U.S. Department
of Transportation

Pipeline and Hazardous Materials
Safety Administration

1200 New Jersey Ave., SE
Washington, DC 20590

AUG 31 2010

Mr. Ronald G. McClain
Vice President, Operations and Engineering
Products Pipelines
Kinder Morgan Energy Partners, L.P.
500 Dallas Street, Suite 1000
Houston, TX 77002

**Re: CPF No. 4-2006-5023**

Dear Mr. McClain:

Enclosed please find the Final Order issued in the above-referenced case. It makes findings of violation, assesses a civil penalty of $35,000, and specifies actions that need to be taken by Kinder Morgan Energy Partners, L.P., to comply with the pipeline safety regulations. The penalty payment terms are set forth in the Final Order. When the civil penalty has been paid and the terms of the compliance order completed, as determined by the Director, Southwest Region, this enforcement action will be closed. Service of the Final Order by certified mail is deemed effective upon the date of mailing, or as otherwise provided under 49 C.F.R. § 190.5.

Thank you for your cooperation in this matter.

Sincerely,

for Linda Daugherty

Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

Enclosure

cc: Mr. Paul Biancardi, Counsel for Kinder Morgan Energy Partners, L.P.
5818 Beaver Falls Drive
Kingwood, Texas 77345

Mr. R.M. Seeley, Director, Southwest Region, PHMSA

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED [7009 1410 0000 2472 2797]**

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

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| **In the Matter of** | ) | |
| **Kinder Morgan Energy Partners, L.P.,** | ) | **CPF No. 4-2006-5023** |
| **Respondent.** | ) | |

## FINAL ORDER

On December 13-17, 2004, and August 1-5, 2005, pursuant to 49 U.S.C. § 60117, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), conducted an on-site pipeline safety inspection of the facilities and records of Kinder Morgan Energy Partners, L.P. (Respondent or KM), in New Mexico, Texas, and Louisiana. In addition, from November 28 through December 16, 2005, pursuant to 49 U.S.C. § 60117, a representative of the Arizona Corporation Commission, as agent for OPS, conducted an on-site pipeline safety inspection of Respondent's facilities and records in Arizona.

The inspection covered facilities and records pertaining to a portion of Respondent's Santa Fe Pacific Pipeline (SFPP) and Cypress Pipeline (Cypress) systems.[1] SFPP transports various liquid hydrocarbon products and consists of approximately 372 miles of pipeline in New Mexico and Texas and 671 miles of pipeline in Arizona. Cypress transports Highly Volatile Liquids (HVLs), including ethane and propane, and consists of approximately 104 miles of pipeline in Texas and Louisiana.

As a result of the inspection, the Director, Southwest Region, OPS (Director), issued to Respondent, by letter dated May 30, 2006, a Notice of Probable Violation, Proposed Civil Penalty, and Proposed Compliance Order (Notice). In accordance with 49 C.F.R. § 190.207, the Notice proposed finding that Respondent had violated 49 C.F.R. §§ 195.406(b), 195.410(a)(1), 195.573(a)(1), and 195.579(a), assessing a civil penalty of $35,000 for the alleged violations, and ordering Respondent to take certain measures to correct the alleged violations. The Notice also proposed finding that Respondent had committed certain probable violations of 49 C.F.R. 195.420(c) and warning Respondent to take appropriate corrective action to address them or be subject to future enforcement action.

[1] Both pipeline systems are owned by Kinder Morgan Energy Partners, L.P., and operated by its subsidiaries. The subject portion of the SFPP pipeline system is operated by SFPP, L.P., and the Cypress Pipeline system is operated by Kinder Morgan Operating, L.P.

KM responded to the Notice by letter dated June 30, 2006 (Response). The company contested all the allegations and requested a hearing. At Respondent's request, the materials in the OPS case file, including the OPS Violation Report, were provided to Respondent on January 24, 2007. A hearing was held on February 9, 2007, in Houston, Texas, with an attorney from the Office of Chief Counsel, PHMSA, presiding. Respondent provided numerous documents at the hearing (Hearing Exhibits), which have been incorporated into the record for this case. Respondent was represented by counsel in this matter. Respondent arranged for an unofficial transcript of the hearing and provided copies to PHMSA on March 26, 2007.[2] After the hearing, KM provided additional information on March 26, 2007 (Closing).

## FINDINGS OF VIOLATION

The Notice alleged that Respondent violated 49 C.F.R. Part 195, as follows:

**Item 1:** The Notice alleged that Respondent violated 49 C.F.R. § 195.406(b), which states:

> **§ 195.406 Maximum operating pressure.**
> (a) ...
> (b) No operator may permit the pressure in a pipeline during surges or other variations from normal operations to exceed 110 percent of the operating pressure limit established under paragraph (a) of this section. Each operator must provide adequate controls and protective equipment to control the pressure within this limit.

The Notice alleged that KM violated 49 C.F.R. § 195.406(b) by failing to provide adequate controls and protective equipment to control the pressure on its SFPP and Cypress pipelines within the limits established under § 195.406(a). Specifically, it alleged that neither system used full-flow pressure relief valves and breakout tanks to relieve surges. At the hearing, OPS presented evidence that its inspectors observed that KM's pipelines did not have such pressure control devices, which led them to seek other evidence to indicate whether the lines had adequate controls and protective equipment. KM contested this allegation on both factual and legal grounds.

