

August 8, 2019

Mr. James Holland
President of Pipeline Products
Kinder Morgan, Inc.
1001 Louisiana Street, Suite 1000
Houston, Texas 77002

Re: CPF No. 5-2018-5007S

Dear Mr. Kinder:

Enclosed please find the Safety Order issued by the Pipeline and Hazardous Materials Safety Administration to your subsidiary, Santa Fe Pacific Pipeline Partners, LP (SFPP), in the above-referenced case. It finds that SFPP's El Paso-to-Tucson 12-inch refined products pipeline has a condition or conditions that pose a pipeline integrity risk and specifies actions that SFPP must take to ensure that the public, property, and the environment are protected from such risk. When the terms of the order have been completed, as determined by the Director, Western Region, this enforcement action will be closed. Your receipt of the Safety Order constitutes service of the document as provided under 49 C.F.R. § 190.5.

Thank you for your cooperation in this matter.

Sincerely,

Alan K. Mayberry
Associate Administrator
for Pipeline Safety

Enclosure

cc: Mr. Dustin Hubbard, Director, Western Region, Office of Pipeline Safety, PHMSA
Mr. Wayne Simmons, Chief Operating Officer, Products Pipeline, Kinder Morgan, Inc.
1001 Louisiana Street, Suite 1000, Houston, Texas 77002
Mr. Edward A. "Buzz" Fant, Director, Compliance, Codes and Standards, Products
Pipeline, Kinder Morgan Energy Partners, 1001 Louisiana Street, Suite 1000, Houston,
Texas 77002
Ms. Nancy Van Burgel, Assistant General Counsel, Kinder Morgan Inc., 370 Van
Gordon Street, Lakewood, Colorado 80228

CERTIFIED MAIL - RETURN 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)

Santa Fe Pacific Pipeline Partners, LP,)
a subsidiary of Kinder Morgan Inc.,)

Respondent.)

CPF No. 5-2018-5007S

SAFETY ORDER

Pursuant to Chapter 601 of Title 49, United States Code, the Pipeline and Hazardous Materials Safety Administration (PHMSA), U.S. Department of Transportation, initiated an investigation and information review of the safety of Santa Fe Pacific Pipeline Partners, LP's (SFPP), 12-inch-diameter El Paso-to-Tucson (12-inch EPT) pipeline. SFPP is a subsidiary of Kinder Morgan Energy Partners, LP.¹ The investigation was initiated following a gasoline release in Dona Ana County, near Anthony, New Mexico. The pipeline ruptured and an initially-reported release volume of 6,000 barrels of gasoline was discharged into a drainage ditch at approximately 2348 MST on December 13, 2018 (Failure).²

As a result of the investigation, and pursuant to 49 U.S.C. § 60117(l), the Director, Western Region, OPS (Director)³, issued a Notice of Proposed Safety Order (Notice) to Kinder Morgan Inc. (KMI or Respondent)⁴ on December 28, 2018, alleging that the 12-inch EPT Pipeline had a condition or conditions that posed a pipeline integrity risk to public safety, property, or the environment related to the Failure. The Notice alleged facts and circumstances that supported the issuance of a Safety Order for the 12-inch EPT Pipeline or a portion thereof and proposed that KMI's SFPP take necessary corrective actions, including a pressure reduction to provide an additional level of safety while the corrective actions were being completed.

On January 22, 2019, KMI responded to the Notice (Response). In the Response, KMI neither

¹ Kinder Morgan Energy Partners, LP, transports crude oil, refined petroleum products, and highly volatile liquids through more than 9,000 miles of pipelines in the United States. See https://www.kindermorgan.com/pages/business/products_pipelines/ (last accessed June 16, 2019).

² As discussed below, the volume of the release was updated to 11,000 barrels.

³At the time of the Failure, Western Region had an Acting Director with the permanent Director position yet to be filled.

