U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

12300 W. Dakota Ave., Suite 110
Lakewood, CO 80228

VIA E-MAIL TO MR. WAYNE SIMMONS

October 21, 2021

Mr. Wayne Simmons
Chief Operating Officer
Kinder Morgan, Inc.
1001 Louisiana Street, Suite 1000
Houston, Texas 77002

CPF 5-2021-056-NOPSO

Dear Mr. Simmons:

Enclosed is a Notice of Proposed Safety Order (Notice) issued in the above-referenced case. The Notice proposes that you take certain measures with respect to your various hazardous liquid pipeline assets in Alabama, Arizona, California, Georgia, Florida, Louisiana, Michigan, Mississippi, Nevada, New Mexico, North Carolina, Oregon, Texas, and Virginia to ensure pipeline safety.[1] Your options for responding are set forth in the Notice. Your receipt of the Notice constitutes service of that document under 49 C.F.R. § 190.5.

PHMSA appreciates the company's initial disclosure and the cooperation to date regarding measures taken and we look forward to a successful resolution to ensure pipeline safety. Please direct any questions on this matter to me at 720-963-3160.

[1] The OPIDs for these assets are: 2190 (Central Florida Pipeline Corp.); 4472 (Cypress Interstate Pipeline LLC); 15674 (Products (SE) Pipe Line Corp.); 18092 (Santa Fe Pacific Pipeline Partners, LP); 26125 (CALNEV); 39518 (Kinder Morgan Utopia, LLC); and 31957 (Kinder Morgan Wink Pipeline LLC).

Sincerely,

DUSTIN B HUBBARD

Digitally signed by DUSTIN B HUBBARD
Date: 2021.10.21 11:27:51 -06'00'

Dustin Hubbard
Director, Western Region, Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration

Enclosure: Notice of Proposed Safety Order

DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
OFFICE OF PIPELINE SAFETY
WESTERN REGION
LAKEWOOD, CO 80228

In the Matter of	)	
Kinder Morgan, Inc.,	)	**CPF No. 5-2021-056-NOPSO**
Respondent.	)	

NOTICE OF PROPOSED SAFETY ORDER

Background and Purpose

Pursuant to Chapter 601 of title 49, United States Code, the Pipeline and Hazardous Materials Safety Administration (PHMSA) has initiated an on-site inspection and information review of the safety of Kinder Morgan Inc.'s (KMI) hazardous liquid pipeline assets located in Alabama, Arizona, California, Georgia, Florida, Louisiana, Michigan, Mississippi, Nevada, New Mexico, North Carolina, Oregon, Texas, and Virginia to ensure pipeline safety.

As a result of the inspection and information review, it appears that a condition or conditions exist on your pipeline facilities that pose a pipeline integrity risk to public safety, property or the environment. Pursuant to 49 U.S.C. § 60117(m), PHMSA issues this Notice of Proposed Safety Order (Notice), notifying you of the preliminary findings of the investigation, and proposing that you take measures to ensure that the public, property, and the environment are protected from the potential risk.

Preliminary Findings

- The following operators are subject to the terms and conditions of this Notice:[2]
    1. OPID 2190: Central Florida Pipeline Corp.
    2. OPID 4472: Cypress Interstate Pipeline LLC
    3. OPID 15674: Products (SE) Pipe Line Corporation
    4. OPID 18092: SFPP, LP
    5. OPID 26125: CALNEV Pipeline Co.
    6. OPID 39518: Kinder Morgan Utopia, LLC
    7. OPID 31957: Kinder Morgan Wink Pipeline LLC

[2] All of these operators are subsidiaries of Kinder Morgan, Inc.

