



U.S. Department  
of Transportation

**Pipeline and  
Hazardous Materials Safety  
Administration**

8701 South Gessner, Suite 1110  
Houston, TX 77074

**NOTICE OF PROBABLE VIOLATION  
PROPOSED CIVIL PENALTY  
and  
PROPOSED COMPLIANCE ORDER**

**CERTIFIED MAIL- RETURN RECEIPT REQUESTED**

May 1, 2013

Mr. Terry Hurlburt  
Senior Vice President of Operations  
Enterprise Products Operating LLC  
1100 Louisiana Street  
Houston, TX 77002

Dear Mr. Hurlburt:

**CPF 4-2013-5011**

On multiple occasions between April 30 and August 24, 2012, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) was onsite and inspected Enterprise Products Operating, LLC (Enterprise) procedures, records, and pipeline facilities in Texas, Louisiana, and Arkansas operating areas pursuant to Chapter 601 of 49 United States Code.

As a result of the inspection, it appears that you have committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations. The items inspected and the probable violations are:

**1. §195.202 Compliance with specifications or standards:**

**Each pipeline system must be constructed in accordance with comprehensive written specifications or standards that are consistent with the requirements of this part.**

Enterprise could not demonstrate that they followed all requirements of their specifications when constructing a tank in 2011. PHMSA requested that Enterprise provide the construction specifications along with the test results of the water quality used for the purpose of hydrostatic testing of breakout tank # 772. Tank 772 was to be built in accordance with API 650 as

referenced by the Enterprise specifications. Specifically, API 650, 7.3.6.3 states, The purchaser shall be responsible for:

Specifying the test water quality. Potable water is preferred for hydro-testing. This does not preclude the use of condensate, reverse osmosis water, well water, river water, or sea water. The purchaser shall consider issues such as low temperature brittle fracture, freeze damage, amount of suspended solids, sanitation issues, animal/plant incubation and/or growth, acidity, general corrosion, pitting, protecting against cathodic cells, microbiologically-induced corrosion, material dependent sensitivity to trace chemical attack, disposal, rinsing, and residuals left in the tank after emptying. If the purchaser supplied test water causes corrosion, the purchaser is responsible for the required repairs.

Enterprise provided only a water permit which does not contain a description of the quality of the water.

## **2. §195.202 Compliance with specifications or standards:**

**Each pipeline system must be constructed in accordance with comprehensive written specifications or standards that are consistent with the requirements of this part.**

Enterprise could not demonstrate that they followed all requirements of their specifications when constructing a tank in 2011. PHMSA requested that Enterprise provide the construction specifications along with the Vacuum Box testing report of breakout tank# 772. Tank 772 was to be built in accordance with API 650 as referenced by the Enterprise specifications. Specifically, API 650, Section 8.6.6 states:

“The metal surface temperature limits 4°C and 52°C, unless the film solution is proven to work at temperature outside these limits either by testing or manufacturer’s recommendations.”

API 650, Section 8.6.7 states:

“A minimum light intensity of 1000 LUX at the point of examination is required during the application of the examination and evaluation for leaks.”

API 650, Section 8.6.10 states:

“A record or report of the test including a statement addressing temperature and light intensity shall be completed and furnished to the purchaser upon request.”

The Vacuum Box test report of the breakout tank# 772 provided by Enterprise does not satisfy the requirements of API 650, Sections 8.6.6, 8.6.7, and 8.6.10. The report does not reflect the recording of metal surface temperature, minimum light intensity.