⁴ Kinder Morgan Energy Partners, LP, is a wholly-owned subsidiary of KMI.

contested the proposed findings or remedial requirements contained in the Notice nor requested an informal consultation under 49 C.F.R. § 190.239(b)(2), but provided an update on the work it was in the process of completing or had completed to date to ensure the safe operation of the 12-inch EPT Pipeline. Additionally, Respondent did not request a hearing and therefore has waived its right to one. For the reasons stated below, I find continued operation of the 12-inch EPT Pipeline without corrective measures would pose a pipeline integrity risk to public safety, property, or the environment. PHMSA hereby issues this Safety Order.

FINDING OF PIPELINE INTEGRITY RISK

Respondent did not contest the preliminary findings in the Notice that the 12-inch EPT Pipeline has a condition or conditions that pose a pipeline integrity risk. Accordingly, pursuant to 49 U.S.C. § 60117(1) and 49 C.F.R. § 190.239, I find as follows:

- On December 14, 2018, at 0258 MST, KMI notified the National Response Center (NRC) of a release of gasoline from its 12-inch EPT Pipeline (LS-18) near Anthony, New Mexico. PHMSA deployed two investigators to the scene of the accident and PHMSA personnel were on-site from December 15, 2018, through December 21, 2018.
- The Affected Segment is the 288-mile-long 12-inch EPT Pipeline, which delivers refined petroleum products westward from KMI's El Paso Tank Farm to the company's Tucson, Arizona products terminal.⁵
- Initial estimates by KMI to the NRC reported (NRC Reports # 1232949 and #1232959) a release of 6,000 barrels of gasoline from the 12-inch EPT Pipeline. The volume of released product was last updated in the Accident Report submitted to PHMSA (Form PHMSA F 7000.1) on March 25, 2019, to approximately 11,000 barrels. The release was in a north-south trending drainage ditch located to the east and parallel to 3 Saints Road in Dona Ana County, New Mexico (Failure Site). The ditch appears to discharge eventually into the Rio Grande River; however, the drainage ditch was dry at the time of the release and no gasoline entered the river or any environmentally sensitive areas.
- The ruptured, east-west flowing 12-inch EPT Pipeline section was exposed at the bottom of an Elephant Butte Irrigation District (EBID) drainage ditch for approximately 25 feet. Specifically, the upper half of the 12-inch EPT line was exposed to the atmosphere for the entire width of the ditch. A second 8-inch-diameter SFPP pipeline lies parallel to the 12-inch EPT Pipeline and was also visible at the bottom of the ditch. KMI reported the 8-inch line to be purged and filled with inert nitrogen. A third, more recently installed, 16-inch-diameter KMI pipeline is in the same right-of-way, carries refined product, and is bored under the drainage ditch.

⁵ For the purposes of this Safety Order, the term "Affected Segment" means the entire SFPP 12-inch EPT Pipeline running from El Paso, Texas, to Tucson, Arizona, a distance of approximately 288 miles. The pipeline includes SFPP-designated line sections (LSs) generally known as LS-17 (portion west of the El Paso Breakout Tank Pump Station), LS-18 (failed segment), LS-19, LS-21, and LS-22.

