

VIA ELECTRONIC MAIL TO: jblount@colpipe.com; mpiazza@colpipe.com

March 29, 2021

Mr. Joseph Blount
President, Chief Executive Officer
Colonial Pipeline Company
1185 Sanctuary Parkway
Suite 100
Alpharetta, GA 30009-4765

CPF No. 2-2021-005-NOPSO

Dear Mr. Blount:

Enclosed is a Notice of Proposed Safety Order (Notice) issued in the above-referenced case. The Notice proposes that Colonial Pipeline Company take certain measures with respect to the Colonial Pipeline System to ensure pipeline safety. Your options for responding are set forth in the Notice. Service of this Notice by electronic mail is deemed effective upon the date of transmission, or as otherwise provided under 49 C.F.R. § 190.5.

We look forward to a successful resolution to ensure pipeline safety. Please direct any questions on this matter to me at (404) 832-1150.

Sincerely,

James Urisko
Director, Southern Region
Pipeline and Hazardous Materials Safety Administration

Enclosure: Notice of Proposed Safety Order
Copy of 49 C.F.R. § 190.239

Cc: Ms. Linda Daugherty, Deputy Associate Administrator for Field Operations, OPS
Mr. Mark Piazza, Manager, Pipeline Compliance and R&D, Colonial Pipeline Company

**DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
SOUTHERN REGION
ATLANTA, GEORGIA**

| | | |
|----------------------------|---|--------------------------|
| In the Matter of |) | |
| Colonial Pipeline Company, |) | CPF No. 2-2021-005-NOPSO |
| Respondent |) | |
| |) | |

NOTICE OF PROPOSED SAFETY ORDER

Introduction and Purpose

This Notice of Proposed Safety Order (NOPSO or Notice) is being issued by the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), under the authority of 49 U.S.C. § 60117. Pursuant to § 60117, PHMSA initiated an investigation of the safety of Colonial Pipeline Company’s (Colonial or the company) Pipeline System following a gasoline release in Huntersville, North Carolina on August 14, 2020 (Failure).¹

PHMSA’s ongoing investigation indicates that conditions may exist on the Colonial Pipeline System that pose a pipeline integrity risk to public safety, property or the environment. The conditions that led to the Failure potentially exist throughout the Colonial Pipeline System. Further, Colonial’s inability to effectively detect and respond to this release, as well as other past releases, has potentially exacerbated the impacts of this and numerous other failures over the operational history of Colonial’s entire system. After evaluating the preliminary findings of fact described below and considering the characteristics of the Colonial Pipeline System, as well as the failure history of that system, it appears that the continued operation of the Colonial Pipeline System without corrective measures would pose a pipeline integrity risk to public safety, property, or the environment.

This NOPSO notifies Colonial of the preliminary findings of the investigation, and proposes that Colonial take measures to ensure that the public, property, and the environment are protected from the potential risk.

¹ Colonial became aware of the release on August 14, 2020, however, the first day of the release is unknown.

Background

On August 14, 2020 at 18:20 ET, a Colonial employee was notified by a local resident of a possible leak in Colonial's right-of-way (ROW), approximately 100 feet north (downstream) of Huntersville-Concord Road in Huntersville, North Carolina. Upon inspection, a Colonial employee confirmed a product release visible at the ground surface at 18:42 ET near Mile Marker 980 that was believed to be gasoline. The Colonial Control Center initiated a shutdown of its pipeline facilities in the area (Lines 1 and 2) at 18:43 ET. The lines were blocked by closing valves upstream of the release location at Colonial's Charlotte Delivery Facility and downstream of the release location at the Kannapolis Station.

At 19:42 ET, Colonial notified the National Response Center (NRC) of the release (NRC Report No. 1284598). Colonial reported the estimated release amount was 75 barrels. Colonial also notified the Charlotte-Mecklenburg Emergency Management Office, the U.S. Environmental Protection Agency, the North Carolina Department of Environmental Quality, and PHMSA.

Colonial identified the leak source to be Line 1 on August 15, 2020 at approximately 12:00 ET. Following confirmation of the leak source, Colonial restarted Line 2 at 12:05 ET the same day. Colonial determined the leak originated from a Type A sleeve repair installed in 2004, originally intended to reinforce and protect a shallow dent identified by an integrity assessment. The leak was repaired on August 19, 2020, by installing a Type B pressure containing sleeve over the prior Type A sleeve repair. Colonial restarted Line 1 on August 19, 2020 at approximately 21:00 ET after repairs were completed.