First, KM characterized Item 1 as an alleged failure to provide *documentation* of compliance with § 195.406(b).[3] Respondent argued that § 195.406(b) contains no documentation requirement and that therefore OPS' allegation was based on a new interpretation of the regulation, of which KM did not have fair notice. I reject KM's characterization of the allegation and its fair notice argument. During the inspection, OPS observed that Respondent's systems did not have full-flow pressure relief valves or breakout tanks. These devices are commonly used to

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[2] I consider the transcript to be unofficial. PHMSA noted that the transcript contains numerous errors and misattributions, but because of the informal nature of this matter, errors were not corrected before the transcript was finalized and made part of the record.

[3] *Response* at 2.

relieve pressure on pipelines during surges or other types of overpressure situations. The absence of these devices led OPS to question whether Respondent had the adequate controls and protective equipment required by the regulation. The Notice simply noted that KM could not produce any documentation that it had taken steps to protect its systems from overpressure or that it had actually considered the need for surge prevention. Nothing in the record indicates that OPS attempted to impose any sort of new documentation requirement or to cite KM for a failure to maintain records under § 195.406(b).

Second, KM argued that OPS, at the hearing, appeared to base the allegation of violation on a statutory provision found in 49 U.S.C. § 60117(b) of the Pipeline Safety Laws. KM argued that no statutory violation could be found since none had been alleged in the Notice. Section 60117(b) requires pipeline owners or operators to "(1) maintain records, make reports, and provide information the Secretary requires; and (2) make the records, reports, and information available when the Secretary requests."[4] Although § 60117(b) gives PHMSA broad authority to require pipeline owners or operators to provide documentation of compliance, OPS made clear in the Notice and at the hearing that the basis of its allegation was KM's failure to provide adequate controls and protective equipment, as required by § 195.406(b).

Third, Respondent provided several documents in support of the argument that it had considered surge overpressure and had provided adequate controls and protective equipment on its pipelines.[5]

Specifically, Respondent provided pump station discharge and emergency and abnormal operation records. KM argued that these records supported its contention that pipeline pressures had never exceeded the 110% Maximum Operating Pressure (MOP) limit set by the regulation and that OPS had failed to show that the company had ever exceeded the 110% limit.[6] OPS, however, did not allege that Respondent had exceeded such MOP on the subject pipelines but, rather, that KM had failed to provide adequate controls and protective equipment to prevent the pressure from exceeding 110% of MOP. Furthermore, Respondent's operating history does not confirm the adequacy of controls and protective equipment, nor does it indicate that surge overpressure had been adequately analyzed. A lack of historical overpressure events on these systems may have been more a matter of luck than compliance with the regulation.

KM also provided various MOP studies that had been conducted of the SFPP and Cypress pipelines, but these too fail to establish that the company had provided adequate controls and protective equipment to control pressure within the prescribed limits.[7] The SFPP studies only

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[4] 49 U.S.C. § 60117(b). The authorities vested in the Secretary of Transportation by § 60117 have been delegated to PHMSA by 49 C.F.R. § 1.53.

[5] *Response* at 2.

[6] *Id.*

[7] *Hearing Exhibit 1A*, SPEC SERVICES, PRELIMINARY WESTERN PIPELINES MAXIMUM OPERATING PRESSURE STUDY, L.S. 17-19/21/22 EL PASO– TUCSON (23 Dec. 2003); *Hearing Exhibit 1B*, SPEC SERVICES, PRELIMINARY WESTERN PIPELINES MAXIMUM OPERATING PRESSURE STUDY, L.S. 4/5/6/86 EL PASO – TUCSON (23 Dec. 2003); *Hearing*

considered a narrow range of scenarios and did not account for others that could lead to overpressure events. For example, the studies did not account for the possibility of a pressure wave rebound off a suddenly closed valve after an abnormal station shut-down. Nor did the studies consider the possibility of valve closures other than for station valves. The studies even acknowledged the possibility that overpressure events could occur. Finally, KM made significant modifications to the SFPP system after the completion of the studies in 2003. Such modifications could have changed what overpressure equipment and controls were necessary to protect SFPP, yet there is no evidence in the record that the effects of such modifications on the risk of overpressure were ever considered. Without considering such modifications, Respondent could not accurately determine whether its controls and protective equipment were adequate.

As for KM's Cypress study, it was completed in 2007, long after the inspection had been conducted and the Notice issued in this proceeding.[8] In addition, the study evaluated a single surge overpressure scenario involving the closure of a delivery valve. Other potential surge overpressure scenarios were not considered at all. Therefore, I find that the 2007 study is not probative of whether Respondent provided adequate controls and protective equipment on the Cypress line as of the dates of the 2004-05 inspections.

Finally, KM argued that an engineer for Enron, the previous operator of the Cypress Pipeline, had informed Respondent that a surge study had been performed on that line prior to KM's acquisition. Respondent stated that this engineer had represented that "surge was not an issue for this HVL pipeline."[9] KM provided no documentation of this study or basis for such a statement. In the absence of evidence beyond an undated, undocumented verbal statement, I cannot conclude that KM provided adequate controls and protective equipment on the Cypress Pipeline.

