



U.S. Department
of Transportation

Pipeline and Hazardous Materials
Safety Administration

1200 New Jersey Ave., SE
Washington, DC 20590

NOV 23 2010

VIA CERTIFIED MAIL AND FAX TO: (713-241-0232) [7005 1160 0001 0041 3146]

Mr. Greg Smith
President
Shell Pipeline Company, L.P.
Two Shell Plaza
777 Walker
Suite 1500
Houston, TX 77252

Re: CPF No. 4-2010-5017H

Dear Mr. Smith:

Enclosed is a Corrective Action Order issued by the Associate Administrator for Pipeline Safety in the above-referenced case. It requires Shell Pipeline Company, L.P. to take certain corrective actions with respect to the Houma-to-Houston pipeline system that experienced a failure on November 16, 2010. 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 (713) 272-2859.

Sincerely,

for: [Signature]
R. M. Seeley
Director, Southwest Region

Enclosures: Corrective Action Order and Copy of 49 C.F.R. § 190.233

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

_____))
In the Matter of))
))
Shell Pipeline Company, L.P.,))
))
Respondent.))
_____)

CPF No. 4-2010-5017H

CORRECTIVE ACTION ORDER

Background and Purpose

This Corrective Action Order is being issued, under authority of 49 U.S.C. § 60112, to require Shell Pipeline Company, L.P. (Shell or Respondent) to take necessary corrective action to protect the public, property, and the environment from potential hazards associated with a failure involving the Houma-to-Houston pipeline system.

On November 16, 2010, a failure occurred on the Houma-to-Port Neches segment of the pipeline system near Vinton, Louisiana, resulting in the release of approximately 1,000 barrels of crude oil. The cause of the failure has not yet been determined, but early examinations indicate that the cause may have been external corrosion. 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.

Preliminary Findings

- Shell’s Houma-to-Houston pipeline system is approximately 300 miles in length and transports crude oil from Houma, Louisiana to Houston, Texas (affected pipeline). On November 16, 2010, an accident occurred on the Houma-to-Port Neches segment of the affected pipeline near Vinton, Louisiana, approximately 10 miles downstream from Sulphur Station. The failure resulted in the release of approximately 1,000 barrels of crude oil in a rural area.

- The Houma-to-Port Neches segment originates at the Houma Pump Station near Houma, Louisiana and terminates at the Port Neches Station near Port Neches, Texas. Crude oil flows through the pipeline system from east to west. The Houma-to-Port

Neches segment is 22-inch diameter pipeline constructed in 1952 from API 5L X-52 seamless and double submerged arc-welded seam line pipe.

- PHMSA became aware of the accident on November 16, 2010, when the agency received NRC Report #960033. PHMSA initiated an investigation of the accident, which involved communication with Shell personnel, on-site investigations at the failure location, and a review of records at Shell offices in Houston.
- The Houma-to-Houston pipeline typically operates in a steady state operation between 800 to 900 psig. The MOP of the pipeline system is 1050 psig. The discharge pressure at the time of the accident was 840 psig at Sulphur Station.
- Shell removed and replaced the failed section of pipe and initiated restart of the pipeline on November 22, 2010. Shell indicated that it would restart the pipeline in accordance with the procedures outlined in *Houma-Erath-Port Neches 22-inch Pipeline Plan for Return to Operations*, which the company submitted to the Director, Southwest Region prior to restart, and which the Director found acceptable. Shell also indicated that it would maintain a 20% pressure restriction on the pipeline in accordance with the same procedures.
- The Houma-to-Houston pipeline traverses the relatively flat coastal plain as it moves from Houma through Louisiana and Texas. The accident on November 16, 2010, occurred in a topographically flat portion of the pipeline. The soil in the coastal plain typically has high clay and moisture content.
- The accident occurred in a rural, unpopulated area near Vinton, Louisiana. Much of the Houma-to-Houston pipeline right-of-way (ROW) is similarly rural, although there are High Consequence Areas, as defined in 49 C.F.R. § 195.450, near and along the pipeline, including certain high population areas, other populated areas, and commercially navigable waterways, including the Gulf Intracoastal Waterway (ICW). The accident site is approximately 500 feet north of the ICW and the pipeline is routed along the ICW in certain areas.
- The cause of the failure is unknown and the investigation is ongoing. Early assessments of the site by Shell and PHMSA personnel indicate that the cause of the failure may have been external corrosion.
- Shell performed an inline inspection (ILI) of the pipeline in 2007 using Magnetic Flux Leakage and Caliper tools. The grading report from the ILI did not provide any indications of a required repair at the location of the failure, however, a review of the raw ILI data shows an indication of corrosion was present on the pipeline joint where the failure occurred. Because a failure occurred approximately three years after the graded ILI report indicated no actionable indication, there is valid cause for concern about other potential sites along the affected pipeline that may have been assessed in a similar manner and should be reevaluated and investigated for the threat of failure.