## **3. §195.565 How do I install cathodic protection on breakout tanks?**

**After October 2, 2000, when you install cathodic protection under Sec. 195.563(a) to protect the bottom of an aboveground breakout tank of more than 500 barrels (79.5m<sup>3</sup>) capacity built to API Specification 12F, API Standard 620, or API Standard 650 (or its predecessor Standard 12C), you must install the system in accordance with API Recommended Practice 651. However, installation of the system need not comply with API Recommended Practice 651 on any tank for which you note in the corrosion control procedures established under Sec. 195.402(c)(3) why compliance with all or certain provisions of API Recommended Practice 651 is not necessary for the safety of the tank.**

Enterprise could not demonstrate that they installed a cathodic protection system in accordance with API 651 following the construction of a tank in 2011. API 651, Section 5.3.2.1.k (Sand Pad Materials) states:

Random testing of the sand material should be conducted at the supply source to determine if the electrical resistivity and chemical properties are at acceptable levels. ...

Upon request Enterprise failed to provide the chemical analysis of the sand materials backfilled underneath the breakout tank (# 772) bottom.

According to §195.565, the installation of cathodic protection system in compliance with API Recommended Practice 651 is not required as long as Enterprise has the proper justification why compliance with all or certain provisions of API Recommended Practice 651 is not necessary for the safety of the tank. When requested, Enterprise could not provide documentation whether the chemical analysis of the sand materials was conducted or the justification for not complying with API recommended Practice 651 Standard.

#### **4. §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.**

Enterprise could not demonstrate that they followed all requirements of their specifications when repairing a tank in 2008. PHMSA requested that Enterprise provide the Vacuum Box testing report as required by API 653 for breakout tank #741. API 653, Section 12.1.7.1 states:

“ ... In addition, all new welds, including the weld attaching a patch plate to the bottom, the areas of bottom plate restored by welding, and the restoration of welds found with defects during an internal inspection shall be inspected by one of the methods specified in API 650, Section 7.3.3. ...”

API 650, Section 7.3.3: Examination and Testing of the Tank Bottom states: “... In addition, all welds shall be tested by one of the following methods”.

- a) A vacuum-box test in accordance with 8.6
- b) A tracer gas test in accordance with 8.6.11
- c) After at least the lowest shell course has been attached ...

Enterprise chose to follow option (a) vacuum box test. API 650, Section 8.6.6 states that the metal surface temperature limits 4°C and 52°C, unless the film solution is proven to work at temperature outside these limits either by testing or manufacturer’s recommendations. API 650, Section 8.6.7 states that a minimum light intensity of 1000 LUX at the point of examination is required during the application of the examination and evaluation for leaks. API 650, Section

8.6.10 states that “A record or report of the test including a statement addressing temperature and light intensity shall be completed and furnished to the purchaser upon request.”

The Vacuum Box test report of breakout tank# 741 provided by Enterprise lacks the specificity required to show that the requirements of API 650 were met.

#### **5. §195.402 Procedural Manual for Operations, Maintenance, and Emergencies**

**(a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.**

Enterprise did not follow their O&M procedures for conducting post-accident investigations. Enterprise’s written O&M procedure in Section 702 (Investigations of Failures), revised on November 10, 2011, requires that “All Operational failures and accidents ... shall be investigated ...” The procedure goes on to state that information gained by investigation shall be considered and utilized to prevent recurrence of failures. The Operations Manager is responsible for ensuring this work is complete and documentation is made and retained. The local field office shall retain these reports and documents.

Enterprise reported an accident to the National Response Center (NRC #996202) on November 22, 2011, in Sulphur, Louisiana. The Enterprise Sulphur facility was shut down due to a leak on a pig trap. During the inspection, PHMSA requested the post-accident review for this accident. Enterprise stated that this was never completed and could not provide the post-accident review.

#### **6. §195.402 Procedural manual for operations, maintenance, and emergencies**

**(a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.**

Enterprise failed to follow their written O&M procedure for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. Enterprise O&M procedure CPP-DR-01 (Deficiency Reporting and Remedial Action Development), Section 1.2 states:

Deficiencies identified that are not immediately corrected should be documented and submitted by the corrosion technician within two weeks.

Enterprise O&M procedure CPP-DR-01, Section 2.1 also states:

The corrosion technician will report the deficiency or deficiencies on the Company Remedial Action Form with recommendations on how the deficiency is to be corrected.

