



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

AUG 18 2008

1200 New Jersey Ave., S.E.  
Washington, DC 20590

**VIA CERTIFIED MAIL AND FACSIMILE TO: 419-421-3125**

Mr. Craig O. Pierson  
Vice President of Operations  
Marathon Pipe Line, LLC  
539 South Main Street  
Findlay, OH 45840

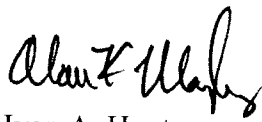
**Re: CPF No. 3-2008-5010H**

Dear Mr. Pierson:

Enclosed is a Corrective Action Order issued by the Associate Administrator for Pipeline Safety in the above-referenced case. It requires you to take certain corrective actions with respect to your pipeline that failed on August 10, 2008. 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 Corrective Action Order are effective upon receipt.

We look forward to a successful resolution of concerns arising out of the recent pipeline failure to ensure pipeline safety. Please direct any questions on this matter to me at (816) 329-3800.

Sincerely,

  
for: Ivan A. Huntoon  
Director, Central Region

Enclosures

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

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**In the Matter of** )

**Marathon Pipe Line, LLC,** )

**Respondent.** )  
\_\_\_\_\_ )

**CPF No. 3-2008-5010H**

**CORRECTIVE ACTION ORDER**

**Purpose and Background**

This Corrective Action Order is being issued, under authority of 49 U.S.C. § 60112, to require Marathon Pipe Line, LLC (Marathon or Respondent), to take necessary corrective actions to protect the public, property, and the environment from potential hazards associated with a failure involving Respondent's hazardous liquid pipeline.

On August 10, 2008, a failure occurred on Respondent's interstate crude oil pipeline running approximately 138 miles from Patoka, Illinois, to Owensboro, Kentucky. The site of the failure was near Golden Gate, Illinois, and resulted in the release of 5,000 barrels of crude oil. The cause of the failure has not yet been determined. Pursuant to 49 U.S.C. § 60117, the Pipeline and Hazardous Materials Safety Administration (PHMSA) initiated an investigation of the accident.

**Preliminary Findings**

- On August 10, 2008 at 5:45 a.m., CDT, Respondent's Patoka to Owensboro Crude System pipeline failed at MP 52.7, near the town of Golden Gate in Wayne County, Illinois. The pipeline runs from Patoka, Illinois, to a tank farm in Owensboro, Kentucky (hereinafter, "the Affected Segment").
- At approximately 5:45 a.m., CDT, on August 10, 2008, Respondent discovered on its SCADA system a sudden discharge pressure drop at its Johnsonville pump station and a suction pressure drop at its Albion station. Respondent immediately shut the line down. Respondent reported the accident to the National Response Center at 10:16 a.m. CDT.
- The location of the leak was discovered by aerial patrol at 8:30 a.m., CDT. Respondent closed the upstream block valve at Bernard (Milepost (MP) 44.35)) at 8:30 a.m., CDT, and closed the downstream block valve at Albion (MP 64.89) at 8:50 a.m., CDT.

- Marathon reported to PHMSA that the failure resulted in the release of approximately 5,000 barrels of crude oil. No fires, injuries, fatalities, or evacuations were reported in connection with the accident. Roads were closed in the immediate vicinity of the pipeline crossing of County Road 1100 N.
- Crude oil migrated from the spill site to a nearby creek that contained water at the time. Respondent contained the oil with booms in the creek. Environmental remediation will be necessary to clean the creek and the vegetation in the vicinity of the creek and spill site.
- Respondent drained crude oil from the line to initiate repairs; a full joint of pipe was removed and replaced with pretested pipe. The removed joint will be sent to Kiefner and Associates in Columbus, Ohio, for metallurgical analysis.
- The cause of the failure has not yet been determined. A visual examination shows a 36-inch-long “fish-mouth shaped” rupture in the longitudinal seam at the two o’clock position.
- The section of pipe that failed was constructed in 1968 by US Steel using the electric resistance weld (ERW) process and consisted of 20” diameter, 0.219” wall thickness, API 5LX-52 steel pipe. The portion of the Affected Segment comprised of steel manufactured by US Steel runs from MP 25 to MP 65. The pipe located at the failure site was last hydrostatically tested in 1974 at 1080 pounds per square inch gauge (psig).
- Respondent indicated that the Affected Segment was hydrostatically tested when it was constructed in 1968. It later became necessary for the operator<sup>1</sup> to perform additional pressure testing of the US Steel Pipe because of small leaks (weepers) in the longitudinal seam. This testing program was completed in 1975.
- The portions of the Affected Segment located on either side of the failure site were constructed with Youngstown Steel pipe (MP 0 through 25 and MP 65 to 138). The Youngstown pipe was last hydrostatically tested in 1968, except for a 10-mile section immediately downstream of the Patoka station that was last tested in 1994.<sup>2</sup> Respondent ran a combination MFL and geometry tool through the Affected Segment in September 2007. The closest detected anomaly was a metal-loss anomaly 8000 feet downstream of the failure site. The established maximum operating pressure in the section of pipe that failed is 820 psig. The actual operating pressure at the time and location of the failure was 618 psig.