- In November 2020, KMI conducted an audit of its liquid integrity management program, and discovered that it missed the time period to remediate approximately 2,700 anomalies occurring on or along the longitudinal seam welds across various liquid pipeline assets traversing high consequence areas (HCAs) or HCA could-affect areas in numerous states.[3] 49 C.F.R. § 195.452(h) requires operators to take prompt action to address all anomalous conditions in the pipeline that the operator discovers through the integrity assessment or information analysis, and prescribes timelines for scheduling and repairing certain conditions.[4] Although KMI's in-line inspection reports identify these anomalies as 180-day conditions pursuant to § 195.452(h)(4)(iii), it is unclear at this time if all these anomalies qualify as 180-day conditions, or if some anomalies may in fact be 60-day or immediate repair conditions based on future confirmation digs.

- On April 7, 2021, KMI notified PHMSA of the unremediated anomalies and explained the steps it was taking to gather additional information to complete its internal review. Since that time, PHMSA has requested additional information from the company, including, for example, the sizes and locations of each unremediated anomaly, and various information on the physical attributes of each affected pipeline segment. This information is contained in two spreadsheets provided by KMI, dated August 4, 2021 and August 27, 2021, and is attached at Exhibit 1.

- On May 20, 2021, pursuant to 49 C.F.R. § 195.452(h)(1)(i), KMI notified PHMSA that it was unable to complete the remediation of approximately 2,715 anomalies that qualified as 180-day repair conditions on certain products pipelines within the schedule under 49 C.F.R. § 195.452(h)(4)(iii)(H). KMI reported that it was in the process of prioritizing repairs for remediation and conducting certain repairs in 2021. KMI also reported to PHMSA that it had implemented weekly aerial right-of-way patrols and continued implementation of its corrosion control program, including remote monitoring and alert tracking of select locations and systems.

- In a June 16, 2021 and August 13, 2021 meeting with KMI, PHMSA was informed that KMI had instituted 20% pressure restrictions for the majority of the impacted pipelines. KMI explained that for a small number of pipeline segments, it was determined that 20% pressure reductions would not provide a safety benefit or a material margin of safety and would otherwise have a detrimental impact on key geographical areas (including critical

[3] This included anomalies located on intrastate assets operated by: (1) Kinder Morgan Crude and Condensate LLC; and (2) Double Eagle Pipeline LLC. These assets are not subject to the safety oversight of PHMSA and are regulated by the Texas Railroad Commission.

[4] *See, e.g.,* 49 C.F.R. § 195.452(h)(4)(iii)(E) (requiring operators to schedule evaluation and remediation of an area of general corrosion with a predicted metal loss greater than 50% of nominal wall within 180 days of discovery of the qualifying condition); *see also* 49 C.F.R. § 195.452(h)(4)(iii)(F) (requiring operators to schedule evaluation and remediation of predicted metal loss greater than 50% of nominal wall that is located at a crossing of another pipeline, or is in an area with widespread circumferential corrosion, or is in an area that could affect a girth weld within 180 days of discovery of the qualifying condition); *see also* 49 C.F.R. § 195.452(h)(4)(iii)(H) (requiring operators to schedule evaluation and remediation of corrosion of or along a longitudinal seam weld within 180 days of discovery of the qualifying condition).

resources in the communities served). In those instances, KMI conducted twice-weekly aerial or ground patrols (weather permitting) and/or a 10% pressure reduction.

- On August 17, 2021, KMI notified PHMSA that it made repairs on one pipeline segment (the Cypress Mont Belvieu to Spindletop interstate pipeline segment) and had identified an additional interstate pipeline in Texas with unremediated anomalies (Kinder Morgan Wink Pipeline LLC).

- As of the date of this Notice, there are now approximately 3,261 unremediated anomalies. KMI has reported to PHMSA that it has repaired approximately 12% of the reported anomalies.

