



U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

APR 9 2004

Mr. Randy Barnard
Vice President of Operations
Williams Gas Pipeline - Northwest
2800 Post Oak Boulevard
MD - 21
Houston, TX 77056

Re: CPF No. 5-2003-1003-H

Dear Mr. Barnard:

Enclosed is the Post Hearing Decision to the Amendment to the Corrective Action Order in this case. The Post Hearing Decision includes a Second Amendment to the Corrective Action Order and proposes an additional amendment. The Second Amendment clarifies and modifies some of the provisions of the December 18, 2003 Amendment to the Corrective Action Order. This Post Hearing Decision also notifies you of a proposed amendment that would require you to take additional corrective action involving your communication and liaison procedures with public officials and provide progress reports on the work done under the order.

Service is being made by certified mail and facsimile. Your receipt constitutes service under 49 C.F.R. § 190.5. The terms and conditions of this Second Amendment to the Corrective Action Order are effective upon receipt. You have the right to a hearing with respect to the proposed additional amendment.

Sincerely,

FOR
James Reynolds
Pipeline Compliance Registry
Office of Pipeline Safety

Enclosure

VIA CERTIFIED MAIL (RETURN RECEIPT REQUESTED) AND TELECOPY

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

In the Matter of)

Williams Gas Pipeline - Northwest,)

Respondent.)

CPF No. 5-2003-1003-H

**POST-HEARING DECISION --
SECOND AMENDMENT TO THE CORRECTIVE ACTION ORDER
AND PROPOSED FURTHER AMENDMENT**

Purpose and Background

On May 2, 2003, the Associate Administrator for Pipeline Safety issued a Corrective Action Order (May 2 Order) in this case, under authority of 49 U.S.C. § 60112, finding that continued operation by Williams Gas Pipeline - Northwest (Respondent) of its 26-inch natural gas pipeline in western Washington State would be hazardous to the public, property, and the environment without corrective measures. The May 2 Order was issued as a result of the May 1, 2003 rupture of the line at mile post 1352.7 near Lake Tapps in Pierce County, Washington.

On December 13, 2003, the line ruptured again. This time the failure occurred near Toledo, Lewis County, Washington. On December 18, 2003, the Associate Administrator issued an Amendment to the Corrective Action Order (Amendment) to require additional corrective measures. By letter of December 29, 2003, Respondent requested a "hearing and clarification" and enumerated six items of the Amendment it intended to address.

A hearing was conducted on January 26, 2004 in the OPS offices in Lakewood, Colorado. Representatives of the Washington Utilities and Transportation Commission (WUTC), which participated in the investigation of the accidents as an interstate agent, participated in the hearing. In addition to the six items enumerated in the response, Respondent raised issues and sought clarification with respect to other items of the Amendment. On February 9, Respondent filed its post-hearing submission.

Discussion of Items Raised by Respondent

Pressure restriction on Sumas to Mt Vernon segment. Respondent noted that it had been unable to comply with Item 1 of the Amendment on the Sumas to Snohomish portion of the line. Item 1 required reduction of the line pressure to 100 psi by mid-January. By letter of January 12, 2004, Respondent had requested additional time to achieve that pressure. Respondent contends that

achieving the reduced pressure can only be done by venting a considerable amount of gas to the atmosphere in the more populated area of the line. Respondent has been unable to reduce the pressure on this segment below 100 psi and still operate the line. Respondent confirmed that this pressure is less than 20% of the specified minimum yield strength of the pipe, a pressure at which it is highly unlikely to rupture. The line was subsequently depressurized for integrity testing. However, if return to full service is delayed, there is a need to prescribe an acceptable interim pressure. The Regional Director concurs that operation of this segment at pressures up to 200 psi would not likely result in failure. Accordingly, paragraph a. below modifies Item 1 to grant relief.

Metallurgical Analysis. Item 2 of the Amendment required Respondent to submit the original of the metallurgical report to the Regional Director within one week of receipt. The Regional Director noted that the goal was to ensure that OPS saw the original version of the metallurgical analysis and that having the laboratory mail the copy simultaneously with forwarding the report to Respondent would achieve this. Respondent has now submitted a copy of the original report to the Regional Director.

Integrity management program. Respondent requested clarification with respect to Item 3 of the Amendment:

3. Integrity management. Finalize an integrity management program that conforms to the requirements for integrity management programs published on December 15, 2003 (new subpart O to 49 C.F.R. Part 192) on an expedited basis. The program must address the factors involved in the failures on the line that have occurred since 1990, including stress corrosion cracking and land movement, as risks. Submit this program **within 90 days** of issuance of this Amendment for approval by the Director, Western Region.

