



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

8701 South Gessner, Suite 1110
Houston, TX 77074

NOTICE OF AMENDMENT

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 12, 2012

Mr. Kevin Bodenhamer
Senior Vice President
Enterprise Crude Pipeline, LLC
1100 Louisiana Street
Houston, TX 77002

CPF 4-2012-5008M

Dear Mr. Bodenhamer:

On April 11-15, 2011, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code inspected the Enterprise Crude Pipeline procedures for breakout tanks in Cushing, OK.

On the basis of the inspection, PHMSA has identified the apparent inadequacies found within Enterprise's plans or procedures, as described below:

1. 195.132 Aboveground breakout tank.

(a) Each aboveground breakout tank must be designed and constructed to withstand the internal pressure produced by the hazardous liquid to be stored therein and any anticipated external loads.

(b) For aboveground breakout tank first placed in service after October 2, 2000, compliance with paragraph (a) of this section requires one of the following: (1) Shop-fabricated, vertical, cylindrical, closed top, welded steel tanks with nominal capacities of 90 to 750 barrels (14.3 to 119.2 m³) and with internal vapor space pressures that are approximately atmospheric must be designed and constructed in accordance with API Specification 12F.

(2) Welded, low-pressure (i.e., internal vapor space pressure not greater than 15 psig (103.4 kPa)), carbon steel tanks that have wall shapes that can be generated by a single vertical axis of revolution must be designed and constructed in accordance with API Standard 620.

(3) Vertical, cylindrical, welded steel tanks with internal pressures at the tank top approximating atmospheric pressures (i.e., internal vapor space pressures not greater than 2.5 psig (17.2 kPa), or not greater than the pressure developed by the weight of the tank roof) must be designed and constructed in accordance with API Standard 650.

(4) High pressure steel tanks (i.e., internal gas or vapor space pressures greater than 15 psig (103.4 kPa)) with a nominal capacity of 2000 gallons (7571 liters) or more of liquefied petroleum gas (LPG) must be designed and constructed in accordance with API Standard 2510.

The Operator's procedures are not adequate to ensure compliance with the requirements of 195.132. At the time of the inspection, Enterprise presented a series of legacy procedures (procedures from acquired companies) as well as more recent Enterprise procedures intended to cover the requirements of 195.132. It is not clear how this assemblage of procedures would effectively be used by the Operator to ensure compliance with the requirements of this regulation. The procedures include a Williams Energy Services procedure, ES-3610, Atmospheric Steel Tanks, that covers the referenced API standards for construction of atmospheric and low pressure steel tanks but does not specify the correct version incorporated by referenced in Part 195. A procedure with the Duke Energy Field Services logo, LPG Truck Terminal – Design and Installation, was presented by the Operator to satisfy the requirements for constructing high pressure tanks steel to the API 2510 standard but it also does not specify the appropriate version of the standard incorporated by reference. A third procedure was presented by Enterprise, EGS E-6300, Storage Tank Guideline & Specification, that states it is a supplement to the API Standard 650 and includes exceptions, substitutions, modifications, and additions to the requirements specified in API 650 and may conflict with the Williams Energy Service ES-3610 procedure as well as the requirements of API 650. The Operator must consolidate the various versions of procedures intended to satisfy the requirements of this regulation into a consistent, usable procedure under the Operator's current legal name and show that any exceptions are at least as stringent as the requirements of the version of API 650 incorporated by reference into Part 195.

2. 195.205 Repair, alteration and reconstruction of aboveground breakout tanks that have been in service.

(a) Aboveground breakout tanks that have been repaired, altered, or reconstructed and returned to service must be capable of withstanding the internal pressure produced by the hazardous liquid to be stored therein and any anticipated external loads.

(b) After October 2, 2000, compliance with paragraph (a) of this section requires the following for the tanks specified:

(1) For tanks designed for approximately atmospheric pressure constructed of carbon and low alloy steel, welded or riveted, and non-refrigerated and tanks built to API Standard 650 or its predecessor Standard 12C, repair, alteration, and reconstruction must be in accordance with API Standard 653.

(2) For tanks built to API Specification 12F or API Standard 620, the repair, alteration, and reconstruction must be in accordance with the design, welding, examination, and material requirements of those respective standards.

(3) For high pressure tanks built to API Standard 2510, repairs, alterations, and reconstruction must be in accordance with API 510.

