



U.S. Department
of Transportation

Pipeline and Hazardous Materials
Safety Administration

1200 New Jersey Ave., SE
Washington, DC 20590

November 5, 2019

VIA CERTIFIED MAIL AND FAX TO: (403) 920-2200

Mr. Russell K. Girling
President and Chief Executive Officer
TC Energy Corporation
450 1st Street, S.W.
Calgary, Alberta T2P 5H1

CPF No. 3-2019-5023H

Dear Mr. Girling:

Enclosed is a Corrective Action Order (CAO) issued in the above-referenced case. It finds that continued operation of the company's Keystone 30-inch Phase 1 crude-oil pipeline between the Edinburg and Niagara pump stations near Niagara, North Dakota, is or would be hazardous to life, property, and the environment without immediate corrective actions. The CAO requires TC Energy to take certain corrective actions to protect the public, property, and the environment from a hazardous condition resulting from the pipeline leak initially reported to the National Response Center on October 30, 2019. Service is being made by certified mail and facsimile. Your receipt of this Corrective Action Order constitutes service of that document under 49 C.F.R. § 190.5. The terms and conditions of this Order are effective upon receipt.

We look forward to the successful resolution of the concerns arising out of this accident to ensure the safe operation of this TransCanada facility. Please direct any questions on this matter to Allan Beshore, Region Director, Central Region, OPS, at (816) 329-3811.

Sincerely,

Alan K. Mayberry
Associate Administrator
for Pipeline Safety

for

Enclosure: Corrective Action Order and Copy of 49 C.F.R. § 190.233

cc: Ms. Linda Daugherty, Deputy Associate Administrator for Field Operations, OPS
Mr. Allan Beshore, Director, Central Region, OPS

Mr. Paul Roberti, Chief Counsel, Office of Chief Counsel, PHMSA

Ms. Sonya Kirby, Vice President, Pipeline Safety & Compliance, TC Energy, 450 1st Street, S.W. Calgary, Alberta T2P 5H1

Mr. Erick Hughes, Manager US Regulatory Compliance, TC Energy, 700 Louisiana Street, Houston, Texas 77002

Mr. John Barrett, Regulatory Compliance Specialist, TC Energy, 700 Louisiana Street, Houston, Texas 77002

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

In the Matter of)
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TC Energy Corporation,)

CPF No. 3-2019-5023H

Respondent.)
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CORRECTIVE ACTION ORDER

Purpose and Background:

This Corrective Action Order (Order) is being issued under authority of 49 U.S.C. § 60112 to require TC Energy Corporation (TC or Respondent), to take necessary corrective actions to protect the public, property, and the environment from potential hazards associated with a release from its 30-inch crude oil transmission pipeline near Edinburg, North Dakota (Failure). The Failure occurred on the approximately 41.9-mile pipeline segment referred to as “the Keystone 30-inch Phase 1 Line” that runs between the Edinburg Pump Station and the Niagara Pump Station near Niagara, North Dakota (Affected Segment). The Affected Segment is part of TC’s existing Keystone Pipeline, which is a 2,687-mile hazardous liquid pipeline system between Hardisty, Alberta, Canada and Patoka, Illinois, and Port Arthur, Texas.¹ This Order finds that continued operation of the Affected Segment without corrective action is or would be hazardous to life, property, or the environment and requires Respondent to take immediate action to ensure its safe operation.

On October 30, 2019, TC notified the National Response Center (NRC) of a crude-oil release from its 30-inch pipeline near Edinburg, North Dakota. At approximately 9:52 p.m. CDT on October 29, 2019, the operator’s control room observed the Edinburg Pump Station tripped and shut down. At approximately 9:53 p.m. the control room received two Leak Detection Triggers and at 9:55 p.m. the pump station was closed. A technician was dispatched to the station but due to wind and darkness, the technician could not identify any issues at the pump station, so the individual began driving the right-of-way (ROW). The technician returned to the pump station and conducted another survey when the individual identified crude oil on the ground. Once daylight conditions started, TC found the release site approximately 300 feet downstream (south) of the Edinburg Pump Station. The initial release estimate was 1,001 barrels (42,042 gallons), with a worst-case discharge calculation of 9,120 barrels (383,040 gallons).