- External corrosion can worsen over time if not properly addressed, and a pipeline that is experiencing external corrosion in one location may experience the same condition in other areas of the pipeline. External corrosion is wall loss, which increases the risk that a pipeline will no longer be adequate to contain the operating pressure and will leak or rupture.

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 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, I find that continued operation of the affected pipeline without corrective measures would be hazardous to life, property, and the environment. Additionally, having considered the age of the pipe, circumstances surrounding this failure, the possibility that the failure was caused by external corrosion that was not identified as actionable in the most recent ILI grading report, the possibility that similarly unreported external corrosion is elsewhere on the pipeline, the proximity of the pipeline to populated areas, roadways, and navigable waterways, the hazardous nature of the product the pipeline transports, the pressure required for transporting the material, the uncertainties as to the cause of the failure, and the ongoing investigation 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 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 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, Southwest Region, PHMSA. If a hearing is requested, it will be held telephonically or in-person in Houston, Texas, or Washington, D.C.

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 Shell Pipeline Company, L.P. (Shell) to immediately take the following corrective actions with respect to the Houma-to-Houston pipeline (affected pipeline):

1. The operating pressure on the Houma-to-Port Neches segment of the affected pipeline shall be under a 20% pressure reduction. Specifically, the discharge pressure at Sulphur Station shall not exceed 672 psig, which is 80% of the actual operating pressure in effect immediately prior to the November 16, 2010, failure. The discharge pressures for each of the other stations on the segment shall be limited to no more than 80% of the highest operating pressures within MOP during the 30-day period preceding the accident. This pressure restriction will 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, Southwest Region, PHMSA (Director) as set forth in Item 8. If the results of any action undertaken pursuant to this Order necessitate a reduction in the operating pressure permitted by this Order, Respondent must further reduce the operating pressure accordingly.
2. Within 30 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) Document the chain of custody when handling and transporting the failed pipe section and other evidence originating from the failure site;
 - (B) Utilize mechanical and metallurgical testing protocols, including selection of the testing laboratory, approved by the Director;
 - (C) Prior to commencing the mechanical and metallurgical testing, provide the Director with the scheduled date, time, and location of the testing to allow a PHMSA representative to witness the testing; and
 - (D) Ensure that the testing laboratory distributes all resulting reports in their entirety, 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, develop and submit to the Director for prior approval a written remedial work plan that includes corrective measures. The work plan must provide for the verification of the integrity of the Houma-to-Houston pipeline and must fully address all known or suspected factors that caused or contributed to the November 16, 2010, accident including, but not limited to:

- (A) The integration of the information developed from the actions required by Item 2 with all relevant operating data and performance of a root cause analysis of the November 16, 2010, failure;
 - (B) The performance of additional field testing, inspections, and evaluations to determine whether and to what extent the conditions associated with the failure, or any other integrity-threatening conditions, such as internal corrosion, dents or cracks, are present elsewhere on the affected pipeline. To the extent warranted by the failure analysis, include an in-line inspection with consideration for tool tolerances and confirmation excavations in the plan. In addition, should other integrity-threatening conditions be identified where hydrostatic testing is an appropriate method for integrity assessment, include such testing in the plan. 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 or its representative;
 - (C) The performance of repairs or other corrective measures that fully remediate the condition(s) associated with the pipeline failure and any other integrity-threatening condition everywhere along the affected pipeline 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.
4. The remedial work plan 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 investigation and remedial activities. Submit any such plan revisions to the Director for prior approval. The Director may approve plan elements incrementally.
5. Implement the work plan as it is approved by the Director, including any revisions to the plan. Any actions taken by Shell to meet the requirements of the work plan must be in accordance with the terms of that work plan, as approved by the Director, unless the actions have prior written approval from the Director before the actions are initiated. Make the results of all actions taken in accordance with the approved plan available to PHMSA or its representative.