- The 12-inch EPT Pipeline consists of 1964-vintage steel pipe manufactured by US Steel. The pipe is constructed of 0.188-inch-thick, rolled X-52 steel joined by high-frequency electric resistance welded (HF-ERW) longitudinal pipe seams.
- The pipeline utilizes an impressed cathodic protection system to guard against external corrosion. A corrosion-control rectifier was located immediately to the northeast of the Failure Site. However, because the exposed pipeline that failed was in an above-ground span that crossed an irrigation ditch, it could not be fully protected from corrosion by the impressed current corrosion control system despite its proximity to a rectifier.
- The pipe coating at the Failure Site appears to be a tape wrap coat; however, the specific coating manufacturer is unknown. The portion of the coating exposed to the atmosphere and in the partially-buried pipeline segment appeared to be degraded and disbonded from the steel pipe. This poor coating condition could have led to the creation of a corrosive environment or inhibited the effectiveness of the impressed cathodic protection system.
- The release occurred from a longitudinal split approximately 22 to 24 inches long, located at the 5:30 o'clock position (looking downstream) of the pipe. The split appeared to be concurrent with an area of general external corrosion and the failure edges exhibited areas of pipe-wall thinning. The black-colored tape wrap was not adhered well to the pipe, i.e., it appeared to be "disbonded." Part of the circumference of the pipe opposite the split appeared to have been painted yellow where it had originally been exposed to the atmosphere.
- An inline inspection (ILI) survey of the 12-inch EPT Pipeline was conducted in 2010 and again in 2015, utilizing a high-resolution magnetic flux tool to detect metal loss. Deformation ILI surveys were conducted at the same time as the 2010 and 2015 ILI metal loss surveys.
- There were two previous repairs made immediately east of the rupture location and in the same drainage ditch as the failure. They were reported by KMI to be two "ClockSpring®" wraps applied in 2011 over dents detected by KMI's 2010 ILI survey. These two repairs were conducted to (1) confirm the condition of a previously "undocumented" dent repair, and (2) repair a dent close to the undocumented repair.
- The 2015 ILI survey noted external corrosion anomalies ranging from 13 to 17 percent in total wall thickness loss in the immediate vicinity of the rupture location. Preliminary visual examination of the failed pipe segment, however, indicates wall thinning in the rupture area of the pipe. This overt thinning may indicate rapid external corrosion after the 2015 ILI metal loss tool was run and resulting data analyzed.
- While there was no fire, injuries or fatalities resulting from the release, local emergency officials required the evacuation of three residences in the area. An "Unusually Sensitive Area" (USA), as defined by 49 C.F.R. § 195.6, and agricultural fields are located immediately to the west of 3 Saints Road, as is the Rio Grande River, approximately one mile away.

- While the Failure Site is not located directly in a USA, the release occurred on a segment that “could affect” a USA, should water be flowing in the drainage ditch. Review of the PHMSA National Pipeline Mapping System (NPMS) indicates the 12-inch EPT Pipeline traverses or is located within proximity to numerous High Consequence Areas (HCAs), including USAs. There are numerous portions of the EPT Pipeline system that could affect an HCA, as defined by 49 C.F.R. § 195.450.
- The mainline valves on both sides of the Failure Site are manually-operated valves (MOVs) and are near the same elevation as the drainage ditch. The topography of the area indicates that the pipeline descends approximately 900 vertical feet from the east downwards and towards the Failure Site. Much smaller elevation changes occur between the MOV to the west and the Failure Site. PHMSA anticipates that a large percentage of the released volume of gasoline was a result of the pipeline draining down from the higher areas to the east. (Note: The 12-inch-diameter pipeline contains approximately 785 barrels of line fill per mile of length).
- This line provides refined products to Tucson, Arizona, and other State of Arizona petroleum markets.
- The PHMSA investigation is ongoing and the causal factors of the Failure are unknown at this time.

ISSUANCE OF SAFETY ORDER

Section 60117(l) of Title 49, United States Code, provides for the issuance of a safety order, after reasonable notice and the opportunity for a hearing, requiring corrective measures, which may include physical inspection, testing, repair, or other action, as appropriate. The basis for making the determination that a pipeline facility has a condition or conditions that pose a pipeline integrity risk to public safety, property, or the environment is set forth both in the above-referenced statute and 49 C.F.R. § 190.239.

After evaluating the foregoing findings and considering the aggressive external corrosion in exposed pipeline areas and exhibited areas of pipe-wall thinning; the degraded tape wrap coating or ineffective cathodic protection; the potential rate of corrosion exceeding maximum time intervals allowed by 49 C.F.R. Part 195; the location of the Failure Site, including its proximity to numerous HCAs, rivers, streams, and other pathways to water; the hazardous nature of the material transported; and the investigation to determine the cause of the failure, I find that the 12-inch EPT Pipeline has a condition or conditions that pose a pipeline integrity risk to public safety, property, or the environment. Accordingly, PHMSA issues this Safety Order, which requires that Respondent take measures specified below to address the risk.