On September 13, 2020, Colonial submitted an initial accident report (PHMSA Form 7000.1) to PHMSA that updated the estimated release volume to 6,490 barrels of gasoline. On November 10, 2020, Colonial cut out the Type B sleeve and the failed section of pipe and sent them to an independent laboratory for metallurgical analysis. The cut-out and welding of the replacement pipeline tie-in was witnessed by PHMSA. On February 1, 2021, Colonial submitted a supplemental report to PHMSA updating the estimated release volume to 28,571 barrels (1.2 million gallons) of gasoline. Colonial has not provided any other reports to PHMSA regarding the estimated release volume due to the Failure.

Upon identification and confirmation of the release and potential soil contamination, Colonial initiated monitoring and remediation efforts which are ongoing as of the issuance of this Notice.

The preliminary findings of the PHMSA's ongoing investigation are as follows:

Preliminary Findings:

- The Colonial Pipeline System consists of approximately 5,500 miles of hazardous liquid transmission pipeline within the United States, including lateral and spur lines, and fixed facilities (tanks, pump stations, etc.). The system traverses the states of Texas, Louisiana, Mississippi, Alabama, Georgia, North Carolina, South Carolina, Virginia, Maryland, Pennsylvania, New Jersey, and New York. Branches from the main lines also extend

into Tennessee. The system delivers an average of approximately 100 million gallons of liquid petroleum products throughout the southern and eastern United States per day.

- Colonial’s Line 1 Pipeline is an interstate pipeline, traversing eight states, beginning in Texas and ending in Virginia. The Line 1 portion of PHMSA inspection Unit NC-1 (Charlotte) is approximately 80 miles long, with three pump stations and as many as 25 breakout tanks. In North Carolina, Line 1 traverses five counties: Cabarrus, Cleveland, Gaston, Rowan, and Mecklenburg.
- The Line 1 Pipeline is 40-inches in diameter with a 0.312-inch wall thickness, is API 5L X-60 grade, has a coal tar coating, a DSAW seam, and was manufactured in 1978 by Bethlehem Steel. It has an impressed current cathodic protection system. It transports refined products, including gasoline. The MOP is 673 psig. At the estimated time of failure, the operating pressure was 183 psig.
- The Failure occurred on Line 1 in the Oehler Nature Preserve, near the intersection of Huntersville-Concord Road and Asbury Chapel Road, east of the Town of Huntersville, in Mecklenburg County, North Carolina. The Failure and resulting release was identified by local residents with access to Colonial’s ROW.
- Colonial initially submitted an NRC Report (Incident Report 1284598, dated August 14, 2020) and reported an estimate of 75 barrels due to “equipment failure.”
- Following confirmation of the release on August 14, 2020, Colonial submitted an initial accident report (PHMSA Form 7000.1) dated September 13, 2020, and reported an estimated release volume of 6,490 barrels. Colonial submitted a supplemental report on September 14, 2020, updating the total cost estimates with no change to estimated release volume. A second supplemental report was submitted on February 1, 2021, updating the estimated release volume to 28,571 barrels. Colonial has not provided any other reports to PHMSA regarding the estimated release volume due to the Failure.
- The released gasoline penetrated the soil and affected the ground water in the area.² Colonial installed 167 wells (81 monitoring wells, 50 recovery wells, 11 hydraulic control, and 25 air sparge system wells) between August 27, 2020 and December 23, 2020.
- Preliminary findings confirmed the presence of the above-referenced Type A sleeve, the original anomaly (shallow dent), a through-wall crack that developed in the anomaly, and an electrolyte (water). Colonial’s metallurgical analysis was received by PHMSA on March 19, 2021. The analysis identifies the primary crack growth mechanism as corrosion fatigue.
- PHMSA is aware that Colonial has made other repairs using Type A sleeves across the Colonial Pipeline System, and has implemented an ongoing Type A sleeve remediation

² See <https://sr2448.colonialresponse.com/>.

program intended to remove or replace existing Type A sleeves via an alternate repair method (*i.e.*, Type B sleeve or pipe replacement).