- The pipe characteristics of each impacted segment are noted below, organized by OPID:

Central Florida Pipeline Corp.:

Segment	Age (yrs)	Diameter (inch)	Pipe Grade (SMYS) (psig)	Wall Thickness (inch)	Seam Type	Coating	MOP/Design Pressure (psig)
ITE	48	8.625	35000	0.250	Other (ERW-HF/ DSAW)	Coal Tar	285/1461
10" mainline	49	10.75	60000	0.203	Other (ERW-HF/ DSAW)	Xtru	1423/1632
10" mainline	49	10.75	60000	0.279	Other (ERW-HF/ DSAW)	Xtru	1423/2242
10" mainline	49	10.75	60000	0.188	Other (ERW-HF/ DSAW)	Xtru	1423/1511
16" mainline	24	16	52000	0.312	Other (ERW-HF/ DSAW)	Coal Tar	1440/1460
16" mainline	24	16	46000	0.500	Other (ERW-HF/ DSAW)	Coal Tar	1440/2070
16" mainline	17	16	56000	0.375	Other (ERW-HF/ DSAW)	Coal Tar	1440/1890
16" mainline	17	16	42000	0.406	Other (ERW-HF/ DSAW)	FBE	1440/1535
16" mainline	17	16	70000	0.469	Other (ERW-HF/ DSAW)	FBE	1440/2955
16" mainline	6	16	52000	0.312	Other (ERW-HF/ DSAW)	FBE	1440/1460

Cypress Interstate Pipeline LLC:

Segment	Age (yrs)	Diameter (inch)	Pipe Grade (SMYS) (psig)	Wall Thickness (inch)	Seam Type	Coating	MOP/Design Pressure (psig)
Cypress	30	8.625	60000	0.219	Other (ERW-HF/ DSAW)	FBE	2160/2194

Products (SE) Pipe Line Corp.:

Segment	Age (yrs)	Diameter (inch)	Pipe Grade (SMYS) (psig)	Wall Thickness (inch)	Seam Type	Coating	MOP/Design Pressure (psig)
12”-14W	16	12.75	52000	0.203	Other (ERW-HF/ DSAW)	Coal Tar	1087/1192
12”-14W	57	12.75	52000	0.203	ERW-LF	Coal Tar	1087/1192
12”-14W	57	12.75	52000	0.203	ERW-LF	Coal Tar	1106/1192
12”-14W	57	12.75	52000	0.203	ERW-LF	Coal Tar	1096/1192
12”-14W	57	12.75	52000	0.203	ERW-LF	Coal Tar	1146/1192
14”-14W	57	14	52000	0.219	ERW-LF	Coal Tar	1027/1171
14”-14W	57	14	52000	0.219	ERW-LF	Asphaltic	1027/1171
14”-14W	57	14	52000	0.219	ERW-LF	Coal Tar	1098/1171
14”-14W	57	14	52000	0.219	ERW-LF	Coal Tar	1099/1171
DS1	80	12.75	35000	0.375	ERW-LF	Coal Tar	720/1482
DS1	80	12.75	35000	0.375	ERW-LF	Somastic	720/1482
DS2	80	12.75	35000	0.375	ERW-LF	Coal Tar	720/1482
DS2	80	12.75	35000	0.375	ERW-LF	Somastic	720/1482
DS3	80	12.75	35000	0.375	ERW-LF	Coal Tar	720/1482
DS3	80	12.75	35000	0.375	ERW-LF	Somastic	720/1482
DS4	80	12.75	35000	0.375	ERW-LF	Coal Tar	720/1482
DS4	80	12.75	35000	0.375	ERW-LF	Somastic	720/1482
MDA1	80	12.75	35000	0.375	ERW-LF	Coal Tar	1181/1482
MDA2	49	12.75	35000	0.375	Other (ERW-HF/ DSAW)	Coal Tar	1243/1482
8CO	54	8.625	52000	0.188	Other (ERW-HF/ DSAW)	Coal Tar	1632/1632
8CO	50	8.625	52000	0.188	Other (ERW-HF/ DSAW)	Coal Tar	1632/1632
8MC	52	8.625	52000	0.188	Other (ERW-HF/ DSAW)	Coal Tar	1632/1632
8RK1	45	8.625	42000	0.250	Other (ERW-HF/ DSAW)	Coal Tar	1526/1753
10BMG	50	10.75	46000	0.250	Other (ERW-HF/ DSAW)	Coal Tar	1440/1540

