



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue SE
Washington, DC 20590

October 21, 2016

VIA CERTIFIED MAIL AND FAX TO: 918-574-7039

Mr. Michael N. Mears
Chairman of the Board, President and Chief Executive Officer
Magellan Midstream Partners, LP
One Williams Center, MD 27
P.O. Box 22186
Tulsa, Oklahoma 74172

CPF No. 3-2016-5009H

Dear Mr. Mears:

Enclosed is a Corrective Action Order issued in the above-referenced case. It requires Magellan Ammonia Pipeline, LP, a subsidiary of Magellan Midstream Partners, LP, to take certain corrective actions with respect to your 8-inch anhydrous ammonia pipeline that failed on October 17, 2016, near Tekamah, Nebraska. 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 the Order are effective upon receipt.

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

Sincerely,

Alan K. Mayberry
Acting Associate Administrator
for Pipeline Safety

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, Region Director, OPS
Mr. Michael Pearson, VP Technical Services, Magellan Ammonia Pipeline, LP,
michael.pearson@magellanlp.com

**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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Magellan Ammonia Pipeline, LP,)
a subsidiary of Magellan Midstream Partners, LP,)

CPF No. 3-2016-5009H

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 Magellan Ammonia Pipeline, LP (Magellan or Respondent), to take the necessary corrective actions to protect the public, property, and the environment from potential hazards associated with a release from its 8-inch anhydrous ammonia interstate transmission pipeline near Tekamah, Nebraska.¹ This Order finds that continued operation of that portion of Respondent's 8-inch anhydrous ammonia pipeline system running approximately 49 miles from the Valley (NE) trap site at MP 223.61 to the Missouri River trap site at MP 272.05 (*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 17, 2016, a reportable accident occurred on the *Affected Segment* near Tekamah, Nebraska, resulting in the release of approximately 7,000 barrels of liquid anhydrous ammonia (Failure). The Failure occurred at Milepost (MP) 263.1, approximately 100 feet north of a manually-operated valve on the *Affected Segment*. It has been confirmed that as a result of the Failure, one fatality occurred, two people were injured, and 23 homes and over 40 people were evacuated. 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), Office of Pipeline Safety (OPS), initiated an investigation of the accident. The preliminary findings of the agency's ongoing investigation are as follows:

¹ Magellan Ammonia Pipeline, LP's anhydrous ammonia pipeline system is approximately 1,090 miles long, originating in Oklahoma and Texas and terminating in Mankato, Minnesota.

Preliminary Findings:

- The accident was initially reported by Magellan to the National Response Center at 9:05 pm CDT on October 17, 2016 (NRC Report No. 1161809), indicating a 500-barrel release of liquid anhydrous ammonia. This NRC report was updated on October 18, 2016, with NRC Report Nos. 1161815 and 1161831 to reflect that 7,000 barrels was released.
- As a result of the Failure, one man was killed, two people were injured, and 23 households and over 40 people were evacuated. U.S. Highway 75 was also closed for a period of time.
- At approximately 9:05 p.m. CDT (all times are CDT unless otherwise indicated) on October 17, 2016, the operator's leak detection system alarmed, indicating a potential leak on the pipeline, which was shutdown at 9:09 p.m. The company's SCADA system subsequently provided a rupture alarm at 9:14 p.m. At 9:21 p.m., the company's Tulsa Control Center received a third-party report, indicating a strong ammonia odor and a vapor cloud approximately 8.5 miles north of Tekamah, Nebraska.
- The failure location was described as approximately MP 263 on the 8-inch Valley to Whiting pipeline, in Burt County, Nebraska. The operating pressure at the time of failure was 846 psig at the Herman (NE) pump station (upstream) and 808 psig at the Whiting (IA) pump station (downstream). The pressure at the location of the Failure was 800 psig.
- Remote-operated valves (ROVs) were closed at Herman (MP 247) and Decatur (MP 269). A manual valve was also closed at MP 252.8, and the manual valve at MP 263.1 was closed once safe access to the site could be obtained (the Failure is reported to be approximately 100 feet north of valve setting).
- Emergency responders evacuated local residents and closed roads to establish a safe perimeter around the Failure location. An Incident Command was established at the Decatur (NE) fire hall.
- The Failure occurred on the *Affected Segment*, which is a bi-directional system with a Maximum Operating Pressure (MOP) of 1198 psig. In the last 90 days, the maximum discharge pressure at the Herman (NE) pump station was 857 psig, and the maximum discharge pressure at the Whiting (IA) pump station was 866 psig.
- The *Affected Segment* was installed in 1968. It is 8-inch nominal diameter, 0.156" wall thickness, and was constructed of API 5L X-46 line pipe manufactured by Lone Star. The pipe has a low-frequency ERW longitudinal seam and is coated with a plastic tape coating.
- The pipeline was last tested hydrostatically in 2010, including a spike test to 100%

Specified Minimum Yield Strength. There were reportedly five hydrostatic test failures, with the closest one being at MP 245. The cause of that test failures was found to be stress corrosion cracking (SCC).