Inherent in the requirement that KM provide "adequate" controls and protective equipment is the company's obligation to use reasonable means to determine what is "adequate" for its own pipeline systems and to document such a decision-making process. If Respondent has not performed such an analysis, it might, for example, select undersized protective equipment or an insufficient number of pressure control devices. Without such an analysis, neither Respondent nor PHMSA can determine whether it has simply been a matter of luck that an overpressure situation has not occurred.

Accordingly, after considering all of the evidence, I find that Respondent violated 49 C.F.R. § 195.406(b) by failing to provide adequate controls and protective equipment to control the pressure on its SFPP and Cypress systems within the limits established according to § 195.406(a).

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*Exhibit 1C*, ANALYSIS OF RECOMMENDATIONS, PRELIMINARY 2003 SURGE REPORTS FOR 8" AND 12" EI PASO TO TUCSON PIPELINE.

[8] *Hearing Exhibit 1D, LINDEN PROFESSIONAL SERVICES, CYPRESS PIPELINE SYSTEM HYDRAULIC and SURGE ANALYSIS* (1 Feb. 2007).

[9] *Response* at 2.

**Item 2:** The Notice alleged that Respondent violated 49 C.F.R. § 195.410(a)(1), which states:

> **§ 195.410 Line markers.**
>
> (a) Except as provided in paragraph (b) of this section, each operator shall place and maintain line markers over each buried pipeline in accordance with the following:
>
> (1) Markers must be located at each public road crossing, at each railroad crossing, and in sufficient number along the remainder of each buried line so that its location is accurately known.

The Notice alleged that KM violated 49 C.F.R. § 195.410(a)(1) by failing to place and maintain line markers over its SFPP Pipeline in sufficient number so that the line's location was accurately known. Specifically, it alleged that when crossing cultivated agricultural fields, the markers on the far side of the field often could not be seen. The Notice also alleged that the location of the pipeline could not be discerned in some locations because of tall brush on the right-of-way.

KM objected to the so-called "line-of-sight" test used by OPS to determine the adequacy of Respondent's pipeline marking in cultivated fields and argued that it did not have fair notice that the regulation required such a test. PHMSA acknowledges that while many operators follow the so-called "line-of-sight" test, as applied in the Notice in this case, many others do not. Furthermore, the regulation does not expressly require "line-of-sight." In an effort to arrive at greater consensus on this and other line-marking issues, PHMSA convened a public workshop in 2008 and is currently considering whether to issue a notice of proposed rulemaking.[10] Under such circumstances, I find it appropriate to withdraw this portion of the allegation of violation. Such withdrawal neither constitutes an interpretation of § 195.410(a)(1) nor prejudices future potential enforcement action against Respondent or any other operator. Having withdrawn this portion of the allegation, I do not reach Respondent's fair notice argument on the "line-of-sight" test.

KM did not contest the allegation that in some areas the location of the pipeline could not be discerned because of tall brush in the right-of-way.[11] KM indicated that it would "review the [right-of-way] for tall brush impeding the view of the line markers and eliminate the same."[12] Accordingly, based on the foregoing, I find that Respondent violated 49 C.F.R. § 195.410(a) by failing to maintain line markers over the SFPP pipeline so that its location was accurately known.

**Item 4:** The Notice alleged that Respondent violated 49 C.F.R. § 195.573(a)(1), which states:

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[10] PHMSA held a public workshop on February 20-21, 2008, in Houston, Texas, to discuss, among other issues, the placement of line markers. *Pipeline Safety: Workshop on Public Awareness Programs for Pipeline Operators and Location of Line Markers,* 73 Fed. Reg. 223 (Jan. 2, 2008).

[11] *Response* at 3.

[12] *Id.*

**§ 195.573 What must I do to monitor external corrosion control?**

(a) *Protected pipelines.* You must do the following to determine whether cathodic protection required by [Subpart H] complies with § 195.571:

(1) Conduct tests on the protected pipeline at least once each calendar year, but with intervals not exceeding 15 months. However, if tests at those intervals are impractical for separately protected short sections of bare or ineffectively coated pipelines, testing may be done at least once every 3 calendar years, but with intervals not to exceed 39 months.

The Notice alleged that KM violated 49 C.F.R. § 195.573(a) by failing to properly conduct tests on its cathodically protected pipelines. Specifically, it alleged that KM failed to consider IR drop[13] during the Company's annual corrosion surveys on the SFPP and Cypress pipeline systems.

The primary purpose of the annual testing required by § 195.573(a)(1) is to provide an operator with sufficient information about its cathodic protection system to determine whether it is meeting the requirements of § 195.571. Such information allows an operator to take action to remedy any inadequate cathodic protection and to comply with one or more of the applicable criteria and other considerations contained in paragraphs 6.2 and 6.3 of NACE Standard RP0169-2002 (NACE Standard).[14]

Cathodic protection can limit external corrosion on buried pipelines through the application of direct electric current to the metal of the pipeline. Protection is achieved when current flows to the metal in an amount sufficient to prevent the loss of metal from the pipeline to the surrounding environment. If insufficient current is provided, corrosion can result. The NACE Standard provides reference criteria against which Respondent can measure the flow of electric current to or from its pipelines (pipe-to-soil potential).