SFPP, LP:

Segment	Age (yrs)	Diameter (inch)	Pipe Grade (SMYS) (psig)	Wall Thickness (inch)	Seam Type	Coating	MOP/Design Pressure (psig)
LS-14	59	8.625	46000	0.188	ERW-LF	Epoxy	1440/1444
LS-14	59	8.625	46000	0.219	ERW-LF	Polytape	1440/1682
LS-14	59	8.625	46000	0.219	ERW-LF	Polytape	1440/1444
LS-14	59	8.625	46000	0.219	ERW-LF	Dblco/Dwrap	1440/1682
LS-14	58	8.625	46000	0.188	ERW-LF	Polytape	1314/1444
LS-14	58	8.625	46000	0.219	ERW-LF	Polytape	1314/1536
LS-14	42	8.625	46000	0.188	ERW-LF	Unknown	1440/1444
LS 10/125/	66	16	42000	0.250	ERW-LF	2 Part Epoxy	720/945

126							
LS 10/125/ 126	66	16	42000	0.250	ERW-LF	Mastic	720/945
LS 111/112/ 113	22	20_22	60000	0.312	Other (ERW-HF/ DSAW)	FBE	1440/1348
LS-114	36	20	60000	0.344	Other (ERW-HF/ DSAW)	Polytape	1440/1486
LS-114	32	20	60000	0.281	Other (ERW-HF/ DSAW)	FBE	1440/1214
LS-114	32	20	60000	0.281	Other (ERW-HF/ DSAW)	Polytape	1440/1214
LS-114	32	20	60000	0.312	Other (ERW-HF/ DSAW)	FBE	1440/1348
LS-114	32	20	60000	0.344	Other (ERW-HF/ DSAW)	FBE	1440/1486
LS-114	32	20	60000	0.375	Other (ERW-HF/ DSAW)	FBE	1440/1620
LS-114	23	20	60000	0.344	Other (ERW-HF/ DSAW)	FBE	1440/1486
LS-120/1	66	16_20	42000	0.250	ERW-LF	Mastic	945/945
LS-120/1	22	16_20	42000	0.250	Other (ERW-HF/ DSAW)	Polytape	945/945
LS-122	58	10.75	52000	0.219	ERW-LF	Coal Tar	720/1525
LS-123	58	10.75	52000	0.219	ERW-LF	Polytape	580/1525
LS-130C	17	20	60000	0.375	Other (ERW-HF/ DSAW)	Poly-ethylene	1440/1620
LS-130C	17	20	60000	0.375	Other (ERW-HF/ DSAW)	Paint	14400/1620

LS-130C	17	20	60000	0.500	Other (ERW-HF/ DSAW)	Poly-ethylene	1440/2160
LS-16	56	10.75	52000	0.188	Other (ERW-HF/ DSAW)	Epoxy	1309/1310
LS-16	56	10.75	52000	0.188	Other (ERW-HF/ DSAW)	Somastic	1309/1310
LS-16	56	10.75	52000	0.188	Other (ERW-HF/ DSAW)	Polytape	1309/1310
LS-16	56	10.75	52000	0.219	Other (ERW-HF/ DSAW)	Somastic	1309/1525
LS-16	33	10.75	52000	0.188	Other (ERW-HF/ DSAW)	Poly-ethylene	1309/1310
LS-16	33	10.75	52000	0.188	Other (ERW-HF/ DSAW)	Somastic	1309/1310
LS-17/18	57	12.75	52000	0.188	Other (ERW-HF/ DSAW)	Dblco/ Dwrap	1104/1104
LS-37	52	12.75	52000	0.219	Other (ERW-HF/ DSAW)	Coal Tar	1286/1286
LS-46/41	58	8.625	46000	0.188	ERW-LF	Dblco/ Dwrap	1440/1444
LS-46/41	58	8.625	46000	0.188	ERW-LF	Polytape	1440/1444
LS-52	65	6.625	42000	0.219	ERW-LF	Coal Tar	584/1999
LS-52	65	6.625	42000	0.219	ERW-LF	2 Part Epoxy	584/1999
LS-52	65	6.625	42000	0.219	ERW-LF	Asphaltic	584/1999
LS-52	65	6.625	42000	0.219	ERW-LF	Polytape	584/1999
LS-54	65	6.625	42000	0.219	ERW-LF	Asphaltic	252/1999
LS-55	64	6.625	46000	0.250	ERW-LF	Asphaltic	1440/2500
LS-55	64	6.625	46000	0.250	ERW-LF	Unknown	1440/2500
LS-58	63	6.625	42000	0.219	ERW-LF	Asphaltic	833/1999
LS-58	63	6.625	42000	0.219	ERW-LF	2 Part Epoxy	833/1999
LS-58	63	6.625	42000	0.219	ERW-LF	Polytape	833/1999
LS-58	63	6.625	42000	0.219	ERW-LF	Unknown	833/1999
LS-61	59	6.625	42000	0.219	ERW-LF	Asphaltic	740/1999