Pursuant to 49 U.S.C. § 60117, the Pipeline and Hazardous Materials Safety Administration

¹ TC Energy website, available at <https://www.tcenergy.com/operations/oil-and-liquids/> (last accessed November 4, 2019).

(PHMSA), Office of Pipeline Safety (OPS), initiated an investigation immediately following notice of the incident.

Preliminary Findings:

- TC initially reported the incident to the NRC at 11:20 pm CDT (local time) on October 29, 2019 (NRC Report No. 1262553), indicating the quantity released as 1,001 barrels (42,042 gallons).
- There were no fires, injuries, fatalities or evacuations associated with this accident.
- On October 29, 2019, at approximately 9:52 p.m. CDT the operator's control room observed the Edinburg Pump Station tripped and shut down. At approximately 9:53 p.m. the control room received two Leak Detection Triggers and at 9:55 p.m. the pump station was closed. A technician was dispatched to the station but due to wind and darkness, the technician was unable to identify any issues at the pump station, so the individual began driving the ROW. The technician returned to the station and did another survey, when the technician identified the product on the ground. Once daylight conditions started, TC found the release site approximately 300 feet downstream (south) of the Edinburg Pump Station. The release location is in an open field located in Walsh County, North Dakota, approximately three miles west of the town of Edinburg, North Dakota (Failure Site). The Failure Site is located at Mile Post (MP) 34.3, approximately 300 feet downstream of the Edinburg Pump Station. There are approximately 15 miles between the Edinburg Pump Station upstream of the Failure Site and the nearest block valve downstream of the Failure Site.
- TC plans to remove the pipe from the Failure Site and ship it to an independent third-party metallurgical laboratory approved by PHMSA for testing. TC will document the chain-of-custody of the pipe and any additional evidence that is removed from the Failure Site and transported to the metallurgical laboratory.
- The Keystone Pipeline moves crude oil from Hardisty, Alberta, Canada to Patoka, Illinois, and to Port Arthur, Texas. This 30-inch Phase 1 portion of the system consists of a 1,082-mile-long pipeline, 23 pump stations, a terminal facility in Patoka, Illinois, and related facilities that start at the Canadian Border in North Dakota and traverse the midwestern states of South Dakota, Nebraska, Kansas and Missouri, terminating in Patoka, Illinois. It was constructed from June 2008 until March 2010.
- The specific pipeline section that failed was installed in 2008 as part of Spread 1A. Henkels & McCoy, Inc. was the contractor on this spread. The pipe is 30 inches in diameter and constructed of API 5L X-70 line pipe manufactured by Berg Steel Pipe Corporation. The pipe has a double-submerged arc welded (DSAW) longitudinal seam and is coated with a fusion bond epoxy coating.
- PHMSA issued a special permit to TC for construction and operation of the Keystone Pipeline on April 30, 2007, allowing the pipeline to be operated at a stress level of 80

percent of the steel pipe's specified minimum yield strength (SMYS), as opposed to the normal operating pressure for hazardous liquid pipelines of 72 percent of SMYS under 49 CFR 195.106 (Special Permit). The Special Permit contained 51 conditions and was designed to provide for a level of safety equal to, or greater than, the regulations in effect at the time by requiring TC to more closely inspect and monitor the pipeline over its operational life than similar pipelines installed without a special permit. The Special Permit remains in effect for the life of the Keystone Pipeline unless suspended, modified or terminated by PHMSA.