- The leak detection system used on the Colonial Pipeline System consists of a line-balance approach to track volumes transported, with regular reporting between field stations and Colonial’s control room in Alpharetta, Georgia. The process is predominantly manual, with a defined tolerance for any potential imbalance (*i.e.*, discrepancy between stations). Colonial employs computational pipeline monitoring (CPM) on portions of the system, but not on Line 1.
- On September 21, 2015, a reportable accident occurred on Colonial's Line 4 hazardous liquid pipeline in Centreville, Virginia, resulting in the release of approximately 95 barrels (4,000 gallons) of gasoline. Colonial was notified by the Fairfax County Fire Marshall of a sheen on a retention pond along Colonial’s Line 4 ROW. Line 4 is a continuation of Colonial’s Line 1. The accident occurred on a 288-mile section of Line 4 that runs between the company's Greensboro Tank Farm in Greensboro, North Carolina, and the Dorsey Tank Farm in Woodbine, Maryland. Colonial operates a parallel pipeline, Line 3, that runs approximately 30 feet apart from Line 4 at the site of the Centreville accident. The cause of the leak was determined to be a crack that formed in a shallow dent on the bottom side of the pipe.
- In February 2016, Colonial experienced a failure in Gwinnett County, Georgia at Harbins Road. The release was discovered by a third-party contractor and reported to Colonial personnel. According to Colonial documentation and reporting, the failure mode was “fatigue cracks within an area where a dent was present with significant corrosion (up to 35%) under a Type A sleeve with shrink sleeves on the end that was installed in 2005.” The final volume of release was reported to be 13.71 barrels.
- On September 9, 2016, Colonial experienced a failure on its Line 1 outside of Pelham, Alabama. Colonial was made aware of the suspected release by local governmental personnel. The initial estimate of the release volume was 23.8 barrels (1,000 gallons) of refined product (gasoline). According to the final accident report, dated May 6, 2019, Colonial reported an estimated volume released of 7,370 barrels (309,540 gallons). Following a prolonged response and recovery effort, the failure mechanism was determined to be a crack in a buckle that formed due to inadequate compaction following a prior repair project.³

Proposed Issuance of Safety Order

Section 60117(m) 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

³ The failure site was the subject of an earlier recoat project by Colonial. Per Colonial’s Root Cause Failure Analysis, inadequate compaction of the backfill material contributed to movement of the pipe due to soil consolidation post-repair.

risk to public safety, property, or the environment is set forth both in the above-referenced statute and 49 C.F.R. § 190.239, a copy of which is enclosed.

After evaluating the foregoing preliminary findings of fact and considering the age of the pipe involved, the manufacturer, the hazardous nature of the product transported and the pressure required for transporting such product, the characteristics of the geographical areas where the pipeline facility is located, and the failure history of the pipeline system, including causes of those failures, it appears that the continued operation of the Colonial Pipeline System without corrective measures would pose a pipeline integrity risk to public safety, property, or the environment. The conditions described above and threats at locations of prior similar repairs potentially exist throughout the Colonial Pipeline System. Further, Colonial's inability to effectively detect and respond to such releases has potentially exacerbated the impacts of numerous releases over the operational history of Colonial's entire pipeline system. Accordingly, corrective measures are necessary to mitigate the pipeline integrity risk of the pipeline system to protect public safety, property, and the environment.

Accordingly, PHMSA issues this Notice of Proposed Safety Order to notify Respondent of the proposed issuance of a safety order and to propose that Respondent take measures specified herein to address the potential risk.

Proposed Corrective Measures

Pursuant to 49 U.S.C. § 60117(m) and 49 C.F.R. § 190.239, PHMSA proposes to issue to Colonial a safety order incorporating the following remedial requirements with respect to the affected pipeline.

For the purposes of this Notice, "Director" means the Director, PHMSA, Office of Pipeline Safety, Southern Region.

1. Within 90 days after the Safety Order is issued, develop and submit to the Director for approval, a written remedial work plan (Work Plan or Plan) that includes corrective measures. The Plan must include provisions to:
 - a. Evaluate the effectiveness and capability of Colonial's leak detection system on the entirety of the Colonial Pipeline System, including main lines, spurs, and laterals. At a minimum, Colonial's evaluation must consider the following factors—length and size of the pipeline, type of product carried, the swiftness of leak detection, limitations on detectable quantities, location of nearest response personnel, and leak history. This evaluation must also consider MOP, normal operating pressures, flow rates (or throughput), and impacts from any pressure cycles or operational changes. For mainline segments that could affect high consequence areas (HCAs), Colonial's evaluation must consider the pipeline's proximity to the HCA and risk assessment results.
 - b. Based on the findings of the evaluation pursuant to Item 1.a., determine corrective actions to improve the effectiveness of Colonial's leak detection system. The corrective actions must result in the capability of the leak detection system to detect

leaks that pose a pipeline integrity risk to public safety, property, or the environment, similar to (but not limited to) leaks with characteristics common to those referenced above.

