



US Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

OCT 17 2000

Ms. Daragh Porter
President, Operations
Marathon Ashland Petroleum LLC
539 S. Main Street
Findlay, Ohio 45840

Re: CPF No. 220005011-H

Dear Ms. Porter:

Enclosed is a Corrective Action Order issued by the Associate Administrator for Pipeline Safety in the above-referenced case. Service is being made by certified mail and telecopy. Your receipt of the enclosed document constitutes service of that document. The terms and conditions of this Corrective Action Order are effective upon receipt.

Sincerely,

Gwendolyn M. Hill
Pipeline Compliance Registry
Office of Pipeline Safety

Enclosure

cc. Mr. Thomas L. Shaw, Vice President, Operations

DEPARTMENT OF TRANSPORTATION
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION
WASHINGTON, DC 20590

In the Matter of
Marathon Ashland Petroleum LLC,
Respondent.

CPF No. 220005011-H

CORRECTIVE ACTION ORDER

Purpose and Background

This Corrective Action Order is being issued, under authority of 49 U.S.C. § 60112 to require Marathon Ashland Petroleum LLC (Marathon) to take the necessary corrective action to protect the public and environment from potential hazards associated with its 24 inch pipeline between Owensboro, Kentucky and Catlettsburg, Kentucky. This section of Marathon's pipeline system originates at the Owensboro Station storage facility, transporting crude oil approximately 264.9 miles to Ashland Terminal, a refinery in Catlettsburg. The pipeline serves as the primary conduit of crude oil to the Catlettsburg refinery, and a shutdown of this pipeline segment could result in a shutdown of the refinery.

On January 27, 2000, a rupture occurred along this section of Marathon's pipeline system near Winchester, Kentucky, resulting in a release of 11,644 barrels of crude oil. Pursuant to 49 U.S.C. § 60117, the Southern Region, OPS and the Kentucky Public Service Commission initiated an investigation of this failure. Following the failure, Marathon internally inspected the Owensboro to Catlettsburg pipeline section. Analysis of some of the data indicates the presence of several serious defects which raise concerns regarding the integrity of this pipeline section.

Preliminary Findings

1. Marathon transports crude oil through a 264.9 mile segment of its pipeline system which connects its storage facility in Owensboro, Kentucky to its refinery in Catlettsburg, Kentucky.
2. This segment of the Marathon pipeline system began operation in 1975 and traverses through or near several communities located in Daviess, Hancock, Breckinridge, Hardin, Sullitt, Nelson, Anderson, Mercer, Woodford, Jassamine, Fayette, Clark, Montgomery, Bath, Rowan, Elliott, Carter, and Boyd counties in the state of Kentucky.

3. On January 27, 2000, at approximately 12:12 PM CST, a rupture occurred along this segment in Clark County, resulting in a release of 11,644 barrels of crude oil. The release originated 2 miles south of the town of Winchester, Kentucky, near the fifth hole of the Southwind Golf Course. The crude oil traveled 1200 feet downhill through a field to an unnamed tributary of Two Mile Creek, and subsequently into Two Mile Creek.
4. The release caused approximately \$5,111,000 in property damage. The release also caused an undetermined amount of environmental damage to approximately 1.5 miles of Two Mile Creek and an unnamed tributary.
5. The rupture occurred in a section of 24-inch pipeline manufactured by Republic Steel that comprises 93.4 miles of the 264.9 mile pipeline from Owensboro to Catlettsburg, Kentucky. The Republic Steel pipe is 0.250-inch wall thickness, API 5L X52, double joint girth welded, double submerged arc welded, carbon steel pipe.
6. The Owensboro to Catlettsburg pipeline has a maximum operating pressure (MOP) of 780 psig. The operating pressure at the time of failure was 606 psig.
7. Following the failure, Marathon voluntarily reduced the operating pressure along the Owensboro to Catlettsburg pipeline to ensure an increased safety margin by maintaining a 20% pressure reduction at the failure site.
8. Although the National Transportation Safety Board (NTSB) has not yet determined the probable cause of this failure, OPS has conducted its own inspection and reviewed an NTSB metallurgical analysis. OPS has determined that the failure occurred at a dent which had been identified by an inline inspection tool run performed by Marathon on January 20, 1997. The depth of this dent was less than 2% of the outer diameter of the pipe. In accordance with Marathon's repair criteria, dents with depths that are less than 2% of the outer diameter of the pipe are considered to be insignificant, and Marathon took no action to repair the pipe.
9. Metallurgical analysis of the failed section of pipe after the incident showed crack-like features associated with the dent that were not identified by most recent inline inspection prior to the accident, in January 1997.
10. Since the date of the accident, Marathon has internally inspected the pipeline with a Slope/Deformation tool and a Transverse Flux Inspection (TFI) tool.
11. Marathon has conducted the TFI tool internal inspection of the pipeline in approximate 40-mile blocks. An analysis of the data generated by the TFI tool for the first 40-mile block indicates the presence of several serious anomalies including longitudinal cracks, possible stress corrosion cracking, general corrosion, longitudinally aligned corrosion, denting and possible mill defects. Marathon is in the process of evaluating the remaining 40-mile blocks of TFI tool data.