- The line was most recently assessed in 2015, using inline inspection (ILI) for deformation and metal-loss anomalies. There was also a prior sleeve repair from a May 8, 2013 release, located 66 feet north of the valve at MP 263, but no other reported anomalies which required investigation were reported in the area of the Failure.
- On September 16, 2011, PHMSA issued a Corrective Action Order [CPF 3-2011-5010H] to Magellan Ammonia Pipeline, LP, which required replacement of the pipeline's Missouri River crossing due to severe flooding when the pipe became exposed in the river at the downstream end of the Affected Segment.
- In 2003, the Office of Pipeline Safety issued an Advisory Bulletin regarding the threat of stress corrosion cracking.
- In 1988 and 1989, the OPS issued Alert Notices related to low-frequency ERW pipe manufactured prior to 1970.
- The pipeline directly intersects or could affect Drinking Water and Ecological High Consequence Areas (HCAs). The pipeline has some segments which directly intersect or could affect Other Populated Areas.
- The PHMSA investigation is on-going and information could change. The National Transportation Safety Board is performing an investigation of the Failure. This Order may be amended based on further findings.

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 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 and considering the ongoing

investigation of the Failure, I find that the continued operation of the *Affected Segment* without corrective measures is or would be hazardous to life, property and the environment. Additionally, after considering the age of the pipe, the circumstances surrounding the Failure, the hazardous nature of the product being transported, the fatality and injuries sustained as a result of the Failure, the pressure required for transporting the material, the uncertainties as to the cause of the Failure, and the ongoing investigations to determine the cause of the Failure, 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, 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:

Definitions:

Affected Segment means the segment of Respondent's 8-inch anhydrous ammonia pipeline system running from the Valley (NE) trap site at MP 223.61 to the Missouri River trap site at MP 272.05.

Failure Site means the pipeline section on the *Affected Segment* where the leak occurred on October 17, 2016, at approximately MP 263.1 on the 8-inch Valley to Whiting pipeline, in Burt County, Nebraska.

Pursuant to 49 U.S.C. 60112, I hereby order Magellan to immediately take the following corrective actions for the *Affected Segment*:

1. ***Shutdown of the Affected Segment.*** The 8" Magellan Pipeline from Valley (NE) trap site at MP 223.61 to the Missouri River trap site at MP 272.05 is currently out of service. This *Affected Segment* must remain shut down until the Central Region Director has provided written approval to Magellan to resume operations.
2. ***Restart Plan.*** Prior to resuming operation of the *Affected Segment*, Magellan must develop and submit a written Restart Plan to the Director for prior approval.
 - a. Once approved by the Director, the Restart Plan will be incorporated by reference

into this Order.

- b. The Restart Plan must provide for adequate patrolling of the *Affected Segment* during the restart process and include sufficient surveillance of the pipeline to ensure that no leaks are present when operation of the line resumes.
 - c. The Restart Plan must specify a day-light restart and include advance communications with local emergency response officials.
3. **Return to Service.** After the Director approves the Restart Plan, Magellan may return the *Affected Segment* to service but the operating pressure must not exceed eighty percent (80%) of the actual operating pressure in effect immediately prior to the Failure on October 17, 2016, in accordance with Item 4 below.
 4. **Operating Pressure Restriction Upon Restart.** Magellan must reduce and maintain a twenty percent (20%) pressure reduction in the actual operating pressure along the entire length of the *Affected Segment*, such that the operating pressure along the *Affected Segment* will not exceed eighty percent (80%) of the actual operating pressure in effect immediately prior to the Failure on October 17, 2016.
 - a. This pressure restriction is to remain in effect until written approval to increase the pressure or return the pipeline to its pre-failure operating pressure is obtained from the Director.
 - b. Prior to resuming operation, Magellan must provide the Director with the actual operating pressures of each pump/compressor station and each main line pressure regulating station on the *Affected Segment* at the time of failure and the reduced pressure restriction set-points at these same locations.
 - c. This pressure restriction requires any relevant remote or local alarm limits, software programming set-points or control points, and mechanical over-pressure devices to be adjusted accordingly.
 - d. When determining the pressure restriction set-points, Magellan must take into account any ILI features or anomalies present in the *Affected Segment* to provide for continued safe operation while further corrective actions are completed.
 - e. Magellan must review the pressure restriction quarterly by analyzing the operating pressure data. Magellan must take into account any ILI features or anomalies present in the *Affected Segment* and immediately reduce the operating pressure to maintain the safe operations of the *Affected Segment*, if warranted by the quarterly review. Magellan must submit the results of the quarterly review to the Director. The results must include, at a minimum, the current discharge set-points (including any additional pressure reductions), and any pressure exceedance at discharge set-points.
 5. **Removal of Pressure Restriction.** The Director may allow the removal or modification of the pressure restriction upon a written request from Magellan demonstrating that 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 pipeline.