In order to obtain an accurate reading of pipe-to-soil potential, Respondent must consider IR drop when it conducts annual tests of its cathodic protection system. If IR drop is not considered, cathodic protection may appear to meet the criteria required by § 195.571, when, in fact, it does not. Therefore, when IR drop is not considered, such surveys do not achieve their intended purpose and therefore do not comply with § 195.573(a).

Paragraph 6.2 of the NACE Standard sets out four methods for considering IR drop (Methods), and provides, in relevant part:

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[13] IR drop is an error in the pipe-to-soil voltage measurement caused by the electrical resistance of the soil in which the pipeline is buried.

[14] NACE INTERNATIONAL, NACE STANDARD RP0169-2002 CONTROL OF EXTERNAL CORROSION ON UNDERGROUND OR SUBMERGED METALLIC PIPING SYSTEMS. This standard is incorporated by reference into the pipeline safety regulations; *see* 49 C.F.R. § 195.3.

*Note: Consideration is understood to mean the application of sound engineering practice in determining the significance of [IR] drops by methods such as:*

*6.2.2.1.1.1 Measuring or calculating the [IR] drop(s);*

*6.2.2.1.1.2 Reviewing the historical performance of the cathodic protection system;*

*6.2.2.1.1.3 Evaluating the physical and electrical characteristics of the pipe and its environment; and*

*6.2.2.1.1.4 Determining whether or not there is physical evidence of corrosion.*

**SFPP System**

Respondent uses an impressed current cathodic protection system on the SFPP system. During the hearing, OPS argued that KM's 2004 annual cathodic protection survey data revealed that the company was not accounting for IR drop at the test locations where it used the 850 mV NACE criteria. OPS contended that Respondent was taking IR drop readings from certain testing locations and extrapolating the readings to other locations, rather than measuring the actual IR drop at each one. According to OPS testimony, the IR drop could be different among various test locations due to differences in soil and environmental conditions. OPS asserted that when KM extrapolated IR drop to other testing locations, rather than considering the actual IR drop at each one, it may not have had an accurate indication of IR drop.

Respondent acknowledged that it was extrapolating IR drop measurements when performing cathodic protection testing, but argued that its historical experience from hundreds of test locations with similar conditions was consistent with "sound engineering practices" and therefore in compliance with the regulation. In support of its argument, Respondent cited a 1991 industry training guide on cathodic protection that stated: "Although it is beneficial to remove IR drop from all potential readings, it is not necessary to measure IR drop at each location each time a potential reading is made. IR drop measurements made at one location may be applied to other similar locations."[15] The statements in the FERA Corporation's training document, however, do not establish compliance with either the regulation or the NACE criteria incorporated therein.

I find that Respondent's practice of extrapolating IR drop measurements from certain test locations to others is not consistent with the NACE Standard and therefore does not satisfy the annual testing requirement set out in § 195.573. Respondent measured IR drop, a permissible Method under the NACE Standard, but only at some locations. From location to location and year to year, environmental and soil conditions can change, resulting in changed soil resistivity and, consequently, different IR drops. Respondent's practice of extrapolating IR drop data across its system does not account for the potential for environmental and soil changes at each

[15] *Hearing Exhibit 4E*, FERA CORPORATION, IR DROP, 4 (1991).

test location. This practice does not satisfy the NACE Standard because it could leave Respondent with an inaccurate understanding of IR drop on its system.

Paragraph 6.3 of the NACE criteria specifically recognizes the potential for different soil and environmental conditions at different locations when it provides that "once determined, the voltage drop(s) may be used for correcting future measurements *at the same location*, providing conditions such as pipe and cathodic protection system operating conditions, soil characteristics, and external coating quality remain similar" (emphasis added).[16] In other words, an operator may, in certain circumstances, use the voltage drop at a particular location to analyze and consider future readings at the same location, but not at others.

Finally, Respondent argued that the leak history of the SFPP system demonstrated the adequacy of its cathodic protection system. I disagree. As noted above, an absence of leaks may simply be a matter of luck rather than evidence of compliance with the regulation.

**Cypress System**

Respondent uses galvanic anode groundbeds to provide cathodic protection on the Cypress system. Respondent's galvanic anodes are connected directly to the pipeline. In this design, the anodes corrode, or self-sacrifice, in order to protect the pipeline from corrosion. These sacrificial anodes must be periodically replaced when they become corroded to the extent they no longer provide protection. Unlike an impressed current system, no external power source is used. While the Cypress system has a different design than the SFPP system, the cathodic protection principles are generally the same.

The Notice alleged that Respondent did not account for IR drop in its annual cathodic protection surveys of the Cypress system. In its Response, during the hearing, and in its Closing, Respondent argued that it had considered IR drop on the Cypress system through "sound engineering practice," as permitted by NACE Standard paragraph 6.2.2.1.1.[17] KM asserted that although it did not measure or calculate IR drops on the Cypress pipeline directly, it employed a combination of the three other Methods for "consideration" of IR drop,[18] as permitted by NACE Standard paragraph 6.2.[19]

First, Respondent argued that it used 2004 in-line inspection (ILI) data to show that there were very few external corrosion anomalies on the Cypress Pipeline.[20] Respondent also argued that

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[16] NACE STANDARD, 6.3.1.