During the inspection, PHMSA reviewed the Remedial Action Forms on line P-1(16" Baytown to Beaumont) and P-63(20" Baytown to Beaumont). The review revealed that all the Deficiency Action Forms did not reflect any submission dates to the corrosion supervisor which should be within two (2) weeks after the discovery as mentioned in Section 1.2. Delayed reporting of deficiencies could lengthen the time of necessary repairs and could jeopardize the integrity of the pipeline system.

## **7. §195.404 Maps and Records**

**(b) Each operator shall maintain for at least 3 years daily operating records that indicate –  
(2) Any emergency or abnormal operation to which the procedures under §195.402 apply.**

Enterprise failed to maintain a record of an abnormal operation. Enterprise O&M Procedure, Section 811(Abnormal Operation Procedures) states:

Note - When field personnel have given notification to Control Room that they are at a site and are testing or "DOT'ing" equipment in the field, and they cause a critical alarm which is false, this will not require an AOC. However, after verifying with the field personnel that the conditions associated with those alarms truly are false, the controller is required to match Electronic Logger entry explaining personnel on site caused the false alarm.

Enterprise O&M Procedure, HCC-PCOT-002(Abnormal Operating Condition), Section 1.4 states:

Make an entry in the Electronic Logger of all the abnormal operating conditions. These will then be reported to the affected field technician. If an abnormal condition occurs at any facility manned or unmanned, and if the problem is corrected by the field, the field personnel are responsible for completing the AOC form on the Electronic Logger. If the AOC is corrected by the Network Operations Center or a controller, the Controller will fill out the AOC form on the Electronic Logger.

On May 3, 2012, during the field evaluation of the Orange pump station, PHMSA and Enterprise created an abnormal operation with the two gas detectors being tested at 20% LEL. One was tested at 2:38 PM and other was tested at 2:48 PM. On May 8, 2012, PHMSA requested the alarm log sheet of the events that were created on May 3, 2012. The Controller could not provide the acknowledgement of the second gas detector activation (activated at 2:48 PM). When questioned about the missing acknowledgement of the gas detector activation, the Controller contended that there would be the possibility of not having properly activated the gas detector or not activated the gas detector at all.

## **8. §195.505 Qualification program**

**Each operator shall have and follow a written qualification program. The program shall include provisions to:**

- (a) Identify covered tasks;**
- (b) Ensure through evaluation that individuals performing covered tasks are qualified**

**(h) After December 16, 2004, provide training, as appropriate, to ensure that individuals performing covered tasks have the necessary knowledge and skills to perform the tasks in a manner that ensures the safe operation of pipeline facilities; and**

Enterprise did not ensure that individuals performing covered tasks had the necessary knowledge and skills. Enterprise has in its Operator Qualification (OQ) program a covered task identified as "1.1 Measure structure to soil potentials". At Enterprise' Baytown terminal this task was performed by a Mr. Olason on several tanks. During the inspection in 2012, PHMSA observed that several breakout tanks in the Baytown Tank terminal, have zinc reference electrodes permanently installed underneath the tank bottom. The OQ program is limited to measuring cathodic protection by utilizing a Copper/Copper Sulfate reference half-cell. The Enterprise OQ program did not provide a written qualification program specifically dealing with the measurement of cathodic protection systems which utilize zinc reference electrodes.

Enterprise contended that the field technicians are well trained on zinc reference electrodes conversion. During the field visit, technicians could not interpret the zinc conversion accurately. Because the zinc reference electrodes are not covered in the OQ program, Enterprise did not ensure through evaluation that individuals performing this covered task were qualified and had the knowledge required to perform this covered task.