- PHMSA issued a Corrective Action Order (CPF No. 3-2016-5003H) to TC on April 9, 2016, due to a leak in a cracked tie-in weld. This Order was closed on March 30, 2017, after TC had completed all the required corrective actions.
- PHMSA issued a Corrective Action Order (CPF No. 3-2017-5008H) to TC on November 28, 2017, due to a fracture that initiated at an area of previous mechanical damage. This Order was closed on January 29, 2019, after TC completed all of the required corrective actions.
- Keystone Pipeline traverses several High Consequence Areas (HCA), as defined under 49 C.F.R. § 195.450, and navigable rivers. There were no HCAs or unusually sensitive areas, as defined under § 195.6, at the release site.
- Removal of crude oil from the spill area in underway.
- The PHMSA failure investigation is on-going and information could change. This order may be amended based on further findings during the investigation.

Determination of Necessity for Corrective Action Order and Right to Hearing:

Section 60112 of Title 49, United States Code, provides for the issuance of a Corrective Action Order requiring corrective action, which may include the suspended or restricted use of a pipeline facility, physical inspection, testing, repair, replacement, or other action, as appropriate. The basis for making the determination that a pipeline facility is hazardous and requiring corrective action is set forth both in the above-referenced statute and 49 C.F.R. § 190.233, a copy of which is enclosed.

Section 60112 and the regulations promulgated thereunder provide for the issuance of a Corrective Action Order without prior opportunity for notice and hearing, upon a finding that failure to issue the Order expeditiously will likely result in serious harm to life, property or the environment. In such cases, an opportunity for a hearing will be provided as soon as practicable after the issuance of the Order.

After evaluating the foregoing preliminary findings of fact, I find that the continued operation of the Affected Segment without corrective measures is or would be hazardous to life, property and the environment. Furthermore, after considering the age of the pipe, the circumstances surrounding the Failure, the hazardous nature of the product being transported, the pressure required for transporting the material, the other recent failures of the Keystone Pipeline in April

2016 and November 2017, the unusual characteristics of the pipe and other equipment used in the Keystone Pipeline and the associated Special Permit issued to ensure its safety, the uncertainties as to the cause of the Failure and the ongoing investigation to determine its cause, I find that a failure to issue this Order expeditiously to require immediate corrective action would result in likely serious harm to life, property, and the environment.

Accordingly, this Corrective Action Order mandating immediate corrective action is issued without prior notice and opportunity for a hearing. The terms and conditions of this Order are effective upon receipt.

Within 10 days of receipt of this Order, Respondent may request a hearing pursuant to 49 C.F.R. § 190.233, to be held as soon as practicable, by notifying the Associate Administrator for Pipeline Safety in writing, with a copy to the Director, Central Region, PHMSA (Director). If a hearing is requested, it will be held telephonically or in-person in Kansas City, Missouri.

After receiving and analyzing additional data in the course of this investigation, PHMSA may identify other corrective measures that need to be taken. Respondent will be notified of any additional measures required and amendment of this Order will be considered. To the extent consistent with safety, Respondent will be afforded notice and an opportunity for a hearing prior to the imposition of any additional corrective measures.

Required Corrective Actions:

Pursuant to 49 U.S.C. 60112, I hereby order TC to immediately take the following corrective actions with respect to the Affected Segment:

1. ***Shutdown of the Affected Segment.*** The 30" Keystone Pipeline from the Edinburg Pump Station (MP 34.3) to the Niagara Pump Station (MP 76.2), defined above as the Affected Segment, is currently out of service and must remain shut down until its restart in accordance with this Order.
2. ***Restart and Return-to-Service Plan.*** The Respondent must develop a restart and return-to-service plan and submit the plan to the Director prior restarting the Affected Segment. The plan must specify any appropriate pressure restriction to ensure safety of the Affected Segment.
3. ***Testing of Failed Pipeline Section.*** Respondent must deliver the failed section of pipe to an independent third-party laboratory approved by the Director for metallurgical analysis and testing as soon as possible. Chain-of-custody must be documented by Respondent when handling and transporting the failed pipe section and other evidence from the Failure Site. TC must provide PHMSA with the opportunity to have a representative be present for the cut out and transfer of the failed pipeline section for transportation to the metallurgical laboratory, as well as any metallurgical testing performed, regardless of location.
4. ***Remedial Work Plan.*** Within 120 days following receipt of this Order, TC must submit a Remedial Work Plan (RWP) to the Director for approval. The RWP must provide for

the verification of the integrity of the Affected Segment and must address all factors known or suspected in the Failure, including, but not be limited to, the following:

- a. A review of records for the entire construction of Spread 1A, in-line inspection reports, and any other data pertinent to the analysis of the failed pipe;
 - b. All information gained through a history review of the pipeline, operational experience, the failure investigation, the root cause analysis, and the two previous failures that occurred in 2016 and 2017; and
 - c. An integration, conducted and documented in accordance with sound engineering principles, of the information gathered and analyzed in items 4(a) and 4(b), and implemented into an RWP designed to prevent reoccurrence:
5. **Removal of Pressure Restriction.** The Director may allow the removal or modification of any approved pressure restriction that is part of the restart and return-to-service plan. TC must demonstrate that the removal or modification of the pressure restriction, or restoring the 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 Keystone Pipeline.
6. **Root Cause Failure Analysis.** Within 90 days following receipt of the metallurgical analysis from the metallurgical laboratory, TC must complete a root cause failure analysis (RCFA) that is facilitated and validated by an independent third party vendor acceptable to the Director. The RCFA must document the decision-making process used in the analysis and all factors contributing to the Failure. The final report must include findings and any lessons learned and whether the findings and any lessons learned are applicable to other locations on the Keystone Pipeline. TC must submit a final RCFA report to the Director.
7. **Order Revisions.** Upon approval by the Director, the RWP, including any subsequent revisions approved by the Director, is automatically incorporated into this Order. The RWP must be revised as necessary to incorporate the results of actions undertaken pursuant to this Order and, whenever necessary, to incorporate new information obtained during the failure investigation and remedial activities. TC must submit any such plan revisions to the Director for prior approval. The Director may approve plan elements incrementally.
8. **Implementation of Approved Work Plan.** TC must implement the RWP as approved by the Director, including any revisions to the plan, according to the timelines set forth in the RWP.
9. **Quarterly Reports.** TC must submit quarterly reports to the Director that:
 - a. Include all available data and results of the testing and evaluations required by this Order; and
 - b. Describe the progress of the repairs or other remedial actions being undertaken under this Order. The first quarterly report shall cover the period from October 29, 2019 through December 31, 2019, and shall be submitted to the Director by

January 15, 2020. Subsequent quarterly reports shall cover a 3-month period and be submitted on 15th day of April, July, October, and January.

The Director may grant an extension of time for compliance with any of the terms of this Order upon a written request timely submitted demonstrating good cause for an extension.

With respect to each submission under this 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 proceed to take all action required by 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 Order.

Be advised that all material submitted in response to this enforcement action is subject to being made publicly available. If the Respondent believes that any portion of its responsive material qualifies for confidential treatment under 5 U.S.C. § 552(b), along with the complete original document, the Respondent must provide a second copy of the document with the portions the Respondent believes qualify for confidential treatment redacted and an explanation of why the redacted information qualifies for confidential treatment under 5 U.S.C. § 552(b).

If the company responds on this matter, please refer to "CPF No. 3-2019-5023H" and for each document the company submits, please provide a copy in electronic format whenever possible. The actions required by this Order are in addition to and do not waive any requirements that apply to the Keystone Pipeline under 49 C.F.R. Parts 190 through 199, the Special Permit, 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.

TC may appeal any decision of the Director to the Associate Administrator for Pipeline Safety. Decisions of the Associate Administrator shall be final.

Failure to comply with this Order may result in the assessment of civil penalties and in referral to the Attorney General for appropriate relief in United States District Court pursuant to 49 U.S.C. § 60120.

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

A handwritten signature in blue ink, appearing to read "A. Mayberry for", is written over a horizontal line.

Alan K. Mayberry
Associate Administrator
for Pipeline Safety

November 5, 2019

Date Issued