6. 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 December 31, 2010.
7. Maintain documentation of the costs associated with implementation of this Corrective Action Order. Include in each quarterly report submitted pursuant to Item 6, the to-date total costs associated with: (1) preparation and revision of procedures, studies and analyses; (2) physical changes to pipeline infrastructure, including repairs, replacements and other modifications; and (3) environmental remediation.
8. The Director may allow the removal or modification of the pressure restriction set forth in Item 1 upon a written request from Respondent demonstrating that the hazard has been abated and that restoring the pipeline, or portion thereof, 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.

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.

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. 4-2010-5017H and for each document you submit, please provide a copy in electronic format whenever possible.

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. 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.

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 are effective upon receipt.



Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

NOV 23 2010

Date Issued

§ 190.231

(c) Any person who willfully and knowingly injures or destroys, or attempts to injure or destroy, any interstate transmission facility, any interstate pipeline facility, or any intrastate pipeline facility used in interstate or foreign commerce or in any activity affecting interstate or foreign commerce (as those terms are defined in 49 U.S.C. 60101 *et seq.*) shall, upon conviction, be subject for each offense to a fine of not more than \$25,000, imprisonment for a term not to exceed 15 years, or both.

(d) Any person who willfully and knowingly defaces, damages, removes, destroys any pipeline sign, right-of-way marker, or marine buoy required by 49 U.S.C. 60101 *et seq.* or 49 U.S.C. 5101 *et seq.*, or any regulation or order issued thereunder shall, upon conviction, be subject for each offense to a fine of not more than \$5,000, imprisonment for a term not to exceed 1 year, or both.

(e) Any person who willfully and knowingly engages in excavation activity without first using an available one-call notification system to establish the location of underground facilities in the excavation area; or without considering location information or markings established by a pipeline facility operator; and

(1) Subsequently damages a pipeline facility resulting in death, serious bodily harm, or property damage exceeding \$50,000;

(2) Subsequently damages a pipeline facility and knows or has reason to know of the damage but fails to promptly report the damage to the operator and to the appropriate authorities; or

(3) Subsequently damages a hazardous liquid pipeline facility that results in the release of more than 50 barrels of product; shall, upon conviction, be subject for each offense to a fine of not more than \$5,000, imprisonment for a term not to exceed 5 years, or both.

(f) No person shall be subject to criminal penalties under paragraph (a) of this section for violation of any regulation and the violation of any order issued under §190.217, §190.219 or

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§190.229 if both violations are based on the same act.

[45 FR 20413, Mar. 27, 1980, as amended by Amdt. 190-2, 54 FR 32344, Aug. 7, 1989; Amdt. 190-4, 56 FR 63770, Dec. 5, 1991; Amdt. 190-6, 61 FR 18515, Apr. 26, 1996; 70 FR 11138, Mar. 8, 2005]

§ 190.231 Referral for prosecution.

If an employee of the Pipeline and Hazardous Materials Safety Administration becomes aware of any actual or possible activity subject to criminal penalties under §190.229, the employee reports it to the Office of the Chief Counsel, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington, DC 20590. The Chief Counsel refers the report to OPS for investigation. Upon completion of the investigation and if appropriate, the Chief Counsel refers the report to the Department of Justice for criminal prosecution of the offender.

[Amdt. 190-6, 61 FR 18515, Apr. 26, 1996, as amended at 70 FR 11137, Mar. 8, 2005]

SPECIFIC RELIEF

§ 190.233 Corrective action orders.

(a) Except as provided by paragraph (b) of this section, if the Associate Administrator, OPS finds, after reasonable notice and opportunity for hearing in accord with paragraph (c) of this section and §190.211(a), a particular pipeline facility to be hazardous to life, property, or the environment, the Associate Administrator, OPS shall issue an order pursuant to this section requiring the owner or 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) The Associate Administrator, OPS may waive the requirement for notice and opportunity for hearing under paragraph (a) of this section before issuing an order pursuant to this section when the Associate Administrator, OPS determines that the failure to do so would result in the likelihood of serious harm to life, property, or the environment. However, the Associate Administrator, OPS shall provide an opportunity for a hearing as soon as is

practicable after the issuance of a compliance order. The provisions of paragraph (c)(2) of this section apply to an owner or operator's decision to exercise its opportunity for a hearing. The purpose of such a post-order hearing is for the Associate Administrator, OPS to determine whether a compliance order should remain in effect or be rescinded or suspended in accord with paragraph (g) of this section.