6. **Testing of Failed Pipeline Section.** Magellan must transfer custody of the failed pipe to the National Transportation Safety Board (NTSB) for mechanical and metallurgical testing and failure analysis, including analysis of soil samples and any foreign materials. Magellan must document the chain-of-custody when handling and transporting the failed girth weld and other evidence from the Failure Site (if any). The mechanical and metallurgical testing protocols shall be as approved by the NTSB.
7. **Remedial Work Plan (RWP).** Within 90 days following receipt of this Order, Magellan must submit a Remedial Work Plan (RWP) to the Director for approval.
 - a. The Director may approve the RWP incrementally without approving the entire RWP.
 - b. Once approved by the Director, the RWP will be incorporated by reference into this Order.
 - c. The RWP must specify the tests, inspections, assessments, evaluations, and remedial measures Magellan will use to verify the integrity of the *Affected Segment*. It must address all known or suspected factors and causes of the Failure. Magellan should consider both the risk of another failure and the consequences of another failure to develop a prioritized schedule for RWP-related work along the *Affected Segment*.
 - d. Magellan must integrate the results of the metallurgical testing and other corrective actions required by this Order with all relevant pre-existing operational and assessment data for the *Affected Segment*. Pre-existing operational data includes, but is not limited to, construction, operations, maintenance, testing, repairs, prior metallurgical analyses, and any third-party consultation information. Pre-existing assessment data includes, but is not limited to, ILI tool runs, hydrostatic pressure testing, direct assessments, close interval surveys, and electrical gradient surveys.
8. **Public Awareness Program Review.** Within 90 days following receipt of this Order, Magellan must submit a report documenting the review and assessment of the effectiveness of its Public Awareness Program with regards to the Failure. Magellan must seek input from local stakeholders, including the public, as part of its review. Magellan must amend its Public Awareness Program, if necessary, to reflect the results of this review.
9. **Root Cause Failure Analysis.** Within 180 days following receipt of this Order, complete a root cause failure analysis (RCFA) and submit a final report of this RCFA to the Director. The final report must include findings and any lessons learned and whether the findings and any lessons learned are applicable to other locations within Magellan's pipeline system.
10. **Order Revisions.** Upon approval by the Director, the RWP becomes incorporated into this Order and shall 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 investigations and remedial activities. Magellan must submit any such plan revisions to the Director for prior approval. The Director may approve plan elements incrementally.

11. **Implementation of Approved Work Plan.** Magellan must implement the work plan as approved by the Director, including any revisions to the plan.
12. **Quarterly Reports.** Magellan 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. The first quarterly report covering the period from October 21, 2016 through December 31, 2016, shall be due by January 15, 2017.

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 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 will 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 will 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 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. 3-2016-5009H" and for each document you submit, 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 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.

Respondent 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.

OCT 21 2016

Per



Alan K. Mayberry
Acting Associate Administrator
for Pipeline Safety

Date Issued

§190.233 Corrective action orders.

(a) *Generally.* Except as provided by paragraph (b) of this section, if the Associate Administrator finds, after reasonable notice and opportunity for hearing in accord with paragraph (c) of this section, a particular pipeline facility is or would be hazardous to life, property, or the environment, the Associate Administrator may issue an order pursuant to this section requiring the operator of the facility to take corrective action. Corrective action may include suspended or restricted use of the facility, physical inspection, testing, repair, replacement, or other appropriate action.

(b) *Waiver of notice and expedited review.* The Associate Administrator may waive the requirement for notice and opportunity for hearing under paragraph (a) of this section before issuing an order whenever the Associate Administrator determines that the failure to do so would result in the likelihood of serious harm to life, property, or the environment. When an order is issued under this paragraph, a respondent that contests the order may obtain expedited review of the order either by answering in writing to the order within 10 days of receipt or requesting a hearing under §190.211 to be held as soon as practicable in accordance with paragraph (c)(2) of this section. For purposes of this section, the term “expedited review” is defined as the process for making a prompt determination of whether the order should remain in effect or be amended or terminated. The expedited review of an order issued under this paragraph will be complete upon issuance of such determination.