#### **9. §195.573 What must I do to monitor external corrosion control?**

**(d) Breakout tanks. You must inspect each cathodic protection system used to control corrosion on the bottom of an aboveground breakout tank to ensure that operation and maintenance of the system are in accordance with API Recommended Practice 651. However, this inspection is not required if you note in the corrosion control procedures established under Sec. 195.402(c)(3) why compliance with all or certain operation and maintenance provisions of API Recommended Practice 651 is not necessary for the safety of the tank.**

Enterprise failed to properly inspect the cathodic protection system of breakout tanks for three years. Enterprise O&M Procedure, CP-13 (Onshore Pipeline and Facility Annual Cathodic Protection Survey), revised on June 24, 2011, states:

Section 2.8 (Cathodic Protection Criteria):

A negative (cathodic) potential of at least -850mV with cathodic protection applied (Cu/CuSO<sub>4</sub> reference electrode). **This criterion shall be used as the primary criteria for all facilities.** This criterion must take voltage drops (IR) into consideration. Note: NACE SP0169-2007 states a negative (cathodic) potential of at least -850 mV with the cathodic protection applied.

Section 2.8.1 Considering IR Drop for -850 mV Criterion

"Voltage drops other than those across the structure-to-electrolyte boundary must be considered for valid interpretation of IR-Drop measurement. One method is to conduct the annual survey while all CP current sources are interrupted. This method will be utilized at all Company pipelines/facilities on a rotating 5 to 7 year schedule."

While reviewing the records for the cathodic protection of several breakout tanks PHMSA noted that for three years (2009, 2010, and 2011) the records indicate that Enterprise failed to properly consider IR-Drop. Enterprise could not provide any documentation where they measured the IR-drop on these facilities in order to properly consider it in the annual measurements. Enterprise also stated that this IR-Drop measurement has never been performed.

The locations and tanks where with improper cathodic protection measurements are:

- 3 breakout tanks at McRae, AR
- 1 breakout tank at Jacksonville, AR
- 2 breakout tanks at N. Little Rock, AR
- 21 breakout tanks at El Dorado, AR
- 13 Breakout tanks at Baytown, TX\*
- 4 Breakout tanks at Shreveport, LA\*\*

\* Enterprise provided the records of IR-drop measurement taken on July 11, 2012 (which was during the PHMSA audit). Considering this the measurements satisfy the -850 mV criterion.

\*\* Enterprise provided the records of IR-drop measurement taken on September 28, 2012 (which was after the PHMSA audit). Considering this the measurement satisfy the -850 mV criterion.

#### **10. §195.573 What must I do to monitor external corrosion control?**

**(d) Breakout tanks. You must inspect each cathodic protection system used to control corrosion on the bottom of an aboveground breakout tank to ensure that operation and maintenance of the system are in accordance with API Recommended Practice 651. However, this inspection is not required if you note in the corrosion control procedures established under Sec. 195.402(c)(3) why compliance with all or certain operation and maintenance provisions of API Recommended Practice 651 is not necessary for the safety of the tank.**

Enterprise failed to inspect the cathodic protection system used to control corrosion on the bottom of the aboveground breakout tank # 1305 to ensure that operation and maintenance of the system are in accordance with API Recommended Practice 651. Enterprise O&M Procedure, Section 1307 (Breakout tanks, Miscellaneous Operating Procedure) states:

Inspection of Cathodic Protection System on Breakout Tanks:

Where cathodic protection is used to protect the bottoms of breakout tanks (with capacities of more than 500 barrels, built to API specification 12F, API Standard 620, API Standard 650 or API Standard 12c), inspections of the cathodic protection system shall be conducted in accordance with API Recommended Practice 651 and the Company Corrosion Prevention Program.

Breakout tank # 1305 at McRae terminal has the permanently installed reference electrodes underneath its bottom. PHMSA requested that Enterprise provide three years (2009, 2010, and 2011) of records of the cathodic protection inspection (annual pipe-to-soil readings) to verify the adequacy of the cathodic protection of the entire span of the tank bottom. According to the records, PHMSA noted that Enterprise has been ignoring the use of reference electrodes

underneath the tank bottom and only performing the cathodic protection inspection utilizing the tank's perimeter in the past several years. Even though, the annual pipe-to-soil readings of the tank perimeter meet the - 850 mV criterion, it does not ensure that the center and/or middle of the tank bottom is cathodically protected. Breakout tank# 1305 was built in 2007 and is scheduled for internal inspection in 2016.