- c. Evaluate Colonial's written plans and procedures for inspection and maintenance and determine the extent to which the written plans contribute to the elimination of hazardous leaks. Based on the findings, determine appropriate amendments to improve the extent to which the plans contribute to the elimination of hazardous leaks.
 - d. Evaluate the effectiveness of Colonial's ROW inspection program. This evaluation must consider any geographic regions or features (*i.e.*, HCAs and other sensitive areas) that may require specific or additional means of patrol. Based on the findings, determine corrective actions to improve the effectiveness of Colonial's ROW inspection program.
 - e. Provide to the Director a complete inventory of all Type A sleeve repairs made on the Colonial Pipeline System. For each identified Type A sleeve, the inventory must include, at a minimum, the installation date a summary of the basis for the original application (*i.e.*, remediated condition), and confirmation of any scheduled removal/replacement.
 - f. Establish a program and requirements for classifying all future repairs as temporary or permanent. The Plan must establish timeframes for the removal of any repair identified as "temporary," or the permanent remediation of the condition requiring repair.
2. Items 1.a. through 1.d. must be facilitated by an independent third-party approved by the Director.
 3. All submittals required by Item 1 that include decisions and determinations must also describe the options and factors considered, including those removed from consideration.
 4. The Plan must include a proposed timeline for completion of the actions required by Item 1 above.
 5. The Director may approve Plan elements incrementally. Once approved, the Plan shall become incorporated into the Safety Order.
 6. Submit to the Director all written procedures, new or amended, that will be used to complete the requirements of the Safety Order.
 7. Revise the Plan as necessary to incorporate new information obtained during the evaluations and associated remedial activities. Submit any such Plan revisions to the Director for prior approval.
 8. Implement the Plan as it is approved by the Director, including any revisions to the Plan. Results of actions taken in accordance with the approved Plan must be available for review by PHMSA or its representative.
 9. Submit quarterly reports to the Director that: (1) include available data and results of the testing and evaluations required by the Safety Order; and (2) describe the progress

of the repairs and other remedial actions being undertaken. The first quarterly report shall be due 90 days from the date of the Safety Order.

10. A final summary report of work performed on the above items must be submitted to the Director within 30 days of the completion of the last action performed by Colonial that is set forth in the Safety Order.
11. The Director may grant an extension of time for compliance with any of the terms of the Safety Order upon a written request timely submitted demonstrating good cause for an extension.
12. Colonial may appeal any decision of the Director to the Associate Administrator for Pipeline Safety. Decisions of the Associate Administrator shall be final.
13. It is requested that Colonial maintain documentation of the safety improvement costs associated with fulfilling this Safety Order and submit the total to the Director, Southern 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.

The actions proposed by this Notice of Proposed 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. § 60101 et seq., 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 Work Plan, 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 Work Plan or Safety Order.

Response to this Notice

In accordance with § 190.239, you have 30 days following receipt of this Notice to submit a written response to the official who issued the Notice. If you do not respond within 30 days, this constitutes a waiver of your right to contest 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 Safety Order. In your response, you may notify that official that you intend to comply with the terms of the Notice as proposed, or you may request that an informal consultation be scheduled (you will also have the opportunity to request an administrative hearing before a safety order is issued). Informal consultation provides you with the opportunity to explain the circumstances associated with the risk condition(s) alleged in the notice and, as appropriate, to present a proposal for a work plan or other remedial measures, without prejudice to your position in any subsequent hearing.

If you and PHMSA agree within 30 days of informal consultation on a plan and schedule for you to address each identified risk condition, we may enter into a written consent agreement (PHMSA would then issue an administrative consent order incorporating the terms of the

agreement). If a consent agreement is not reached, or if you have elected not to request informal consultation, you may request an administrative hearing in writing within 30 days following receipt of the Notice or within 10 days following the conclusion of an informal consultation that did not result in a consent agreement, as applicable. Following a hearing, if the Associate Administrator finds the facility to have a condition that poses a pipeline integrity risk to the public, property, or the environment in accordance with § 190.239, the Associate Administrator may issue a safety order

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).

In your correspondence on this matter, please refer to **CPF No. 2-2021-005-NOPSO** and for each document you submit, please provide a copy in electronic format whenever possible.

James Urisko
Director, Southern Region
Pipeline and Hazardous Materials Safety Administration

March 29, 2021
Date issued