12. Among the serious defects identified by the TFI tool data for the first 40-mile block, are three located near Lexington, Kentucky. The first defect is comprised of two smooth dents containing areas of longitudinally aligned corrosion that join in a manner that resembles stress corrosion cracking. Examination indicated some cracking underlying the corrosion. The second defect is a 4-inch long, longitudinal, narrow crack-like feature originating on the internal surface of the pipe wall, and penetrating to a maximum of approximately 0.18-inches into the pipe (72% of wall thickness), as determined by non-destructive examination. Finally, the third defect is a 5.25-inch long, longitudinal crack-like feature originating on the internal surface of the pipe wall, and penetrating a maximum of approximately 0.16-inches into the pipe (64% of wall thickness), as determined by non-destructive examination.
13. The Marathon pipeline segment from Owensboro to Catlettsburg is the primary source of crude oil to the refinery in Catlettsburg. A shutdown of this pipeline segment could result in a shutdown of the refinery.

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, 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 result in likely 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 this pipeline without corrective measures would be hazardous to life, property and the environment. Additionally, after considering the circumstances surrounding this failure, the proximity of the pipeline to populated areas, the seriousness of the defects detected, and the uncertainties as to the condition of other pipe sections along this 264.9 mile segment, I find that a failure to issue expeditiously this Order, requiring immediate corrective action, would result in likely serious harm to life, property, and the environment.

Accordingly, this Corrective Action Order mandating needed 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, Marathon may request a hearing, to be held as soon as practicable, by notifying the Associate Administrator for Pipeline Safety in writing, delivered personally, by mail or by telecopy at (202) 366-4566. The hearing will be held in Atlanta, Georgia or Washington, D.C. on a date that is mutually convenient to OPS and Marathon.

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

Discussion

OPS's analysis of the defects discovered by the TFI tool during Marathon's internal inspection of the first 40-mile block of the Owensboro to Catlettsburg pipeline segment raises serious concerns regarding the integrity of the entire pipeline. OPS's assessment of the threat to life, property and the environment is that immediate corrective action is required. Testing must be undertaken expeditiously to determine the full extent and nature of all anomalies and defects present along the entire pipeline segment. This testing must utilize the best technology available for providing information on the integrity of a hazardous liquid pipeline. All information gathered by Marathon must be provided to OPS for evaluation.