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<sup>1</sup> Ashland Pipe Line Company

<sup>2</sup> The Youngstown pipe within the Affected Segment is low-frequency ERW pipe. This type of pipe has a history of seam weld failures. See “Alert Notice,” ALN-89-01 (advising pipeline operators of the history of failure of pre-1970 ERW pipelines and to take additional precautions to limit pressure, to hydrotest, and to assure adequate cathodic protection); See “Alert Notice,” ALN-88-01.

- A hazardous facility order (now known as a corrective action order) was issued by the Research and Special Programs Administration, the predecessor agency of PHMSA, in May 1993, after a release of 4,750 barrels of crude oil on the Affected Segment near the Patoka, Illinois, pump station.<sup>3</sup> The release was the result of a 54-inch failure along the seam weld.
- The Affected Segment originates in Patoka, Illinois (MP 0) and runs through Marion, Wayne, Edwards, and Wabash Counties in Illinois and through Gibson, Posey, Vanderburgh, Warrick, and Spencer Counties in Indiana; the line terminates at Owensboro in Daviess County, Kentucky. The failure site is in an area deemed an unusually sensitive area (USA) because of the need to protect a local drinking water resource.<sup>4</sup> However, there is no information that drinking water resources were impacted by the August 10 failure. Areas deemed USAs are considered high consequence areas (HCAs) under 49 C.F.R. Part 195.<sup>5</sup>
- A review of National Pipeline Mapping System (NPMS) data indicates that the Affected Segment runs through drinking water and ecological HCAs. It also passes through woodlands, wetlands, creeks, and rivers, including the Wabash River at the Illinois-Indiana border, and the commercially navigable Ohio River near Owensboro, Kentucky. The segment also passes through high-population areas of Evansville, Indiana, and Owensboro, Kentucky.
- The Affected Segment was returned to operation late on August 12, 2008, at reduced operating pressures to ensure public safety. The reduced operating pressures do not exceed those listed in the Required Corrective Action section of this document.

### **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, after reasonable notice and the opportunity for a hearing, 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, 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 of Title 49, 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.

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<sup>3</sup> In the Matter of Ashland Pipe Line Company. Hazardous Facility Order, CPF No. 33508-H (May 5, 1993); In the Matter of Ashland Pipe Line Company, Amendment to Hazardous Facility Order, CPF No. 33508-H (Dec. 7, 1994).

<sup>4</sup> See 49 C.F.R. § 195.6

<sup>5</sup> See 49 C.F.R. § 195.450

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 continued operation of the Affected Segment without corrective measures would be hazardous to life, property, and the environment. I have considered the physical characteristics of the pipe, including the fact that the Affected Segment was constructed prior to 1970 using pipe manufactured by the ERW method. In 1993, the Affected Segment suffered a significant failure. Following construction in 1968, the US Steel pipe experienced longitudinal small leakage issues.

I have also considered the fact that the cause of the current failure is unknown and that other similar anomalies may exist that could grow to a critical size under normal operating conditions. I have considered the aspects of the geographical area in which the Affected Segment is located, the amount of product released in the most recent failure, and the fact that it occurred in an USA and HCA and could affect public drinking water resources. It also crosses waterways such as wetlands, creeks, and rivers, including the Wabash River at the Illinois-Indiana border and the commercially navigable Ohio River near Owensboro, Kentucky. The segment also passes through high-population areas of Evansville, Indiana, and Owensboro, Kentucky.

Accordingly, upon consideration of all the circumstances surrounding the August 10 failure, including the pipe's ERW method of construction, the proximity of the pipeline to HCAs, waterways, and high-population areas, the hazardous nature of the crude oil being transported, the fact that the failure occurred below the MOP, and the ongoing investigation to determine the cause of the failure, I hereby find that continued operation of the facility is or would be hazardous to life, property, and the environment unless certain corrective actions are taken. I further find that a failure to expeditiously issue this Order requiring immediate corrective action would result in the likelihood of serious harm to life, property, or 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 shall be effective upon receipt.

Within 10 days of receipt of this Order, Respondent may request a hearing, 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. If a hearing is requested, it will be held telephonically or in-person in Kansas City, Missouri, or Washington, D.C., on a date that is mutually convenient to PHMSA and Respondent.

After receiving and analyzing additional data in the course of this investigation, PHMSA may identify other corrective measures that need to be taken. In that event, 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 Action**

Pursuant to 49 U.S.C. § 60112, I hereby order Marathon Pipe Line, LLC, to immediately take the following corrective actions with respect to the Affected Segment:

1. The operating pressure on the Affected Segment shall not exceed 80 percent of the actual operating pressure in effect immediately prior to the August 10, 2008 failure. Specifically, the operating pressures shall not exceed the following values at the sites listed below:

Failure site: 494 psig

Patoka Pump Station discharge: 634 psig

Johnsonville Pump Station discharge: 600 psig

Albion Pump Station discharge: 628 psig

Daylight Pump Station discharge: 560 psig<sup>6</sup>

These pressure restrictions will remain in effect until written approval to increase the pressure or to return the pipeline to its pre-failure operating pressure is obtained from the Director, Central Region, PHMSA (Director), as set forth in Item 9 below. If the results of any action undertaken pursuant to this Order necessitate a reduction in the allowable operating pressure permitted by this Order, Respondent must further reduce the allowable operating pressure accordingly.