Specifically, Respondent noted the difficulty of developing a plan that will satisfy all of the detailed requirements of the December 15 final rule prior to the development of the protocols and guidance that OPS has indicated will be forthcoming. The Regional Director agreed that some of the details may need to be filled in later, but noted that, based on a December 10, 2003 meeting, Respondent had already done a considerable amount of work in analyzing the risks on the lines subject to this order. It is not unreasonable to require Respondent to produce a first version of an integrity management plan for the lines covered by this order on an expedited basis. At the hearing, the Regional Director agreed to review an early draft and provide feedback on the adequacy of the plan to meet the requirements of the Amendment and the areas which Respondent may need to address in the future as it implements the integrity management program for its entire system. Respondent informally submitted its draft on February 2, 2004 and has engaged in discussions with regional staff about the scope. To allow these discussions to continue, the Regional Director extended time for submitting the program until April 18, 2004. Accordingly, paragraph b. below modifies item 3 of the Amendment to again allow for a slight extension of time and to allow for future development of a complete integrity management program.

Pipe replacement. Item 4 of the Amendment requires Respondent to develop a prioritized plan to remove pipe that is subject to stress corrosion cracking from the 26-inch line if it intends to request removal of the current pressure restrictions. The plan may allow for implementation to extend over a ten-year period. Although the term “replacement” is used, nothing in the Amendment requires Respondent to continue operating or to replace the line pipe with pipe of equivalent size. Respondent would satisfy the replacement requirement by constructing a new pipeline that meets future capacity needs and abandoning (in accordance with 49 C.F.R. § 192.605) all or sections of the current 26-inch line requiring replacement.

As an initial argument, Respondent challenges the need to replace pipe in the 26-inch line. Respondent argues that OPS lacks authority to order replacement with the information available to it. Respondent urges OPS to consider an approach that allows the line to continue in service indefinitely so long as it is managed through an integrity management program. Section 60112 of Title 49, United States Code, expressly allows OPS to order “suspended or restricted use of the facility, . . . , replacement, or other appropriate action” if the agency determines that the pipeline facility at issue is or would be hazardous but for the corrective actions. As already noted, replacement in this context does not require Respondent to replace with equivalent pipe, but does require that the hazardous pipe be removed from service. In this case, OPS has presented evidence of numerous SCC failures that have occurred on the line. There is evidence that the pipe is subject to several of the factors in SCC – nature of the coating, environmental conditions, and metallurgical toughness of the pipe. The same toughness factors make the pipe prone to failure during land movement, which is also a well-recognized risk in the area. Respondent has not challenged this evidence or the conclusion of OPS that corrective action is needed. The question comes down to the reasonableness of a requirement to remove pipe rather than to manage the risk of SCC and earth movement through some other means.

Evidence of pipeline failure due to land movement was detailed in the May 2 Order in this case. The following indicates that SCC is a serious and pervasive problem on this line:

- The metallurgical report on the 1992 SCC failure south of Snohomish indicated that there was a family of deep cracks on the pipe examined. The report recommended periodic hydrostatic testing to identify and remove the SCC in the line.
- Hydrostatic testing of a 4.8 mile segment of a 16-inch lateral in 1994 resulted in 22 SCC failures.
- The report on the 1999 Mt. Pleasant failure noted 21 other cracks in addition to the crack that caused the failure.
- The report on the May 1, 2003 SCC failure noted numerous other cracks due to SCC in the pipe examined.
- The report on the December 13, 2003 SCC failure that underlies the Amendment also indicates that there are several other cracks due to SCC that had not failed in the pipe tested.

- The Ultrascan crack detection done in 2003 revealed 38 SCC colonies in the three miles from Sumner to White River. There have been 8 digs in this three-mile segment in which over a hundred anomalies have been noted. At least one of these was a crack with 100% penetration of the pipe and at least 10 had a depth of more than 25%.

At the hearing, Respondent claimed that the transverse field inspection tool (TFI) can accurately detect, and thus be used to manage, SCC in the 26-inch line. Noel Duckworth, an expert in internal inspection technology, discussed the limitations of the TFI in locating SCC. In his opinion, the tool does not at this time reliably detect SCC sufficiently in advance of failure for it to be used for long-term management. The limitations stem from the manner in which the tool measures anomalies, rather than from the quality of the analysis done of the inspection data. Although Respondent pointed out that Mr. Duckworth's assessment was opinion, not fact, Respondent did not present evidence that supported a contrary view. OPS is left with the information before it. There is a history of SCC with two failures in the past year, the existence of several known parameters for SCC, an expert opinion that TFI will not detect SCC in time to prevent failure, and no countervailing evidence.

