



U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

August 11, 2020

VIA ELECTRONIC MAIL TO: rfowler@eprod.com

Mr. W. Randall Fowler
Director, Co-Chief Executive Officer, and Chief Financial Officer
Enterprise Products Partners, LP
1100 Louisiana Street
Houston, Texas 77002-5227

Re: CPF No. 4-2017-5008M

Dear Mr. Fowler:

Enclosed please find the Order Directing Amendment issued in the above-referenced case. It makes findings of inadequate procedures and requires that Enterprise Crude Pipeline, LLC, a subsidiary of Enterprise Products Partners, LP, amend certain written procedures. When the amendment of procedures is completed, as determined by the Director, Southwest Region, this enforcement action will be closed. Service of the Order Directing Amendment by electronic mail is effective upon the date of transmission as provided under 49 C.F.R. § 190.5.

Thank you for your cooperation in this matter.

Sincerely,

ALAN KRAMER
MAYBERRY

Digitally signed by ALAN
KRAMER MAYBERRY
Date: 2020.08.07
15:08:50 -04'00'

Alan K. Mayberry
Associate Administrator
for Pipeline Safety

Enclosure

cc: Ms. Mary McDaniel, Director, Southwest Region, Office of Pipeline Safety, PHMSA
Mr. Graham W. Bacon, Executive Vice President, Operations & Engineering, Enterprise
Products Partners, LP, gbacon@eprod.com

CONFIRMATION OF RECEIPT REQUESTED

**U.S. DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
WASHINGTON, D.C. 20590**

In the Matter of)	
)	
Enterprise Crude Pipeline, LLC,)	CPF No. 4-2017-5008M
a subsidiary of Enterprise Products Partners, LP,)	
)	
Respondent.)	
)	

ORDER DIRECTING AMENDMENT

From March 4 through October 9, 2015, pursuant to 49 U.S.C. § 60117, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), conducted an on-site pipeline safety inspection of the construction procedures for the Rancho Pipeline of Enterprise Crude Pipeline, LLC (Enterprise or Respondent), in Texas. Enterprise, a subsidiary of Enterprise Products Partners, LP, operates the Rancho Pipeline, a 36-inch diameter crude oil line stretching from Jones Creek, Texas to Echo Park Terminal outside of Galena Park, Texas.¹

As a result of the inspection, the Director, Southwest Region, OPS (Director), issued to Respondent, by letter dated March 30, 2017, a Notice of Amendment (Notice). In accordance with 49 C.F.R. § 190.206, the Notice alleged certain inadequacies in Respondent’s written procedures and proposed requiring Enterprise to amend its procedures to ensure safe operation of its pipeline facilities.

After requesting and receiving an extension of time, Enterprise Products Partners, LP, on behalf of Enterprise, responded to the Notice by letter dated June 15, 2017 (Response). In its Response, Enterprise did not contest the allegation that its procedures were inadequate and submitted copies of its amended procedures. After reviewing the amended procedures and engaging in additional discussions with PHMSA to clarify certain aspects of the amended procedures, Enterprise submitted an additional set of revised procedures in April 2019.² After reviewing these procedures, on September 26, 2019, the Director determined that the revised procedures were inadequate to ensure safe operation of Enterprise’s pipeline facilities. Enterprise contested the allegation that its revised procedures were inadequate and provided additional information by electronic mail dated October 18, 2019 (Supplemental Response). Respondent did not request a hearing and therefore has waived its right to one.

¹ Pipeline Safety Violation Report (Report), at 1 (Mar. 30, 2017) (on file with PHMSA).

² *Enterprise Engineering and Specifications STD.8706 Bending and Alignment (STD.8706) REV.2.2 (Apr. 2019)* (on file with PHMSA).

FINDING OF INADEQUATE PROCEDURES

Item 1: The Notice alleged that Respondent's procedures were inadequate with regard to 49 C.F.R. §195.202, which states:

§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.

The Notice alleged that Respondent's written construction procedures were inadequate to assure safe operation of the pipeline facility because they failed to confirm construction in accordance with comprehensive written specifications or standards consistent with Part 195 requirements. Specifically, the Notice alleged that the *Enterprise Engineering and Specifications STD.8706 Bending and Alignment (STD.8706)* procedure did not provide adequate requirements for performing field bends of spiral-weld seam pipe. Although Enterprise was constructing the Rancho Pipeline using spiral seam pipe, the Notice alleged that its written specifications for bending did not specifically address bending this type of pipe. Instead, Enterprise's procedures applied to all types of pipe generally and only specifically mentioned specifications for bending longitudinal-weld seam pipe. The Notice proposed that Enterprise revise its procedures with regard to bending spiral-weld pipe to include, at a minimum, position of bending shoes, whether the shoes can press on the spiral-weld seam, and test bends.