The Operator's procedures are not adequate to ensure compliance with the requirements of 195.205. Enterprise presented both old and new procedures covering breakout tank inspections but was unable to show where the requirements of this regulation are adequately covered by their procedures. EPCO, Inc., procedure EGS E-6320 presents exceptions, substitutions, and modifications to the requirements of API 653 and references an incorrect version of API 653 (API 653, Second Edition, December 1995). The document does not provide any engineering justification for the exceptions and modifications so it is not clear if an equivalent level of safety is achieved. In addition to EGS E-6320, Enterprise also presented a new procedure at the time of the inspection, STD 9503, DOT Breakout Tank Integrity Testing, Revision No. 0.0. This standard, which had not been implemented at the time of the inspection, references the API 653 standard but does not specify the version. Revision 2.0, presented after the inspection, lists the correct version of API 653. However, this version states in Section 8.2, External Inspection Frequency, "As an alternative, an owner/operator may establish the external inspection interval using risk-based inspection (RBI) procedures in accordance with API 653, 580, and 581." According to API 653, Appendix E – Technical Inquiries, Question 653-I-02/03, "RBI can be applied to internal inspection intervals only." In addition, Section 8.4 presents a table of internal inspection intervals. This table is from a more recent version of API 653 not incorporated by reference into Part 195. Also, it is not clear how the differences in these procedures (STD 9503 and EGS-E-6320) will be reconciled by Enterprise. Enterprise must revise its procedures to refer to the version of the standards incorporated by reference into Part 195, ensure the requirements of 195.205 are adequately covered by its procedures, provide engineering justification for all exceptions to the referenced standards, eliminate the use of risk-based procedures for establishing the external inspection interval, and eliminate conflicts and inconsistencies between the various Enterprise procedures dealing with the inspection, repair, alteration and reconstruction of breakout tanks.

3. 195.264 Impoundment, protection against entry, normal/emergency venting or pressure/vacuum relief for aboveground breakout tanks.

Impoundment, protection against entry, normal/emergency venting

(a) A means must be provided for containing hazardous liquids in the event of spillage or failure of an aboveground breakout tanks.

(b) After October 2, 2000, compliance with paragraph (a) of this section requires the following for the aboveground breakout tanks specified:

(1) For tanks built to API Specification 12F, API Standard 620, and others (such as API Standard 650 or its predecessor Standard 12C), the installation of impoundment must be in accordance with the following sections of NFPA 30:

(i) Impoundment around a breakout tank must be installed in accordance with section 4.3.2.3.2; and

(ii) Impoundment by drainage to a remote impounding area must be installed in accordance with section 4.3.2.3.1.

(2) For tanks built to API 2510, the installation of impoundment must be in accordance with section 5 or 11 of API 2510 (incorporated by reference, see §195.3).

(c) Aboveground breakout tanks areas must be adequately protected against unauthorized entry.

(d) Normal/emergency relief venting must be provided for each atmospheric pressure breakout tank. Pressure/vacuum-relieving devices must be provided for each low-pressure and high-pressure breakout tank.

(e) For normal/emergency relief venting and pressure/vacuum-relieving devices installed on aboveground breakout tanks after October 2, 2000, compliance with paragraph (d) of this section requires the following for the tanks specified:

(1) Normal/emergency relief venting installed on atmospheric pressure tanks built to API Specification 12F (incorporated by reference, see § 195.3) must be in accordance with Section 4, and Appendices B and C, of API Specification 12F (incorporated by reference, see § 195.3).

(2) Normal/emergency relief venting installed on atmospheric pressure tanks (such as those built to API Standard 650 or its predecessor Standard 12C) must be in accordance with API Standard 2000 (incorporated by reference, see § 195.3).

(3) Pressure-relieving and emergency vacuum-relieving devices installed on low pressure tanks built to API Standard 620 (incorporated by reference, see § 195.3) must be in accordance with section 9 of API Standard 620 (incorporated by reference, see § 195.3) and its references to the normal and emergency venting requirements in API Standard 2000 (incorporated by reference, see § 195.3).

(4) Pressure and vacuum-relieving devices installed on high pressure tanks built to API Standard 2510 (incorporated by reference, see § 195.3) must be in accordance with sections 7 or 11 of API Standard 2510 (incorporated by reference, see § 195.3).