Required Corrective Action


Pursuant to 49 U.S.C. § 60112, I hereby order Marathon to immediately take the following corrective actions with respect to its segment between Owensboro and Catlettsburg:

1. Maintain the 20% pressure reduction from the operating pressure at the time of the failure to ensure that an adequate margin of safety at the failure site is maintained. Assure that all overpressure protection setpoints and control settings are adjusted appropriately to ensure the limited operating pressure is not exceeded.
2. Within 15 days, conduct all analysis necessary to determine an interim maximum operating pressure that allows continued safe operation of the pipeline while the work plan required under item 3 below is being implemented. Base the analysis on the non-destructive examinations made in the field, as specifically referenced in the Preliminary Findings above, to determine whether a further pressure reduction is required for safety. Provide the operating parameters and a copy of the analysis to the Regional Director, Southern Region, OPS. Further reduce the operating pressure to this level. Assure that all overpressure protection setpoints and control settings are adjusted appropriately to ensure the maximum operating pressure is not exceeded.

3. Develop and implement a work plan for the testing and repair or replacement of sections of pipe that are determined to contain significant defects including, but not limited to, cracks, stress corrosion, general corrosion, or mill defects. Submit the plan to the Regional Director, Southern Region, OPS for approval within 15 days of receipt of this Order. This work plan shall:
 - a. Detail a process for identifying significant defects.
 - b. Describe the specific repair and replacement methods to be employed as remedial actions, and the criteria for their use.
 - c. Describe the methods and schedule for removing defective pipeline segments for laboratory testing and analysis.
 - d. Describe a process and time line for obtaining a metallurgical evaluation by an independent metallurgist of selected pipeline segments containing significant defects, as necessary to determine pipe life, interval to next test, cause of defect, and to identify and verify the defect.
 - e. Grade the defects which may be discovered by the TFI tool based on the risks they pose, and establish a schedule for repairing or replacing defective pipe sections based on the defect grade. This section of the work plan shall identify:
 - i. Defects which constitute an imminent hazard requiring the pipeline to be shut down immediately upon discovery of the defect, until appropriate remedial action is taken;
 - ii. Defects requiring appropriate remedial action within 30 days of discovery of the defect;
 - iii. Defects requiring appropriate remedial action within 60 days of discovery of the defect;
 - iv. Defects requiring appropriate remedial action within 6 months of discovery of the defect; and
 - v. Conditions under which the discovery of a defect occurs, such as upon receipt of a preliminary internal inspection report or upon excavation of an anomaly.
 - f. Evaluate the appropriateness of the use of Class A and Class B full-encirclement sleeves for the permanent repair of significant defects identified by the TFI tool.

- g. Describe an operational reliability analysis which may be used to determine a safe maximum operating pressure for this pipeline in the future, based on the findings of the metallurgical evaluations of significant defects and other factors including factors pertaining to cyclic stresses if this is found to be a factor in identified defect growth.
4. Submit a report on the results of all removal, testing and analysis performed under the work plan, to the Regional Director, Southern Region, OPS within 15 days after completion of the tasks identified in the work plan for each 40-mile test block. Consider in the analysis the significant defects found in the TFI log and current or anticipated future operating conditions. Provide the operating parameters and a copy of the analysis to the Regional Director, Southern Region, OPS.
5. Marathon may request approval from the Associate Administrator, OPS, to increase its operating pressure above the interim maximum operating pressure determined above under item 2, based on a showing that the hazard has been abated or that a higher pressure is justified based on an analysis showing that the pressure increase is safe considering all known defects, anomalies and operating parameters of the pipeline. OPS's approval must be in writing. If OPS approves the request for an operating pressure increase, Marathon should assure that all overpressure protection setpoints and control settings are adjusted appropriately to ensure the operating pressure is not exceeded.
6. The Regional Director, Southern Region, OPS, may grant an extension of time, upon receipt of a written request stating reasons an extension is needed, for completion of any of the actions required in this Order.

The procedures for the issuance of this Order are described in Part 190, Title 49, Code of Federal Regulations, § 190.233, a copy of which is enclosed, are made part of this Order and describe the Respondents's procedural rights relative to this Order. Failure to comply with this Order may result in the assessment of civil penalties of not more than \$25,000 per day and in referral to the Attorney General for appropriate relief in United States District Court.



Stacey Gerard
Associate Administrator
for Pipeline Safety

OCT 17 2000

Date Issued