Respondent indicates that a complete understanding of the SCC parameters at issue could allow an integrity management program to eliminate the threat of SCC failures and that it should not be ordered to replace the line until it can gain that complete understanding. It is not clear, however, when Respondent will have enough information to present such a case or whether technology will indeed provide sufficient certainty to manage the SCC on this line for an indefinite time. Respondent indicates that hydrotesting being done may provide data that would be helpful and that Ultrascan crack detection has been accurate. However, discussions at the hearing indicate that Ultrascan cannot be used on the entire system because of the hilly terrain. In the meantime, OPS is faced with the real risk of a future failure.

The Amendment does not require Respondent to replace line pipe if replacement is not necessary for safety and is otherwise reasonable with respect to the replacement program. The terms of the Amendment expressly provide Respondent with the opportunity to present the case that a particular segment is not subject to SCC and that replacement is not necessary (Items 4.v. and 6). As examples, this showing could be evidence that, because of different construction, manufacturing techniques, or pipe materials, a particular segment is not subject to SCC.

To the extent that extenuating circumstances mean that, despite all efforts, Respondent cannot make a decision about replacement of the capacity within the 120 days currently required for a replacement plan, the order allows for extensions of time for good cause. In addition, if the hydrotesting and trials of the Ultrascan crack detection provide new unexpected and convincing data indicating that SCC can be managed on this line, Respondent may request OPS to amend the order with respect to the replacement program. Accordingly, this Second Amendment does not change the requirements of Item 4 of the Amendment which addresses the current risks according to the current reality.

Managing SCC until replacement. Item 5 of the Amendment provides a provision for Respondent to seek removal from pressure restrictions for pipe in the replacement program. The basis is an adequate demonstration that SCC can be managed as a temporary measure through periodic hydrostatic testing or internal inspection. Respondent has requested some modification of these procedures.

First, Respondent has asked that it be allowed to return a segment to service after successful completion of a hydrostatic test but prior to the establishment of the interval for retesting. Respondent asks that it be allowed 90-120 days to establish this interval. This additional time will allow for better analysis of the test data, including analysis of any failures that occur. There is literature available that provides guidance on appropriate retest intervals and it is appropriate that Respondent use this guidance to establish an interim interval prior to requesting permission to return to service. If this is done, allowing Respondent to adjust the retest interval within 90 days after complete analysis is reasonable. This provides assurance that there will always be an interval in place for retesting. Paragraph c. below provides for this modification.

Second, Respondent has asked that the "spike test" be conducted for no more than 30 minutes rather than for the 1 hour provided in Item 5. iii. and that the pressure of 110% of the specified minimum yield strength (SMYS) not be required for the entire segment. The Regional Director has agreed that this is acceptable provided the entire segment be tested to a minimum of 100% SMYS with the weakest pipe, typically 0.281-inch pipe, testing to 110% SMYS at some point in the test section. Respondent's post-hearing comments assert that the Regional Director has indicated that only 0.281-inch pipe need be tested. That assertion is incorrect and all pre-1970 pipe must be tested. Paragraph c. below provides for modification with respect to the terms of the "spike test".

Third, Respondent has asked that, if internal inspection using a combination of TFI and magnetic flux tools is used, it be allowed up to one year to address the anomalies after a return to service. Some anomalies may require expedited repair, but a repair schedule that addresses the most critical first (prior to return to service) and allows additional time for noncritical repairs is acceptable. Paragraph d. below provides for this modification.

Finally, discussion at the hearing indicated public concern about safety when work is done on a pipeline and Respondent's willingness to include provisions for a public safety procedure in the protocol for hydrostatic testing. Based on continuing concern from local officials, OPS proposes, below, to further amend this corrective action order to provide for a public safety procedure for all activities conducted under the order that could create the need for public safety decision-making by federal, state, or local officials.

Evaluation of other lines. Item 8 requires Respondent to evaluate certain other lines for susceptibility to SCC and to report the findings and response to the Regional Director. Respondent has sought clarification as to the requirement. Item 8 does not require Respondent to evaluate the other lines using hydrostatic testing or internal inspection, or indeed to select either in selecting the

response to the evaluation. If, at some time in the future, OPS determines that either is needed, it may further amend the order. No change to the Amendment is needed.

Modifications of the Required Corrective Action of the Amendment

Pursuant to 49 U.S.C. § 60112, I hereby amend the corrective action of the December 18, 2003 Amendment to the Corrective Action Order (Amendment) as follows:

- a. Item 1 of the Amendment (addressing pressure restrictions on the 26-inch line) is amended by adding the following language:

If a reduced pressure of 100 psi cannot be maintained on the Sumas to Snohomish segment, Respondent may reduce the pressure and operate the line at a maximum pressure of 200 psi as needed to maintain a minimal line pack on the segment.