[17] *Closing* at 11.

[18] *Response* at 5-6; *Closing* at 10-11.

[19] *Id.* Respondent stated that OPS had a "grievance with RP 169 for permitting the use of 'sound engineering practices,'" and wished to "substitute its engineering judgment for that of the operator." *Closing* at 11. On the contrary, it appears that OPS did not have an issue with the use of sound engineering practices, but instead with how Respondent *demonstrates* that its practices are sound.

[20] *Response* at 5; *Hearing Exhibit 4H.*

the ILI data served as an evaluation of the physical condition of the pipe and revealed that the cathodic protection system was performing well.[21] OPS countered, however, that ILI is just a snapshot in time of the corrosion profile of the pipeline. OPS also pointed out that the NACE Standard cautions operators that ILI may not detect certain kinds of corrosion.[22] While Respondent may use ILI as part of a larger program for determining the adequacy of corrosion control, ILI alone does not show that an operator is adequately considering IR drop.

Second, Respondent argued that historical data from exposed pipe reports showed little evidence of corrosion or disbonded coating.[23] Respondent asserted that these reports showed that Cypress was receiving adequate cathodic protection and that Respondent was indeed considering IR drop.[24] Pipe reports only offer a snapshot of select locations along this 104-mile pipeline. Evidence that the pipeline, at one time, was free of corrosion or coating damage at these specific locations does not, alone, show that cathodic protection is currently adequate along the entire line or that IR drop has been properly considered. Moreover, Respondent did not provide the exposed pipe reports or any explanation of how it analyzed the report contents to conclude that IR drop was fully considered. In the absence of such documentation and analyses, I reject Respondent's argument.

Third, Respondent indicated that it considered soil resistivity to evaluate the electrical characteristics of the pipe and environment.[25] Respondent asserted that soil resistivity data from exposed pipe reports and Respondent's "knowledge of the right-of-way conditions indicate low soil resistivity along the Cypress pipeline right-of-way."[26] Respondent concluded that its "knowledge" supported "a generally negligible IR."[27] However, Respondent provided no evidence or analysis of how it concluded that soil resistivity was low. In the absence of such evidence and analysis, OPS cannot assess what sort of data was collected or from what location(s), whether the data was representative of resistivity elsewhere on the pipeline, and what value it had in considering IR drop.

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[21] *Response* at 5-6; *Hearing Exhibit 4H.*

[22] *See* NACE STANDARD paragraph 6.3.3, "Absence of external corrosion damage or the halting of its growth may indicate adequate external corrosion control. The [ILI] technique, however, may not be capable of detecting all types of external corrosion damage, has limitations in its accuracy, and may report as anomalies items that are not external corrosion. For example, longitudinal seam corrosion and general corrosion may not be readily detected by in-line inspection. . . . The appropriate use of in-line inspection must be carefully considered."

[23] *Response* at 5. While Kinder Morgan's Response indicated that the exposed pipe reports have indicated no corrosion and well-bonded coating, during the hearing Respondent indicated that 170 of 175 reports from 1991 through 2006 gave no indication of corrosion or coating damage. Presumably, the remaining five reports did provide some indication of corrosion or coating damage.

[24] *Id.*

[25] *Id.*

[26] *Id.* at 6.

[27] *Id.*

Fourth, Respondent indicated that it had reviewed the historical performance of its cathodic protection system by reviewing pipe-to-soil potential readings from annual corrosion surveys. Respondent indicated that this action, in combination with other considerations, showed that the company had considered IR drop. Here, again, Kinder Morgan failed to explain or provide documentation as to how its review of historical data showed that IR drop had been properly considered. The survey data provided by Respondent showed only the measured pipe-to-soil potentials, not whether or how IR drop had been measured.[28]

Finally, Respondent asserted that a lack of corrosion-related leaks on the Cypress system showed that corrosion was being adequately addressed.[29] I disagree. As noted above in relation to the SFPP Pipeline, an absence of corrosion-related leaks may simply be more a matter of luck than evidence of compliance with the regulation.

In summary, while Respondent has taken some steps to consider IR drop, it has not satisfied the NACE Standard or the regulation because its application of the Methods for considering IR drop only focused on certain locations along the pipeline. This practice does not account for differences in environmental and soil conditions, and the resulting differences in IR drop, that could occur throughout the SFPP and Cypress systems. In addition, Respondent has not provided evidence to support its arguments on exposed pipe reports or its knowledge of soil resistivity.

Accordingly, based on the foregoing, I find that KM violated 49 C.F.R. § 195.573(a) by failing to properly conduct tests on its cathodically protected SFPP and Cypress Pipeline systems.

**Item 5:** The Notice alleged that Respondent violated 49 C.F.R. § 195.579(a), which states:

> **§ 195.579 What must I do to mitigate internal corrosion?**
> (a) *General.* If you transport any hazardous liquid or carbon dioxide that would corrode the pipeline, you must investigate the corrosive effect of the hazardous liquid or carbon dioxide on the pipeline and take adequate steps to mitigate internal corrosion.

The Notice alleged that KM violated 49 C.F.R. § 195.579(a) by failing to investigate the corrosive effects of the hazardous liquid on its SFPP and Cypress systems.