In its Response, Enterprise amended Sections 2.2 and 2.3 of STD.8706 to *exclude* spiral-weld (also referred to as helically-weld) pipe from the generally-applicable weld seam and bending shoe positioning requirements.³ Enterprise also amended Section 2.4 to include a table limiting the allowable minimum bend radii and applicable tolerances when using spiral-weld source pipe.⁴ Finally, Enterprise added Section 2.6 to address material properties and the potential need for producing and testing prototype bends.⁵ During follow-up discussions, the Region informed Enterprise that it believed its amended procedures still did not adequately address spiral seam

³ Response, at 2. Revised Section 2.2. states: "All overbends, sags and sidebends shall be made to provide an adequate amount of slack or flexibility in the pipeline and shall conform to engineering design tolerances. Where no such tolerances were provided, the Contractor shall consult with Company to seek guidance prior to proceeding. Weld seams shall be positioned as near as practicable to the neutral axis of the bend. Helically-welded pipe is an exception to this weld seam position requirement." Revised Section 2.3 states: "Each bend shall be made using Company approved bending machines having full encirclement bending shoes with a neoprene or urethane lining to produce a smooth, symmetrical bend, unless specified otherwise by Company. If the pipe is internally coated, the bearing surfaces of the mandrel shall be constructed to avoid permanently marking or damaging the internal coating. Position bending shoes and mandrels so as not to apply a point load to the seam weld and minimize stresses in the seam weld. Helically-welded pipe is an exception to this bending shoe positioning requirement. No appreciable stretching or thinning of the pipe wall thickness shall be permitted."

⁴ *Id.*, at 2-3.

⁵ *Id.*, at 3. Section 2.6 states: "(1) Bends used in sour gas pipelines should meet the hardness requirements of NACE MR0175 in the as-bent condition. Bends exposed to or used in low temperature service should meet toughness and tensile requirements in the as-bent condition. (2) The Company may request that prototype bends are made and tested to ensure that a particular field bending procedure produces bends meeting the material property requirements."

pipe. In response, Enterprise submitted a new set of revised procedures (STD.8706 REV2.2). Enterprise contended that STD.8706 REV2.2 adequately covered position of bending shoes, whether shoes can press on the spiral-weld seams, and test bends.⁶

After additional discussions with the operator, the Region found Enterprise's written procedures, as amended, were still inadequate to ensure safe operation of the pipeline system. Specifically, the Region noted that the revised procedures did not adequately address spiral seam pipe since Sections 3.2 and 3.3 excepted helically-welded pipe.⁷

In its Supplemental Response, Enterprise stated that STD.8706 REV2.2 "did not take exception to" helically-welded pipe.⁸ Rather, "in order to prevent confusion, it provides exemptions from applying the unavoidable weld seam and bending shoe positioning requirements to helically-welded pipe when those requirements are specifically applicable to longitudinally welded pipe."⁹ Enterprise contended that these amended procedures were consistent with industry standards in ASME B31.4 and ASME B31.8, and therefore comply with § 195.202.

49 C.F.R. §195.202 requires that each pipeline system be constructed in accordance with comprehensive written specifications or standards that are consistent with the requirements of Part 195. The construction of the Rancho Pipeline involved spiral seam pipe that required bending; therefore, Enterprise was required to construct the line in accordance with written specifications and standards for bending spiral seam pipe consistent with Part 195. There are several specifications and standards governing bending of pipe, including: (1) ASME International (ASME) B31.4 *Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids* (2006); and (2) ASME B31.8 *Gas Transmission and Distribution Piping Systems* (2007).¹⁰ While these standards are not incorporated by reference into Part 195, Respondent cited to them as evidence that its procedures are consistent with such standards. Further, Part 195 includes regulations for bending pipe in §195.212. I will address each one separately below.

⁶ Enterprise explained that STD.8706 REV2.2, Section 3.3(4) addressed position of bending shoes, stating that "[t]he contractor shall use a consistent method of measurement when both marking the pipe in preparation for bending and in subsequent post-bending inspections" and Section 3.4(4) addressed whether shoes can press on the spiral-weld seam, noting that "[t]he bending operations shall be inspected to verify that the minimum allowable radius of the bend is not exceeded and that there is no wrinkling or excessive flattening of the pipe." Finally, Section 3.6(2) discusses test bends, stating that "[t]he Company Project Manager may request that prototype bends are made and tested to ensure that a particular field bending procedure produces bends meeting the material property requirements." *Id.*

⁷ See Email from Region to Operator (Sept. 26, 2019) (on file with PHMSA) (noting that STD.8706 REV2.2, Section 3.2(3) states that "[h]elically welded pipe is an exception to this weld seam position requirement," and Section 3.3(4) states that "[h]elically welded pipe is an exception to this bending shoe positioning requirement").

⁸ Supplemental Response, at 1.

