collection to others, but must define clearly the limits of responsibility for these tasks before the work commences.

Compliance

For most facilities, a standard in itself is rarely mandated under law, except by implication; i.e., to comply with local, state, or federal authorities' references to *industrial standards* or *good engineering practice*. OSHA's Process Safety Management Regulation 1910.119 states, for example, that employers must maintain *written on-going integrity procedures,* follow *generally accepted good engineering practices,* and *document each inspection.*

API 653 sets minimum requirements for ASTs and, therefore, authorities having jurisdiction may impose this standard because nothing better exists. Such is the case with EPA's Spill Prevention Control and Countermeasures (SPCC) regulations that require regularly scheduled, documented inspections of ASTs in facilities near navigable waterways. While EPA's SPCC program does not mandate API 653, it is prescribed by default unless the owner/operator is already complying with all requirements of API 653.

1014 Implementation: Time and Costs

Implementation Timeframe

API 653 does not specify a deadline for compliance but does require owner/operators to perform the initial internal inspections within a ten-year interval from when API 653 is formally adopted by a facility. All in-service ASTs should, therefore, be scheduled for an initial, comprehensive, internal inspection within ten years. (See also "Cost of internal inspections" later in this section.)