(c) Notice and hearing:

(1) Written notice that OPS intends to issue an order under this section shall be served upon the owner or operator of an alleged hazardous facility in accordance with §190.5. The notice shall allege the existence of a hazardous facility and state the facts and circumstances supporting the issuance of a corrective action order. The notice shall also provide the owner or operator with the opportunity for a hearing and shall identify a time and location where a hearing may be held.

(2) An owner or operator that elects to exercise its opportunity for a hearing under this section must notify the Associate Administrator, OPS of that election in writing within 10 days of service of the notice provided under paragraph (c)(1) of this section, or under paragraph (b) of this section when applicable. The absence of such written notification waives an owner or operator's opportunity for a hearing and allows the Associate Administrator, OPS to issue a corrective action order in accordance with paragraphs (d) through (h) of this section.

(3) A hearing under this section shall be presided over by an attorney from the Office of Chief Counsel, Pipeline and Hazardous Materials Safety Administration, acting as Presiding Official, and conducted without strict adherence to formal rules of evidence. The Presiding Official presents the allegations contained in the notice issued under this section. The owner or operator of the alleged hazardous facility may submit any relevant information or materials, call witnesses, and present arguments on the issue of whether or not a corrective action order should be issued.

(4) Within 48 hours after conclusion of a hearing under this section, the Presiding Official shall submit a rec-

ommendation to the Associate Administrator, OPS as to whether or not a corrective action order is required. Upon receipt of the recommendation, the Associate Administrator, OPS shall proceed in accordance with paragraphs (d) through (h) of this section. If the Associate Administrator, OPS finds the facility is or would be hazardous to life, property, or the environment, the Associate Administrator, OPS shall issue a corrective action order in accordance with this section. If the Associate Administrator, OPS does not find the facility is or would be hazardous to life, property, or the environment, the Associate Administrator shall withdraw the allegation of the existence of a hazardous facility contained in the notice, and promptly notify the owner or operator in writing by service as prescribed in §190.5.

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

(1) If under the facts and circumstances the Associate Administrator, OPS 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, OPS determines is hazardous to life, property, or the environment, unless the operator involved demonstrates to the satisfaction of the Associate Administrator, OPS 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, OPS 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),

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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, OPS may consider appropriate.

(f) A corrective action order shall contain the following information:

(1) A finding that the pipeline facility is 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, OPS shall rescind or suspend a corrective action order whenever the Associate Administrator, OPS determines that the facility is no longer hazardous to life, property, or the environment. When appropriate, however, such a rescission or suspension may be accompanied by a notice of probable violation issued under § 190.207.

(h) At any time after a corrective action order issued under this section has become effective, the Associate Administrator, OPS 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

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enforce orders issued under this section by appropriate means.

[70 FR 11138, Mar. 8, 2005]

§ 190.235 Civil actions generally.

Whenever it appears to the Associate Administrator, OPS that a person has engaged, is engaged, or is about to engage in any act or practice constituting a violation of any provision of 49 U.S.C. 60101 *et seq.*, or any regulations issued thereunder, the Administrator, PHMSA, or the person to whom the authority has been delegated, may request the Attorney General to bring an action in the appropriate U.S. District Court for such relief as is necessary or appropriate, including mandatory or prohibitive injunctive relief, interim equitable relief, civil penalties, and punitive damages as provided under 49 U.S.C. 60120 and 49 U.S.C. 5123.

[70 FR 11139, Mar. 8, 2005]

§ 190.237 Amendment of plans or procedures.

(a) A Regional Director begins a proceeding to determine whether an operator's plans or procedures required under parts 192, 193, 195, and 199 of this subchapter are inadequate to assure safe operation of a pipeline facility by issuing a notice of amendment. The notice shall provide an opportunity for a hearing under § 190.211 of this part and shall specify the alleged inadequacies and the proposed action for revision of the plans or procedures. The notice shall allow the operator 30 days after receipt of the notice to submit written comments or request a hearing. After considering all material presented in writing or at the hearing, the Associate Administrator, OPS shall determine whether the plans or procedures are inadequate as alleged and order the required amendment if they are inadequate, or withdraw the notice if they are not. In determining the adequacy of an operator's plans or procedures, the Associate Administrator, OPS shall consider:

(1) Relevant available pipeline safety data;

(2) Whether the plans or procedures are appropriate for the particular type of pipeline transportation or facility, and for the location of the facility;