Respondent denied the allegation, arguing that its past efforts satisfied the requirement that it investigate the corrosive effect of hazardous liquid on its pipelines. KM contended that it had tested its SFPP system in the early 1990s for internal corrosion, using Electric Resistance (ER) probes.[30] According to the company, such testing showed that corrosion rates were lower than one mil per year on all ER probes, and that such data supported its decision to cease the use of all

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[28] *See Hearing Exhibit 4G.*

[29] *Response* at 6.

[30] *Id.*

ER probes in 1994.[31] KM also argued that ILI runs had "supported a lack of internal corrosion" in the SFPP system.[32] Regarding the Cypress Pipeline, KM argued that its specifications for the line prohibited any free water from entering the system.[33] KM also argued that a 2004 ILI of the Cypress line revealed no indications of internal corrosion and that a coupon installed from 1994 to 1997 showed minimal corrosion rates.[34] Respondent argued, therefore, that it did not transport hazardous liquid that would corrode the Cypress Pipeline.[35]

I find Respondent's argument unpersuasive. The current version of Part 195 of title 49, Code of Federal Regulations, was established pursuant to the Hazardous Liquid Pipeline Safety Act of 1979 (Pub. L. 96-129)(Act). The purpose of the Act and the regulations promulgated thereunder is to provide adequate protection against risks to life, property, and the environment posed by the transportation of hazardous liquids. The regulations cover the design, construction, operation, maintenance, and emergency response requirements for hazardous liquid pipeline facilities. A major goal of the regulations is to ensure that pipeline operators prevent and control corrosion in their pipeline systems, one of the major causes of pipeline failures. Operators transporting hazardous liquid are obligated to recognize and address corrosion and to prevent corrosion-related leaks and failures on their pipelines.

The phrase "hazardous liquid . . . that would corrode the pipeline," as used in § 195.579(a), must be construed in a manner that gives effect to the purpose and intent of the Act and the Part 195 regulations. The intent of this section is to prevent harmful leaks of hazardous liquid caused by internal corrosion. To accomplish this objective, pipeline operators are required to monitor their pipelines wherever internal corrosion could be present and to take appropriate actions to minimize the corrosion in a manner that prevents leaks and other hazards. Known causes of internal corrosion include certain materials commonly found in hazardous liquid pipeline systems, including carbon dioxide, hydrogen sulfide, water, sediments, and microbes that can cause or contribute to internal corrosion. Other factors may also serve to amplify the corrosive effects of these materials, including low spots and locations where the hazardous liquid does not have sufficient velocity to carry away water and sediments.

In this case, Respondent's limited use of coupons and ER probes in the past demonstrated that there was corrosion occurring on both the SFPP and Cypress systems, though apparently at a low rate. Any number of changes or upsets in upstream processes, however, could introduce corrosive materials into the hazardous liquid, despite KM's routine procedures or any specifications prohibiting the presence of water in the lines. Therefore, I find that KM transports a hazardous liquid that would corrode the pipeline.

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[31] *Id.*

[32] *Id.*

[33] *Id.*

[34] *Id.*

[35] *Id.*

Furthermore, even though corrosion rates on these two systems may have been low in the past, this does not mean that KM may cease investigating the corrosive effects of the hazardous liquids being transported. To account for potential changes or upsets, KM must investigate the corrosive effects of the hazardous liquids transported in its pipelines on a continuing basis. Respondent's practice of ILI may be useful in detecting corrosion, but ILI alone is inadequate to satisfy the regulation. ILI only gives a snapshot in time of the condition of the pipe. Corrosion can occur in the years between ILI runs if water or other corrosive materials accumulate inside the system. In addition, ILI of mainline pipe does not provide information on an entire pipeline system because internal corrosion generally occurs first in dead- and intermittent-flow areas that cannot typically accommodate ILI tools. In light of the possibility that water or other corrosive materials may enter the pipeline systems at any time, I reject KM's arguments that its past efforts satisfied the requirements of the regulation.

Accordingly, after considering all of the evidence, I find that Respondent violated 49 C.F.R. § 195.579(a) by failing to investigate the corrosive effects of the hazardous liquid on its pipeline.

These findings of violation will be considered prior offenses in any subsequent enforcement action taken against Respondent.

## ASSESSMENT OF PENALTY

Under 49 U.S.C. § 60122, Respondent is subject to an administrative civil penalty not to exceed $100,000 per violation for each day of the violation, up to a maximum of $1,000,000 for any related series of violations. In determining the amount of a civil penalty under 49 U.S.C. § 60122 and 49 C.F.R. § 190.225, I must consider the following criteria: the nature, circumstances, and gravity of the violation, including adverse impact on the environment; the degree of Respondent's culpability; the history of Respondent's prior offenses; Respondent's ability to pay the penalty and any effect that the penalty may have on its ability to continue doing business; and the good faith of Respondent in attempting to comply with the pipeline safety regulations. In addition, I may consider the economic benefit gained from the violation without any reduction because of subsequent damages, and such other matters as justice may require. The Notice proposed a total civil penalty of $35,000 for the violations cited above.