CORRECTIVE MEASURES

The Notice proposed certain corrective measures with respect to the Affected Segment. As described below, KMI has completed certain actions relating to Items 1, 3, 4, 5, 6, 7 and 11. As

for the remaining compliance terms, pursuant to 49 U.S.C. § 60117(1) and 49 C.F.R. § 190.239, KMI must take the following remedial requirements with respect to the Affected Segment:

1. ***Pressure Restriction.*** Continue to maintain a pressure restriction of 80 percent of the operating pressure at the time of the accident for the 12-inch EPT Pipeline sections designated LS-17 (6.56 miles) and LS-18 (85.69 mile). LS-17 and LS-18 are located between the SFPP El Paso, Texas Breakout Tank Farm and the Deming, New Mexico pump station.
2. ***Removal of Pressure Restriction.*** The Director may allow the removal or modification of the pressure restriction described above upon a written request from Respondent demonstrating that restoring the 12-inch EPT Pipeline to its pre-failure operating pressure is justified, based on a reliable engineering analysis showing that the pressure increase is safe, considering all known defects, anomalies, and operating parameters of the pipeline. The Director's determination will be based on the information provided by the ongoing failure investigation, including the metallurgical testing results mandated in Item 3 below.
3. ***Mechanical, Metallurgical and other Testing.*** On March 4, 2019, KMI issued a final metallurgical report, which PHMSA is currently reviewing. Until the Director determines this item has been completed, the terms of this order are as follows. Within 60 days of receipt of this Safety Order, Respondent must complete mechanical, coating, and metallurgical testing of the failed pipe segment by a third party independent testing laboratory. Additionally, the Respondent must complete in-situ soil testing. The results must be summarized in a written analysis. Testing and analysis requirements are as follows:
 - a. Document the chain-of-custody when handling and transporting the failed pipe section and other evidence from the Failure Site;
 - b. Utilize the testing protocol provided by PHMSA;
 - c. Prior to beginning the mechanical and metallurgical testing, provide the Director with the scheduled date, time, and location of the testing to allow for an OPS representative to witness the testing; and
 - d. Ensure that the testing laboratory distributes all reports, whether draft or final, in their entirety to the Director at the same time they are made available to Respondent.
4. ***Use of Appropriate ILI Tool.*** KMI completed ILI surveys in February 2019. While the ILI surveys were conducted utilizing a high resolution Magnetic Flux Leakage tool coupled with a deformation tool prior to completing the metallurgical failure analyses, KMI has shown these were the correct tools to assess similar pipe conditions that caused the failure. Accordingly, KMI has completed the requirements of this item.

5. ***Immediate-Repair Conditions.*** KMI has confirmed that there were no “immediate repair-conditions” identified by the ILI that met the proposed repair criteria and that all the other immediate repair conditions as defined by § 195.452(h) have been repaired. Accordingly, KMI has completed the requirements of this item.
6. ***Survey of Exposed Pipeline Crossings.*** KMI completed a survey of exposed crossings and identified 18 sites for further review. Resolution of the exposed pipe areas by KMI per Corrective Measures 1 and 2 are under review by PHMSA. Until the Director determines this item has been completed, the terms of this order are as follows. Complete a survey of all exposed pipeline crossings of the 12-inch EPT Pipeline within 90 days of receipt of this Safety Order, and identify any segments where the existing coating is 1) not appropriate for above-ground use, and 2) in areas where the pipeline segment should be lowered to provide external-damage protection and cathodic protection.
7. ***Updated Emergency Flow Restricting Devices (EFRD) Study.*** KMI provided an EFRD analysis to PHMSA in April 2019. PHMSA is currently evaluating the submittal. Until the Director determines this item has been completed, the terms of this order are as follows. Complete and submit within 120 days of receipt of this Safety Order an updated EFRD study (per § 195.452(i)(4)) for areas where a spill from the 12-inch EPT Pipeline could affect an HCA (as defined by § 195.450). The revised EFRD study shall identify where existing valves can be remotely actuated so that closure of a mainline valve to isolate the pipeline can commence within 15 minutes of a confirmed rupture.
8. ***Root Cause Failure Analysis.*** Within 180 days following receipt of this Safety Order, complete a root cause failure analysis (RCFA) and submit a final report of the RCFA to the Director. The RCFA must document the decision-making processes and all factors contributing to the Failure, including all findings revealed from Corrective Measures 3, 4, 6, and 7 above. The final report must include findings and lessons learned. The RCFA must also include a discussion of whether the findings and lessons learned are applicable to other locations within the 12-inch EPT Pipeline system.
9. ***Remedial Work Plan.*** Within 45 days following receipt of the Root Cause Failure Report, Respondent must submit a Remedial Work Plan (RWP) to the Director for approval. The Director may approve the RWP incrementally without approving the entire RWP. Once approved by the Director, the RWP will be incorporated by reference into this Safety Order. The RWP must:
 - a) Specify the tests, inspections, assessments, evaluations, and remedial measures Respondent will use to verify the integrity of the 12-inch EPT Pipeline. It must address all known or suspected factors and causes of the Failure. Respondent should consider both the risk and consequence of another failure to develop a prioritized schedule for RWP-related work along the Affected Segment;