- b. Item 3 of the Amendment is modified to read as follows:

3. Integrity management. Develop an integrity management program covering the lines subject to this order that substantially conforms to the requirements for integrity management programs published on December 15, 2003 (new subpart O to 49 C.F.R. Part 192) on an expedited basis. The program must address the factors involved in the failures on the line that have occurred since 1990, including stress corrosion cracking and land movement, as risks. The program must include at least the following elements of an integrity management program: 49 C.F.R. §§ 192.911(a), (b), (c), (e), (f), (h), (i), (j), (l) and (m). Submit this program to the Director, Western Region **by April 30, 2004** for his approval.

- c. Item 5 iii. of the Amendment is modified to read:

iii. Successful completion of hydrostatic testing must include a "spike test"; that is, a test with some portion of the segment experiencing 110 percent of the specified minimum yield strength of the weakest pipe in the test section for a period of 30 minutes and no segment experiencing less than 100 percent. The spike test must be followed by a test at a minimum of 90 percent of the specified minimum yield strength for eight hours. Each failure must be metallurgically tested to identify cause and failed pipe must be replaced with pretested pipe.

In supporting the request for removal of the pressure restriction, Respondent may submit for approval an interim interval for reassessment of a pipe section based upon general guidance. Respondent must then provide a final interval for reassessment based upon additional analysis within 90 days of removal of the pressure restriction.

d. The last bullet of Item 5. iv. of the Amendment is modified to read as follows:

- Following written procedures approved by the Director, Western Region, that include fitness for service criteria for identifying, prioritizing, and correcting defects within one year after removal of the pressure restriction.

The terms and conditions of this Amendment are effective upon receipt. Failure to comply with this Order may result in the administrative 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.

Proposed Further Amendment - Public Safety Procedures; Progress Reports

Since I issued the Amendment to the Corrective Action Order, public safety officials have expressed concern that an ineffective and uncoordinated flow of information from the Respondent about the pipelines is hindering their ability to execute their public safety responsibilities and to protect persons in the vicinity of the pipeline. This proposed additional amendment proposes additional corrective measures based on the following:

- In meetings with the Associate Administrator for Pipeline Safety, public officials from Skagit, Puyallup and Bellevue, WA, and representatives of the WUTC expressed concern that more information from Respondent about the condition and ongoing operations of the subject pipeline was necessary to avoid confusion, enhance coordination and better protect the citizens for whom the officials are responsible.
- In a meeting with the Associate Administrator for Pipeline Safety, the Fire Chief of Puyallup, WA expressed concern that more information from Respondent concerning its planned operating activities was necessary for the Fire Chief to effectively carry out his responsibilities.

In addition, corrective action orders with extensive measures require significant monitoring effort on the part of OPS. Based on the experience thus far, OPS believes that periodic progress reports are necessary for effective monitoring.

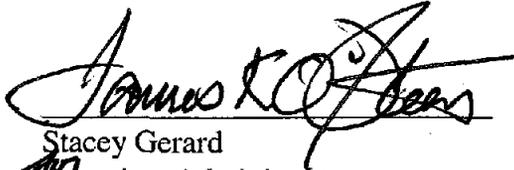
Accordingly, I propose to further amend this corrective action order by adding the following items:

10. Identify actions or series of actions taken under this order that may require rapid decision-making by responsible authorities at the community level to protect the public safety such as through evacuations, road closings, or notifications of police, fire, or other emergency responders (such actions would include, but are not limited to, line restarts, pressure testing, purging, and other significant excavation activities). Develop procedures for communicating timely notice of such actions to federal, state, and local officials and for maintaining liaison to coordinate pre-planned and actual response activities with the appropriate officials that provide for appropriate notice to the public officials. Provide a copy of these procedures to the Director, Western Region, within 30 days (of issuance of an amendment including this term).

11. Provide Progress Reports on actions taken under this order on a monthly basis to the Director, Western Region, that include at least the following information:

- i. Number of miles of pipe hydrostatically tested, number of failures, and suspected causes with updates based on results of the metallurgical testing.
- ii. (For each type of nondestructive test performed) The number of miles tested, the number and nature of anomalies found, and the number and nature of repairs made.

Within 10 days of receipt of this proposed amendment, Respondent 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 Lakewood, Colorado or Washington, DC on a date that is mutually convenient to OPS and Respondent. Failure to respond authorizes the Associate Administrator to issue an amendment consistent with this notice.


Stacey Gerard
Associate Administrator
for Pipeline Safety

APR - 9 2004

Date Issued