⁹ *Id.*

¹⁰ Other standards, including NACE International (NACE) MR0175 *Standard Material Requirements- Sulfide Stress Cracking Resistant Metallic Materials for Oilfield Equipment* (2009), also discuss bending of pipe. However, for purposes of brevity, additional standards are not discussed here.

First, Respondent cited to the specifications for bending pipe in ASME B31.4, which are set forth in Section 434.7.1 *Bends Made From Pipe*. That section includes five subparts, only one of which specifically addresses longitudinal seams.¹¹ The remaining four subparts do not specify seam type and instead provide general requirements. Second, the specifications for bending pipe in ASME B31.8 are set forth in Section 841.231. That section discusses maximum degrees of bending, appropriate wall thickness after bending, and other restrictions on bending of pipe, but does not specify seam type.

Finally, the regulations governing bending pipe in Part 195 are set forth in §195.212. Except for §195.212(b)(3) which is specific to longitudinal weld pipe,¹² §195.212 is silent on seam type. Therefore, because industry standards and regulations on bending pipe do not specify seam type for each bending requirement, and instead only call out those specific to longitudinal seams, I do not find it to be inconsistent that STD.8706 REV2.2 similarly does not specify seam types, unless specifically noted. Enterprise's written specifications are not excluding helically-welded pipe; instead, they simply have certain requirements for longitudinal-seam pipe that do not apply to helical-seam pipe. Despite this, given the unique safety concerns involving bending spiral-seam pipe,¹³ Enterprise must amend its procedures to include a section clarifying the applicability and scope of its field bending and alignment procedures with regard to seam type at the beginning of STD.8706 REV2.2, Section 3.¹⁴

In her Region Recommendation, the Director also noted that several of Enterprise's procedures on bending pipe provide the Company Project Manager broad discretion in determining applicability of the procedures.¹⁵ For example, Section 3.3(5) states that “[a]n internal bending mandrel will be used when bending welded pipe *unless approved by the Company Project Manager*” (emphasis added). Although providing flexibility to address unique circumstances is important, written procedures should specify, to the extent practicable, the conditions under which deviation is allowable. Therefore, Enterprise must further amend its procedures to explain when deviation is permissible by the Company Project Manager or other personnel. Further, Enterprise should document the reasons why the Company Project Manager chose to deviate from the written procedures, and should consider having this decision reviewable by his/her supervisor prior to implementation.

¹¹ Section 434.7.1(e) states that “[w]hen bends are made in longitudinally welded pipe, the longitudinal weld should be located on or near the neutral axis of the bend.”

¹² Specifically, §195.212(b)(3) requires that pipe containing a longitudinal weld, the longitudinal weld must be as near as practicable to the neutral axis of the bend unless - (i) The bend is made with an internal bending mandrel; or (ii) The pipe is 12 3/4 in (324 mm) or less nominal outside diameter or has a diameter to wall thickness ratio less than 70.

¹³ Spiral-weld pipe presents unique issues because the configuration of the weld does not allow for the seam to be in a purely neutral position in the bending machine, making it important for the operator to use specifications designed to ensure safe bending.

¹⁴ Enterprise may wish to consider adding a new section to STD.8706 REV2.2 that specifically addresses helically-welded pipe.

¹⁵ Region Recommendation, at 2-3.

Accordingly, I find that Enterprise's procedures are inadequate to ensure safe operation of its pipeline system. Pursuant to 49 U.S.C. § 60108(a) and 49 C.F.R. § 190.206, Enterprise is ordered to make revisions to its procedures to address the adequacies noted above within 60 days of the issuance of the Order Directing Amendment.

The Director may grant an extension of time to comply with any of the required items upon a written request timely submitted by the Respondent and demonstrating good cause for an extension.

Failure to comply with this Order may result in administrative assessment of civil penalties not to exceed \$213,268, as adjusted for inflation (49 C.F.R. § 190.223), for each violation for each day the violation continues or in referral to the Attorney General for appropriate relief in a district court of the United States.

Under 49 C.F.R. § 190.243, Respondent may submit a Petition for Reconsideration of this Amended Order Directing Amendment to the Associate Administrator, Office of Pipeline Safety, PHMSA, 1200 New Jersey Avenue, SE, East Building, 2nd Floor, Washington, DC 20590, with a copy sent to the Office of Chief Counsel, PHMSA, at the same address, no later than 20 days after receipt of this Order Directing Amendment by Respondent. Any petition submitted must contain a statement of the issue(s) and meet all other requirements of 49 C.F.R. § 190.243. The terms of the order, including corrective action, remain in effect unless the Associate Administrator, upon request, grants a stay.

The terms and conditions of this Order Directing Amendment are effective upon service in accordance with 49 C.F.R. § 190.5.

ALAN KRAMER
MAYBERRY

Digitally signed by ALAN
KRAMER MAYBERRY
Date: 2020.08.07 15:10:15
-04'00'

Alan K. Mayberry
Associate Administrator
for Pipeline Safety

August 11, 2020

Date Issued