**Item 1:** The Notice proposed a civil penalty of $10,000 for Respondent's violation of 49 C.F.R. § 195.406(b), for failing to have adequate controls and protective equipment to control the pressure on its SFPP and Cypress Pipeline systems within the limits established under § 195.406(a). Adequate pressure controls and protective equipment are important to pipeline safety because they serve to prevent pipeline overpressure and possible ruptures, spills, and harm to life, property, and the environment. KM's violation reduced the margin of safety provided by the regulation.

Given the potential threat posed by inadequate pressure controls, I find that the gravity of the violation supports the proposed penalty amount. In addition, the violation continued for a substantial period yet the proposed penalty is far below the $100,000 per violation per day limit. This amount reflects the fact that no pipeline failures or spills were associated with the violation.

KM has not presented any other evidence or argument justifying a reduction or elimination of the proposed penalty. Accordingly, having reviewed the record and considered the assessment criteria, I assess Respondent a civil penalty of $10,000 for violation of 49 C.F.R. § 195.406(b).

**Item 4:** The Notice proposed a civil penalty of $25,000 for Respondent's violation of 49 C.F.R. § 195.573(a), for failing to properly conduct annual tests on its cathodically protected SFPP and Cypress Pipeline systems. As noted above, I found that KM failed to properly consider IR drop when performing annual tests of its cathodic protection system. As a result, Respondent may not have had an accurate understanding of the effectiveness of its cathodic protection system. Inadequate cathodic protection may lead to external corrosion, which, in turn, can result in pipeline leaks or failures. This violation continued for many days, which serves to increase the gravity of the offense and the amount of the proposed penalty. In addition, the violation continued for a substantial period yet the proposed penalty is far below the $100,000 per violation per day limit. KM has not presented any other evidence or argument justifying a reduction or elimination of the proposed penalty. Accordingly, having reviewed the record and considered the assessment criteria, I assess Respondent a civil penalty of $25,000 for violation of 49 C.F.R. § 195.573(a).

In summary, having reviewed the record and considered the assessment criteria for each of the Items cited above, I assess Respondent a total civil penalty of **$35,000**.

Payment of the civil penalty must be made within 20 days of service. Federal regulations (49 C.F.R. § 89.21(b)(3)) require such payment to be made by wire transfer through the Federal Reserve Communications System (Fedwire), to the account of the U.S. Treasury. Detailed instructions are contained in the enclosure. Questions concerning wire transfers should be directed to: Financial Operations Division (AMZ-341), Federal Aviation Administration, Mike Monroney Aeronautical Center, P.O. Box 269039, Oklahoma City, OK 73125. The Financial Operations Division's telephone number is (405) 954-8893.

Failure to pay the $35,000 civil penalty will result in accrual of interest at the current annual rate in accordance with 31 U.S.C. § 3717, 31 C.F.R. § 901.9, and 49 C.F.R. § 89.23. Pursuant to those same authorities, a late penalty charge of six percent (6%) per annum will be charged if payment is not made within 110 days of service. Furthermore, failure to pay the civil penalty may result in referral of the matter to the Attorney General for appropriate action in a district court of the United States.

## COMPLIANCE ORDER

The Notice proposed a compliance order with respect to Items 1, 2, 4, and 5 in the Notice for violations of 49 C.F.R. §§ 195.406(b), 195.410(a)(1), 195.573(a)(1), and 195.579(a), respectively. Under 49 U.S.C. § 60118(a), each person who engages in the transportation of hazardous liquids or who owns or operates a pipeline facility is required to comply with the applicable safety standards established under chapter 601. Pursuant to the authority of 49 U.S.C. § 60118(b) and 49 C.F.R. § 190.217, Respondent is ordered to take the following actions to ensure compliance with the pipeline safety regulations applicable to its operations:

1. With respect to the violation of § 195.406(b) (**Item 1**), within 60 days from receipt of this Final Order, Respondent must perform hydraulic analyses, including the consideration of surges caused by a variety of scenarios, to determine whether the SFPP and Cypress Pipeline systems have adequate controls and protective equipment to control the pressure on such systems within the limits established under § 195.406(a), and must provide the results of such analyses to the Director, Southwest Region. Within 180 days from receipt of this Final Order, on the basis of the analyses performed pursuant to this paragraph, Respondent must implement any system modifications necessary to ensure that the SFPP and Cypress Pipeline systems have adequate controls and protective equipment to control the pressure within the limits established under § 195.406(a).

2. With respect to the violation of § 195.410(a)(1) (**Item 2**), within 180 days from receipt of this Final Order, Respondent must review the SFPP and Cypress Pipeline rights-of-way for tall brush or other vegetation that impedes the view of the line markers and must remove any such brush or vegetation.

3. With respect to the violation of § 195.573(a)(1) (**Item 4**), within 30 days from receipt of this Final Order, Respondent must review its cathodic protection program to ensure that IR drop is being considered in accordance with the criteria in Paragraph 6.2 of the NACE Standard and the findings in this Final Order and must determine whether all areas of the SFPP and Cypress pipelines are receiving adequate cathodic protection. Within 60 days from receipt of this Final Order, Respondent must develop a plan and timetable to make any cathodic protection system improvements necessary to comply with the NACE criteria referenced in § 195.571. Within 180 days from receipt of this Final Order, Respondent must complete any such improvements.