According to §195.573, the installation of cathodic protection system in compliance with API Recommended Practice 651 is not required as long as Enterprise has the proper justification why compliance with all or certain provisions of API Recommended Practice 651 is not necessary for the safety of the tank. PHMSA also advised Enterprise to provide the O&M procedure where the justification for not complying with API Recommended Practice 651 Standard has been noted. Enterprise could not provide answer.

**11. §195.581 Which pipelines must I protect against atmospheric corrosion and what coating material may I use?**

- (a) You must clean and coat each pipeline or portion of pipeline that is exposed to the atmosphere, except pipelines under paragraph (c) of this section.**
- (b) Coating material must be suitable for the prevention of atmospheric corrosion.**

During the September field visit of Fitch pump station, in Louisiana, PHMSA noted that the bolts and nuts of the valve's flange and the residual sample collection pipe on the ILI receiver side have been experiencing coating deterioration and rusted. PHMSA noted this to field personnel who responded that the issue has already been captured during the routine survey and placed in company's 2012 budget.

Proposed Civil Penalty

Under 49 United States Code, § 60122, you are subject to a civil penalty not to exceed \$200,000 per violation per day the violation persists up to a maximum of \$2,000,000 for a related series of violations. For violations occurring prior to January 3, 2012, the maximum penalty may not exceed \$100,000 per violation per day, with a maximum penalty not to exceed \$1,000,000 for a related series of violations. The Compliance Officer has reviewed the circumstances and supporting documentation involved in the above probable violations and has recommended that you be preliminarily assessed a civil penalty of \$106,100 as follows:

<u>Item number</u>	<u>PENALTY</u>
5	\$28,700
8	\$26,200
9	\$51,200

Warning Items

With respect to item 1, 2, 3, 4, 6, 7, 10 and 11 we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. We advise you to promptly



correct these item(s). Be advised that failure to do so may result in Enterprise Products Operating LLC being subject to additional enforcement action.

Proposed Compliance Order


With respect to item(s) 8 pursuant to 49 United States Code § 60118, the Pipeline and Hazardous Materials Safety Administration proposes to issue a Compliance Order to Enterprise Products Operating LLC. Please refer to the *Proposed Compliance Order*, which is enclosed and made a part of this Notice.

Response to this Notice

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. All material you submit in response to this enforcement action may be 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.

In your correspondence on this matter, please refer to **CPF 4-2013-5011** 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

Enclosures: *Proposed Compliance Order*  
*Response Options for Pipeline Operators in Compliance Proceedings*

## **Proposed Compliance Order**

Pursuant to 49 United States Code §60118, the Pipeline and Hazardous Materials Safety Administration (PHMSA) proposes to issue to Enterprise Products Operating, LLC (Enterprise) a Compliance Order incorporating the following remedial requirements to ensure the compliance of Enterprise with the pipeline safety regulations:

1. In regard to Item 8 of the Notice pertaining to no written qualification program for qualifying individuals being responsible for the testing and maintenance of zinc reference electrodes, the operator is to develop a written program specifically for testing and maintenance of the zinc reference electrodes. This is also to include taking steps to qualify the individuals to ensure that each individual understands the zinc reference electrodes, instead of the copper/copper sulfate electrode and the conversion factor equivalent to copper/copper sulfate reference electrode. This shall be completed within 90 days following receipt of the Final Order.
2. It is requested (not mandated) that Enterprise Products Operating LLC maintains documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to R. M. Seeley, Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies, and analyses, and 2) total cost associated with replacements, additions, and other changes to pipeline infrastructure.