The Operator's procedures are not adequate to ensure compliance with the requirements of 195.264(b) and (c). Enterprise presented a series of legacy procedures (procedures from acquired companies) as well as more recent Enterprise procedures but was unable to show where the requirements of this regulation are adequately covered by their procedures. For example, Williams Energy Service procedure ES-3610, Atmospheric Steel Tanks, was initially presented to satisfy the requirements of 195.264(b). The procedure states that the latest approved editions of NFPA (without a specific standard number) will be used but no further mention of NFPA 30 requirements are made in the procedure. Enterprise then presented the procedure EPCO, Inc., EGS E-6302, Storage Tank Guidelines & Specifications, which states that "All tank farms shall be designed in accordance with this specification and with the latest editions of the following: 1.2.1.NFPA 30, Flammable and Combustible Liquids Code..." The Enterprise procedure needs to specify the use of the version incorporated by reference into Part 195. The procedure states in paragraph 3.1.1 "...Dikes shall conform with this specification and where applicable in NFPA 30." The Enterprise procedure must state that the design must conform to the version of NFPA 30 incorporated by reference into Part 195 (Part 195 does not provide correct references to the NFPA standard now incorporated by reference). Enterprise also presented an EPCO, Inc.,

procedure EGS E-6310, Storage Tank Guideline & Specification, with the subject title, Secondary Containment & Leak Detection. Under section 2.0, Referenced Codes and Standards, the document specifies that Section 2-2.3.3, Impounding Around Tanks by Diking, "...shall form an integral part of this specification." There is no section with this number in the Part 195 referenced version of NFPA 30. Also, the Enterprise security procedure, Procedures Manual for Hazardous Liquids Pipeline Operations, Maintenance, and Emergencies, Security, Section 1309, states "Pump Stations, terminals, breakout tank areas, and valve sites shall be maintained in a secure condition and shall be fenced and/or locked or attended for the protection of the property and the public." 195.264(c) requires that breakout tank areas "be adequately protected against unauthorized entry." The Enterprise procedures must require that the security measures provide protection against unauthorized entry. Enterprise must modify its procedures to refer to the correct version of the standards incorporated by reference into Part 195, require impoundment comply with the requirements of the correct version of NFPA 30, provide the correct standards references in its procedures, and require adequate protection against unauthorized entry.

4. 195.307 Pressure testing aboveground breakout tanks.

(a) For aboveground breakout tanks built into API Specification 12F and first placed in service after October 2, 2000, pneumatic testing must be in accordance with section 5.3 of API Specification 12 F (incorporated by reference, see § 195.3).

(b) For aboveground breakout tanks built to API Standard 620 and first placed in service after October 2, 2000, hydrostatic and pneumatic testing must be in accordance with section 7.18 of API Standard 620 (incorporated by reference, see §195.3).

(c) For aboveground breakout tanks built to API Standard 650 (incorporated by reference, see § 195.3 and first placed in service after October 2, 2000, testing must be in accordance with Section 5.2 of API Standard 650 (incorporated by reference, see § 195.3).

(d) For aboveground atmospheric pressure breakout tanks constructed of carbon and low alloy steel, welded or riveted, and non-refrigerated and tanks built to API Standard 650 or its predecessor Standard 12C that are returned to service after October 2, 2000, the necessity for the hydrostatic testing of repair, alteration, and reconstruction is covered in section 10.3 of API Standard 653.

(e) For aboveground breakout tanks built to API Standard 2510 and first placed in service after October 2, 2000, pressure testing must be in accordance with ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 or 2.

The Enterprise procedure for testing API 12F and 12D tanks, Williams Energy Services procedure ES-3610, Atmospheric Steel Tanks, Section 6, Testing and Inspections, requires a pressurized air test but does not state that testing will be in done accordance with Section 5.3 of API 12F as required by 195.307(a). The Enterprise procedure for testing API 620 tanks, ES-3610, Section 6, Testing and Inspections, requires a hydrostatic test but does not state that the testing will be in accordance with Section 7.18 of API 620 as required by API 195.307(b). The Enterprise procedures for testing API 650 tanks, ES-3610, Section 6, Testing and Inspections, and E-6320, Section 10.3, Tank Inspection Repair, Alteration, and Reconstruction, requires a hydrostatic test but does not state that the testing will be in accordance with Section 5.3 of API 650 as required by 195.307(c). The Enterprise procedure E-6320, Section 10.3, Tank Inspection

Repair, Alteration, and Reconstruction requires a hydrostatic test but does not state that the testing will be done in accordance with Section 12.3 of API 653 as required by 195.307(d). The Operator did not present a procedure that states the testing for an API 2510 tank will be done according to the ASME Boiler and Pressure Vessel Code as required by 195.307(e). Enterprise must modify its procedures to require that testing be performed according to the correct version of the standard incorporated by reference into Part 195 for each type of tank as specified by 195.307.

5. 195.310 Records.