- b) A schedule to assess and remediate any pipeline anomalies where metal loss exceeds the criteria of § 195.452(h), and are not immediate repairs, as defined in Corrective Measure 5;
 - c) An implementation schedule to recoat any exposed pipeline crossing where there is degraded coating or the coating is not appropriate for protection the pipeline against atmospheric corrosion; and
 - d) Integrate the results of the metallurgical testing, root cause failure analysis, and other corrective actions required by this Safety Order with all relevant pre-existing operational and assessment data for the 12-inch EPT Pipeline. Pre-existing operational data includes, but is not limited to, construction, operations, maintenance, testing, repairs, and prior metallurgical analyses. Pre-existing assessment data includes, but is not limited to, in-line inspection (ILI) tool runs, hydrostatic pressure testing, direct assessments, atmospheric corrosion surveys, exposed crossing surveys, close interval surveys, and DCVG/ACVG surveys.
10. **Revisions to the RWP.** Revise the RWP as necessary to incorporate new information obtained during the implementation of the RWP as approved the Director.
11. **Quarterly Reports.** Continue to submit quarterly reports to the Director that: (1) include available data and results of the testing and evaluations required by this Safety Order; and (2) describe the progress of the repairs and other remedial actions being undertaken.

With respect to each submission under this Safety Order that requires the approval of the Director, the Director may: (a) approve, in whole or part, the submission; (b) approve the submission on specified conditions; (c) modify the submission to cure any deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondent modify the submission; or (e) any combination of the above. In the event of approval, approval upon conditions, or modification by the Director, Respondent shall take all required actions in the submission as approved or modified by the Director. If the Director disapproves all or any portion of the submission, Respondent shall correct all deficiencies within the time specified by the Director, and resubmit it for approval. If a resubmitted item is disapproved in whole or in part, the Director may again require Respondent to correct the deficiencies in accordance with the foregoing procedure, and the Director may otherwise proceed to enforce the terms of this Safety Order.

It is requested (not mandated) that Respondent maintain documentation of the safety improvement costs associated with fulfilling this Safety Order and submit the total to the Director. 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.

The Director may grant an extension of time for compliance with any of the terms of this Safety Order upon a written request timely submitted demonstrating good cause for an extension. KMI may appeal any decision of the Director to the Associate Administrator for Pipeline

Safety. Decisions of the Associate Administrator shall be final.

In your correspondence on this matter, please refer to CPF No. 5-2018-5007S and for each document you submit, please provide a copy in electronic format whenever possible.

Be advised that all materials 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).

The actions taken pursuant to this Safety Order are in addition to and do not waive any requirements that apply to Respondent's pipeline system under 49 C.F.R. Parts 190 through 199, under any other order issued to Respondent under authority of 49 U.S.C. Chapter 601, or under any other provision of Federal or state law.

After receiving and analyzing additional data in the course of this proceeding and implementation of the required tests and analysis, PHMSA may identify other safety measures that need to be taken. In that event, Respondent will be notified of any proposed additional measures and, if necessary, amendments to the Safety Order.

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

August 8, 2019

Alan K. Mayberry
Associate Administrator
for Pipeline Safety

Date Issued