



U.S. Department  
of Transportation

**Research and  
Special Programs  
Administration**

400 Seventh St. S.W.  
Washington D.C. 20590

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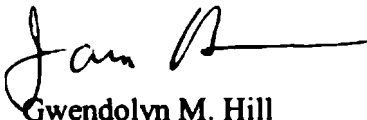
Mr. Ken Madliger  
Vice President of Operations  
Dome Pipeline Corporation  
P. O. Box 200, Station M  
Calgary, Alberta, Canada  
T2P 2H8

Re: CPF No. 3-2003-5020H

Dear Mr. Madliger

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 the operation of your Cochin pipeline. Service is being made by registered mail and facsimile. 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,

  
for Gwendolyn M. Hill  
Pipeline Compliance Registry  
Office of Pipeline Safety

Enclosure

cc: David Millage  
Manager, US Cochin Midwest Terminals  
Dome Pipeline Corporation  
2959 Sierra Ct., SW  
Iowa City, IA 52240

**VIA REGISTERED MAIL (RETURN RECEIPT REQUESTED) AND TELECOPY**

**DEPARTMENT OF TRANSPORTATION  
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION  
OFFICE OF PIPELINE SAFETY  
WASHINGTON, D.C. 20590**

**In the Matter of  
Dome Pipeline Corporation,  
Respondent.**

**CPF No. 3-2003-5020H**

**CORRECTIVE ACTION ORDER**

**Purpose and Background**

This Corrective Action Order is being issued, under authority of 49 U.S.C. § 60112, to require Dome Pipeline Corporation (Dome) to take the necessary corrective action to protect the public and environment from potential hazards associated with its Cochin Line, which extends from North Dakota through Minnesota, Iowa, Illinois, Indiana, Ohio, and Michigan.

On July 16, 2003, Dome's 12¾-inch diameter Cochin Line failed in Barnes County, North Dakota, resulting in the release of 9000 barrels of propane which ignited.

Pursuant to 49 U.S.C. § 60117, the Central Region, OPS initiated an investigation of this failure.

**Preliminary Findings**

1. At approximately 5:19 a.m. CDT, on July 16, 2003, Dome's 12¾-inch diameter Cochin Line ruptured, resulting in the release of 9,000 barrels of propane which ignited. The failure near Mile Post 839 (MP 839) occurred in Barnes County, North Dakota, approximately 6 miles northwest of Valley City, North Dakota.
2. No injuries or fatalities occurred.
3. The affected line segment is in a rural area.
4. The Cochin Line originates in Fort Saskatchewan, Alberta, Canada and crosses the U.S. border just north of Minot, North Dakota continuing in a southeasterly direction across Minnesota, into Iowa (just north of Charles City). The line then moves east through Illinois, (south of Chicago) into Indiana where it shifts in a northeasterly direction, through Ohio into Michigan, near Detroit, looping back into Windsor, Ontario, Canada.

5. Within the United States, the Cochin Line transports natural gas liquids, specifically, propane, ethylene and ethane. Propane, ethane and ethylene are highly volatile liquids. Highly volatile liquids form a vapor cloud when released into the atmosphere and have vapor pressures exceeding 40 psi at 100°F. The vapor clouds generated by propane and ethane will stay close to the ground and follow the terrain accumulating in the low areas, such as the ditches along a highway or railroad.
6. The pipeline was installed in 1977 and is constructed of 12¾-inch x 0.213-inch w.t., API 5L-X60, ERW pipe manufactured by U.S. Steel Corporation. The protective coating is tape wrap consisting of a Polyken 927 primer with a 960 outer wrap.
7. At the time of the incident, pressure at the failure site (MP 839) was 1395 psig. The maximum operating pressure (MOP) for the affected segment is 1440 psig. The affected segment is from the Rogers Pump Station (MP 829) to the Lisbon Pump Station (MP893). MOP was established by hydrostatic test in May 1978.
8. The preliminary investigation indicates the rupture occurred in an approximately 60 foot long field bent pipe joint. The length of the fracture was approximately 40 feet long.
9. The failed section was not blown out of the ditch. It remained attached to both ends of the pipeline. The failed pipe segments have been sent to a metallurgical laboratory for further analysis. The investigation is ongoing.
10. Preliminary visual investigation did not reveal any indication of corrosion or third-party damage.
11. Following the July 16, 2003 accident, Dome attempted to extinguish the fire and isolate the line by installing a stopple fitting near a mainline block valve approximately 150 feet downstream of the failure site. Excavation of the pipeline at the failure point on July 17, 2003, revealed mechanical damage to the pipe. A second excavation site, about 250 feet downstream of the failure site, revealed a 7-inch long linear indication. The third excavation site, approximately 350 feet downstream of the failure site, revealed good pipe and the stopple fitting was installed successfully.
12. The mechanically damaged pipe and the pipe with the linear indication have also been sent for metallurgical testing.
13. The affected section from Rogers to Lisbon section was internally inspected with a geometry tool, and high resolution magnetic flux leakage (MFL) tool in 2002. The ILI tool run results revealed a 14% metal loss approximately 4 feet upstream of the failure site and some slight wall loss about 194 feet further upstream. All repairs associated with the 2002 ILI tool run were completed prior to the July 16, 2003 failure.