4. With respect to the violation of § 195.579(a) (**Item 5**), within 30 days from receipt of this Final Order, Respondent must complete an assessment to fully determine the corrosive effect of the hazardous liquids (including any possible contaminants such as water and other materials) transported on the SFPP and Cypress Pipeline systems. Within 180 days from receipt of this Final Order, if there are areas on the pipeline systems that would be susceptible to internal corrosion, Respondent must perform inspections, install monitoring, and, if active corrosion is found, implement mitigation measures in such areas.

5. Respondent must maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit that total to the Director, Southwest Region, PHMSA. Costs shall be reported in two categories: (1) total cost associated with preparation and revision of plans, procedures, studies, and analyses, and (2) total cost associated with replacements, additions, and other changes to pipeline infrastructure.

6. Respondent must submit all required analyses, results, reviews, plans, timetables, and documentation of compliance with the requirements of this Compliance Order to: Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration, 8701 South Gessner, Suite 1110, Houston, Texas 77074.

The Director may grant an extension of time to comply with any of the required items upon a written request timely submitted by the Respondent and demonstrating good cause for an extension.

Failure to comply with this Order may result in administrative assessment of civil penalties not to exceed $100,000 for each violation for each day the violation continues or in referral to the Attorney General for appropriate relief in a district court of the United States.

## WARNING ITEM

With respect to **Item 3**, the Notice alleged a probable violation of 49 C.F.R. § 195.420(c), but did not propose a civil penalty or compliance order for this Item. Therefore, this is considered to be a warning item. The warning was for:

> 49 C.F.R. § 195.420(c) — Respondent's alleged failure to provide protection for a large number of the SFPP system valves from unauthorized operation and from vandalism. Specifically, the Notice alleged that while many of the valves were chained and locked to prevent unauthorized use, many did not have protection against vandalism.

In its Response, at the hearing, and in its Closing, KM contested this warning item. The company argued that OPS was demanding that all SFPP valve sites be fenced and that this was a novel and unreasonable interpretation of § 195.420(c), of which the company did not have fair notice. I disagree with KM's characterization of this Item. The warning was not based on an alleged failure to fence all valves. At the hearing, OPS confirmed that it was not proposing to require fencing at every valve site. Instead, OPS asserted that Respondent was required to provide a level of protection against vandalism commensurate with the threat of vandalism at each valve. Because OPS did not, in fact, propose to require that all valve sites be fenced, I do not reach KM's fair notice argument. OPS provided photographs of valve sites on Respondent's SFPP system with inadequate protection against vandalism.[36]

At the hearing, Respondent argued that it had the sole discretion to choose the appropriate level of vandalism protection and that OPS may not "second guess" the company's judgment. I reject the notion that OPS is attempting somehow to "second guess" or impinge on the company's flexibility in meeting the performance requirement set forth in the regulation. KM does have flexibility under the regulation in providing protection for valves from unauthorized operation and vandalism. Inherent in such flexibility, however, is the need for operators to show that they have considered the particular circumstances at each valve site and have determined the specific measures necessary to protect each one from vandalism. Without some type of documented process for evaluating the on-site conditions or any evidence that the necessary measures have been satisfactorily implemented, neither Respondent nor PHMSA can determine whether the company has provided adequate protection for each valve site.

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[36] *Violation Report Exhibit 2.*

Depending on the analysis of threats at a particular site, a variety of different protective measures may be appropriate, including, but not limited to, post-and-beam enclosures, fencing, concertina wire, alarms, video monitoring, rock/brick, wooden walls, or some combination of these measures. Respondent could not show that it had a process for determining what types or levels of protection were necessary in various locations. Instead, the company argued that vandalism was considered in valve station design. However, the regulation requires protection from vandalism *at all times*, not just upon the design or installation of the valve. Population changes, construction activities, and numerous other activities in the vicinity of valve sites can affect or alter the threats at a particular location and may render previously measures ineffective. It is not enough simply to design a standard means of protection and assume that it will be adequate in perpetuity.

Having considered such information, I find, pursuant to 49 C.F.R. § 190.205, that a probable violation of 49 C.F.R. § 195.420(c) has occurred, and Respondent is hereby advised to correct such condition. In the event that OPS finds a violation of this provision in a subsequent inspection, Respondent may be subject to future enforcement action.

Under 49 C.F.R. § 190.215, Respondent has a right to submit a Petition for Reconsideration of this Final Order. The petition must be sent to: Associate Administrator, Office of Pipeline Safety, PHMSA, 1200 New Jersey Avenue, SE, East Building, 2nd Floor, Washington, DC 20590, with a copy sent to the Office of Chief Counsel, PHMSA, at the same address. PHMSA will accept petitions received no later than 20 days after receipt of service of this Final Order by the Respondent, provided they contain a brief statement of the issue(s) and meet all other requirements of 49 C.F.R. § 190.215. The filing of a petition automatically stays the payment of any civil penalty assessed. Unless the Associate Administrator, upon request, grants a stay, all other terms and conditions of this Final Order are effective upon service in accordance with 49 C.F.R. § 190.5.

Linda Daugherty

for Jeffrey D. Wiese
Associate Administrator
for Pipeline Safety

AUG 31 2010

Date Issued