(c) *Notice and hearing:*

(1) Written notice that OPS intends to issue an order under this section will be served upon the owner or operator of an alleged hazardous facility in accordance with §190.5. The notice must allege the existence of a hazardous facility and state the facts and circumstances supporting the issuance of a corrective action order. The notice must provide the owner or operator with an opportunity to respond within 10 days of receipt.

(2) An owner or operator that elects to exercise its opportunity for a hearing under this section must notify the Associate Administrator of that election in writing within 10 days of receipt of the notice provided under paragraph (c)(1) of this section, or the order under paragraph (b) of this section when applicable. The absence of such written notification waives an owner or operator's opportunity for a hearing.

(3) At any time after issuance of a notice or order under this section, the respondent may request a copy of the case file as set forth in §190.209.

(4) A hearing under this section is conducted pursuant to §190.211. The hearing should be held within 15 days of receipt of the respondent's request for a hearing.

(5) After conclusion of a hearing under this section, the Presiding Official submits a recommended decision to the Associate Administrator as to whether or not the facility is or

would be hazardous to life, property, or the environment, and if necessary, requiring expeditious corrective action. If a notice or order is contested in writing without a hearing, an attorney from the Office of Chief Counsel prepares the recommended decision. The recommended decision should be submitted to the Associate Administrator within five business days after conclusion of the hearing or after receipt of the respondent's written objection if no hearing is held. Upon receipt of the recommendation, the Associate Administrator will proceed in accordance with paragraphs (d) through (h) of this section. If the Associate Administrator finds the facility is or would be hazardous to life, property, or the environment, the Associate Administrator issues a corrective action order in accordance with this section, or confirms (or amends) the corrective action order issued under paragraph (b) of this section. If the Associate Administrator does not find the facility is or would be hazardous to life, property, or the environment, the Associate Administrator withdraws the notice or terminates the order issued under paragraph (b) of this section, and promptly notifies the operator in writing by service as prescribed in §190.5.

(d) The Associate Administrator may find a pipeline facility to be hazardous under paragraph (a) of this section:

(1) If under the facts and circumstances the Associate Administrator determines the particular facility is hazardous to life, property, or the environment; or

(2) If the pipeline facility or a component thereof has been constructed or operated with any equipment, material, or technique which the Associate Administrator determines is hazardous to life, property, or the environment, unless the operator involved demonstrates to the satisfaction of the Associate Administrator that, under the particular facts and circumstances involved, such equipment, material, or technique is not hazardous.

(e) In making a determination under paragraph (d) of this section, the Associate Administrator shall consider, if relevant:

(1) The characteristics of the pipe and other equipment used in the pipeline facility involved, including its age, manufacturer, physical properties (including its resistance to corrosion and deterioration), and the method of its manufacture, construction or assembly;

(2) The nature of the materials transported by such facility (including their corrosive and deteriorative qualities), the sequence in which such materials are transported, and the pressure required for such transportation;

(3) The characteristics of the geographical areas in which the pipeline facility is located, in particular the climatic and geologic conditions (including soil characteristics) associated with such areas, and the population density and population and growth patterns of such areas;

(4) Any recommendation of the National Transportation Safety Board issued in connection with any investigation conducted by the Board; and

- (5) Such other factors as the Associate Administrator may consider appropriate.
- (f) A corrective action order shall contain the following information:
- (1) A finding that the pipeline facility is or would be hazardous to life, property, or the environment.
 - (2) The relevant facts which form the basis of that finding.
 - (3) The legal basis for the order.
 - (4) The nature and description of any particular corrective action required of the respondent.
 - (5) The date by which the required corrective action must be taken or completed and, where appropriate, the duration of the order.
 - (6) If the opportunity for a hearing was waived pursuant to paragraph (b) of this section, a statement that an opportunity for a hearing will be available at a particular time and location after issuance of the order.
 - (g) The Associate Administrator will terminate a corrective action order whenever the Associate Administrator determines that the facility is no longer hazardous to life, property, or the environment. If appropriate, however, a notice of probable violation may be issued under §190.207.
 - (h) At any time after a corrective action order issued under this section has become effective, the Associate Administrator may request the Attorney General to bring an action for appropriate relief in accordance with §190.235.
 - (i) Upon petition by the Attorney General, the District Courts of the United States shall have jurisdiction to enforce orders issued under this section by appropriate means.

[70 FR 11138, Mar. 8, 2005, as amended by Amdt. 190-16, 78 FR 58912, Sept. 25, 2013]