2. Within 45 days of receipt of this Order, complete mechanical and metallurgical testing and failure analysis of the failed pipe. The testing and analysis shall be completed as follows:
  - (A) When handling and transporting the failed pipe section and other evidence from the failure site, document the chain of custody;
  - (B) Obtain the Director's prior approval of the mechanical and metallurgical testing protocols;
  - (C) Prior to commencing the mechanical and metallurgical testing, provide the Director with the scheduled date, time, and location of the testing in order to allow a PHMSA representative to witness the testing; and
  - (D) Ensure that the testing laboratory distributes all resulting reports, whether draft or final, to the Director at the same time they are made available to Respondent.
3. Within 60 days of receipt of this Order, perform an analysis to determine the continued adequacy of the aforementioned pressure restrictions. The analysis shall consider all relevant factors including, but not limited to, pipe material properties, results of metallurgical examinations, operating pressure cycles, and the results of previous tests and inspections, to maintain an adequate safety margin for defects similar to the one that resulted in the failure on August 10, 2008. If such analysis determines that further restrictions are necessary, Marathon shall take them and promptly notify the Director.
4. Within 60 days of receipt of this Order, develop and submit to the Director for prior approval a written remedial work plan, including corrective measures, in order to confirm and ensure the integrity of the Affected Segment and fully address all known or suspected factors that caused

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<sup>6</sup> Although the Daylight Pump Station was not operating at the time of failure, the above-listed pressure is 80% of the highest operating pressure experienced 60 days prior to August 10, 2008.

or contributed to the August 10, 2008 failure. The remedial work plan must include, as applicable:

- (A) The integration of the information developed from the actions required by Item 2 above with any relevant information about the pipeline system, including: previous failure investigations, leak history, repair records, corrosion control/cathodic protection records, internal inspections, hydrostatic testing, changes in pressure cycling, operating procedures, and other relevant operating data for the purpose of performing a comprehensive analysis of the available information associated with the factors that caused or contributed to the failure;
  - (B) The performance of field testing, inspections, and evaluations to determine whether and to what extent the conditions associated with the failure, or any other integrity-threatening conditions, are present elsewhere on the affected pipeline. Include a detailed description of the criteria to be used for the evaluation and prioritization of any integrity threats/anomalies that are identified. Make the results of the inspections, field excavations, and evaluations available to PHMSA;
  - (C) The performance of repairs or other corrective measures that fully remediate the condition(s) associated with the Affected Segment's failure and any other integrity-threatening condition everywhere along the Affected Segment where such conditions are identified by the evaluation process. Include a detailed description of the repair criteria and method(s) to be used in undertaking any repairs or other remedial actions;
  - (D) Provisions for continuing long-term periodic testing and integrity verification measures to ensure the ongoing safe operation of the pipeline considering the results of the analyses, inspections, and corrective measures undertaken pursuant to this Order; and
  - (E) A proposed schedule for completion of the actions required by paragraphs (A) through (D) of this Item.
5. The remedial work plan shall be incorporated into this Order and revised as necessary to incorporate new information obtained during the failure investigation and remedial activities undertaken pursuant to this Order. Submit any such plan revisions to the Director for prior approval. The Director may approve plan elements incrementally.
  6. Implement the work plan as approved by the Director, including any revisions to the plan.
  7. Submit quarterly reports to the Director that: (1) include available data and results of the testing and evaluations required by this Order; and (2) describe the progress of the repairs and other remedial actions being undertaken. The first quarterly report shall be due September 30, 2008.
  8. Maintain documentation of the costs associated with implementation of this Corrective Action Order. Include in each quarterly report submitted pursuant to Item 7, the to-date total costs associated with: (1) studies, analyses, assessments, testing, and preparation and

revision of procedures; (2) physical changes to pipeline infrastructure, including repairs, replacements and other modifications; and (3) environmental remediation.

9. The Director may allow the removal or modification of the pressure restriction set forth in Item 1 above upon a written request from Respondent demonstrating that the hazard has been abated and that restoring the Affected Segment to its pre-failure operating pressure is justified, based upon a reliable engineering analysis showing that the pressure increase is safe considering all known defects, anomalies, and operating parameters of the Affected Segment.

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 that under this Order 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 the 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. In the event that 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. In the event that 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/or the Director may otherwise proceed to enforce the terms of this Order.

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

The actions required by this Corrective Action Order are in addition to and do not waive any requirements that apply to Respondent's pipeline system under 49 C.F.R. Part 195, 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.

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 Corrective Action Order shall be effective upon receipt.

*William H. Gault*  
for

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Jeffrey D. Wiese  
Associate Administrator  
for Pipeline Safety

AUG 18 2008

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Date Issued