- (a) A record must be made of each pressure test required by this subpart, and the record of the latest test must be retained as long as the facility tested is in use.**
- (b) The record required by paragraph (a) of this section must include:**
 - (1) The pressure recording charts;**
 - (2) Test instrument calibration data;**
 - (3) The name of the operator, the name of the person responsible for making the test, and the name of the test company used, if any;**
 - (4) The date and time of the test;**
 - (5) The minimum test pressure;**
 - (6) The test medium;**
 - (7) A description of the facility tested and the test apparatus;**
 - (8) An explanation of any pressure discontinuities, including test failures, that appear on the pressure recording charts; and,**
 - (9) Where elevation differences in the section under test exceed 100 feet (30 meters), a profile of the pipeline that shows the elevation and test sites over the entire length of the test section.**
 - (10) Temperature of the test medium or pipe during the test period.**

The Williams Energy Services procedure, ES-3610, Atmospheric Steel Tanks, does not specify retention requirements for hydrostatic testing records. The EPCO, Inc., procedure E-6320, Tank Inspection Repair, Alteration, and Reconstruction, requires the maintenance of test records but is not adequately specific as to the documentation requirements. The specific records listed in 195.310(b) include documentation for a pipeline pressure test but the documents applicable to a tank pressure test should be specified by the Operator's procedures. Enterprise must modify its procedures to specify the documents and retention requirements for tank testing records.

6. 195.405 Protection against ignitions and safe access/egress involving floating roofs.

- (a) After October 2, 2000, protection provided against ignitions arising out of static electricity, lightning, and stray currents during operation and maintenance activities involving aboveground breakout tanks must be in accordance with API Recommended Practice 2003, unless the operator notes in the procedural manual (§195.402(c)) why compliance with all or certain provisions of API Recommended Practice 2003 is not necessary for the safety of a particular breakout tank.**

(b) The hazards associated with access/egress onto floating roofs of in-service aboveground breakout tanks to perform inspection, service, maintenance or repair activities (other than specified general considerations, specified routine tasks or entering tanks removed from service for cleaning) are addressed in API Publication 2026. After October 2, 2000, the operator must review and consider the potentially hazardous conditions, safety practices and procedures in API Publication 2026 for inclusion in the procedure manual (§195.402(c)).

Enterprise was unable to provide a procedure that states how the requirements of this regulation would be met and no reference to API RP 2003 was found in the Enterprise procedures. API RP 2003 is referenced by API 653 but compliance with API RP 2003 should be specifically required by the Operator's breakout tank procedures. Pertaining to 195.405(b), Enterprise did not provide a procedure that states how the requirements of this regulation would be met, and no reference to API RP 2026 was found in the Enterprise procedures. The use of API RP 2026 is required by this regulation, so the operator must procedurally address the requirements of API RP 2026. Enterprise must modify its procedures to include the requirements of the correct versions of API RP 2003 and API RP 2006, incorporated by reference into Part 195.

7. 195.436 Security of facilities.

Each operator shall provide protection for each pumping station and breakout tank area and other exposed facility (such as scraper traps) from vandalism and unauthorized entry.

The Enterprise procedures manual, Procedures Manual for Hazardous Liquids Pipeline Operations, Maintenance, and Emergencies, Security, Section 1309, does not require protection from vandalism and unauthorized entry. The procedure must be modified to ensure compliance with the requirements of 195.436 and should provide more details on how the Operator will meet security requirements.

Response to this Notice

This Notice is provided pursuant to 49 U.S.C. § 60108(a) and 49 C.F.R. § 190.237. Enclosed as part of this Notice is a document entitled *Response Options for Pipeline Operators in Compliance Proceedings*. Please refer to this document and note the response options. Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. 552(b). If you do not respond within 30 days of receipt of this Notice, this constitutes a waiver of your right to contest the allegations in this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Final Order.

If, after opportunity for a hearing, your plans or procedures are found inadequate as alleged in this Notice, you may be ordered to amend your plans or procedures to correct the inadequacies (49 C.F.R. § 190.237). If you are not contesting this Notice, we propose that you submit your amended procedures to my office within 60 days of receipt of this Notice. This period may be extended by written request for good cause. Once the inadequacies identified herein have been addressed in your amended procedures, this enforcement action will be closed.

It is requested (not mandated) that Enterprise maintain documentation of the safety improvement costs associated with fulfilling this Notice of Amendment (preparation/revision of plans, procedures) and submit the total to R. M. Seeley, Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration. In correspondence concerning this matter, please refer to **CPF 4-2012-5008M** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,



R. M. Seeley
Director, Southwest Region
Pipeline and Hazardous
Materials Safety Administration

Enclosure: *Response Options for Pipeline Operators in Compliance Proceedings*