14. Dome's review of the 2002 in-line inspection tool run report results revealed no indication of the pipe conditions found during the excavations on July 17, 2003.
15. The affected segment of the Cochin Line is out of service. Dome is replacing approximately 675 feet of pipe in the vicinity of the failure site.
16. The segment of pipe that failed on July 16, 2003, was last pressure tested in 1978.

#### **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 highly volatile liquids the pipeline facility transports, the pressure required for transporting the material, and the uncertainties as to the cause of the failure, 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, Dome 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 Kansas City, Missouri or Washington, D.C. on a date that is mutually convenient to OPS and Respondent.

After receiving and analyzing additional data in the course of this investigation, OPS may identify other longer term measures that need to be taken. Dome will be notified of any additional measures required and amendment of this Order will be considered. To the extent consistent with safety, Dome 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 Dome to immediately take the following corrective actions with respect to its Cochin pipeline:

1. Perform a hydrostatic test of the section of pipe in the area of the failure site at MP 839. Specifically, the section to be hydrostatically tested shall be from Rogers Pump Station (MP 829) to the block valve at MP 847. The hydrostatic test shall follow a plan approved by the Director, Central Region, OPS. Upon successful completion of the test, the pipeline may be returned to operational status pursuant to the pressure restriction of Item 2 of this Order, with written approval of the Director, Central Region, OPS.
2. Maintain a 20 percent (20%) pressure reduction in the operating pressure of the affected segment from the Rogers Pump Station (MP 829) to the Lisbon Pump Station (MP 893). Specifically, the Rogers Pump Station discharge pressure may not exceed 80 percent (80%) of the pressure just prior to the July 16, 2003 failure. This pressure restriction shall remain in effect until written approval to increase the pressure is obtained from the Director, Central Region, OPS.
3. Conduct a detailed metallurgical analysis of the pipe that failed on July 16, 2003 to determine the cause and contributing factors of the failure. The metallurgical testing shall follow protocols approved by OPS. Additionally, perform a metallurgical analysis on the two sections of pipe discovered during the excavation to install the stopple fitting, one section of pipe exhibits mechanical damage and the other section contains a 7-inch long linear indication. Submit all reports of the metallurgical analysis to the Director, Central Region, OPS, within one week of its receipt by Dome Pipeline.
4. Submit a written plan within 30 days of receipt of this Order, with a schedule, to verify the integrity of the affected segment from the Rogers Pump Station (MP 829) to the Lisbon Pump Station (MP 893). The plan must provide integrity testing that addresses all known or suspected factors in the July 16, 2003 failure, including if relevant:
  - A. Internal inspection tool surveys and remedial action. The type of internal inspection tools used must utilize the best technology available for reliably providing information on the integrity of the affected segment of the Cochin Pipeline System, and assessing the pipeline based on the type of failure that occurred on July 16, 2003, with emphasis on identifying and evaluating the following: 1) anomalies associated with dents, gouges and grooves; 2) metal loss due to corrosion; 3) the orientation of the longitudinal seam of the pipe; 4) pipe deformation, and 5) longitudinal cracks, mill defects and stress corrosion cracking.
  - B. A detailed description of the inspection and repair criteria that will be used in the field evaluation of the anomalies that are excavated. This is to include a description of how any defects are to be graded and the schedule for repairs or replacement.

Compare data from the 2002 in-line inspection with new data to identify anomalies that require immediate remedial action. Submit a report on the analysis of the inspection data and a time-line for remedial action to the Director, Central Region, OPS.

An evaluation of the affected segment for areas of damaged or disbonded coating, including but not limited to, a close-interval, current interrupted, pipe-to-soil survey.

- E. Integration of all available data from internal inspections, metallurgical analyses, and historical data, including repair and cathodic protection records.

Hydrostatic pressure testing of the affected segment and/or other mitigative measures required to address the cause and contributing factors to the July 16, 2003 pipeline failure.

- G. A schedule and means for providing the results and data for testing programs performed to the Central Region.

5. Each element of the plan required by Item 4 must be approved by the Central Region Director, who may provide approvals incrementally. Implement the plan as approved.
6. Respondent may request approval from the Director, Central Region, to remove or modify the pressure restriction of the affected line segment from the Rogers Pump Station (MP 829) to the Lisbon Pump Station (MP 893), based on 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. The request should include the final results of all testing and activities conducted pursuant to this Order. The Regional Director's determination will be based on satisfactory completion of the required actions, the cause of failure and provision of evidence that mitigative actions taken by the operator provide for the safe operation of the pipeline. Appeals to determinations of the Director, Central Region, in this regard will be subject to the decision of the Associate Administrator for Pipeline Safety.
7. The Director, Central Region, OPS may grant an extension of time for compliance with any of the terms of this order for good cause. A request for an extension must be in writing.
8. Dome may appeal any decision of the Director, Central Region, OPS to the Associate Administrator for Pipeline Safety. Decisions of the Administrator shall be final.

The actions required by this Order are in addition to and do not waive any requirements that apply to the affected segment under 49 CFR Part 195, including the integrity management program regulations.

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, is made part of this Order and describe the Respondent'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 \$100,000 per day and in referral to the Attorney General for appropriate relief in United States District Court.



Stacey Gerard

77 Associate Administrator  
for Pipeline Safety

JUL 25 2003

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Date Issued