LS-62	58	8.625	46000	0.188	ERW-LF	Asphaltic	1440/1444
LS-64	59	8.625	46000	0.188	ERW-LF	Asphaltic	834/1444
LS-64	59	8.625	46000	0.188	ERW-LF	Polytape	834/1444
LS-64	59	8.625	46000	0.188	ERW-LF	Somastic	834/1444
LS-64	59	8.625	46000	0.250	ERW-LF	Asphaltic	834/1920
LS-72	59	8.625	46000	0.250	ERW-LF	Somastic	1440/1920
LS-72	59	8.625	46000	0.250	ERW-LF	Asphaltic	1440/1920
LS-72	59	8.625	46000	0.188	ERW-LF	Polytape	1440/1444
LS-72	59	8.625	46000	0.188	ERW-LF	Somastic	1440/1444
LS-72	59	8.625	46000	0.188	ERW-LF	2 Part Epoxy	1440/1444
LS-8	63	8.625	46000	0.250	ERW-LF	Asphaltic	1440/1920
LS-8	63	8.625	46000	0.250	ERW-LF	2 Part Epoxy	1440/1920
LS-8	63	8.625	46000	0.250	ERW-LF	Coal Tar	1440/1920
LS-9	64	10.75	46000	0.250	ERW-LF	Polytape	1440/2249
LS-9	64	10.75	46000	0.250	ERW-LF	Asphaltic	1440/1540
LS-9	64	10.75	46000	0.250	ERW-LF	Somastic	1440/1540
LS-95	52	10.75	52000	0.219	Other (ERW-HF/ DSAW)	Coal Tar	1158/1525

CALNEV Pipeline Co.:

Segment	Age (yrs)	Diameter (inch)	Pipe Grade (SMYS) (psig)	Wall Thickness (inch)	Seam Type	Coating	MOP/Design Pressure (psig)
Calnev	41	6.625	35000	0.172	Other (ERW-HF/ DSAW)	Polytape	748/1308
Calnev	41	6.625	35000	0.172	Other (ERW-HF/ DSAW)	Poly-ethylene	748/1308
Calnev	41	6.625	35000	0.172	Other (ERW-HF/ DSAW)	2 Part Epoxy	748/1308
Calnev-ML5A	19	12.75	52000	0.250	Other (ERW-HF/ DSAW)	Poly-ethylene	1500/1468
Calnev-ML	48	14	52000	0.281	Other (ERW-HF/ DSAW)	Polytape	1580/1503
Calnev-ML1	61	8.625	42000	0.219	ERW-LF	Coal Tar	666/1536
Calnev-ML1	61	8.625	42000	0.219	ERW-LF	Coal Tar	851/1536
Calnev-ML1	61	8.625	42000	0.219	ERW-LF	Coal Tar	1189/1536
Calnev-ML1	61	8.625	42000	0.219	ERW-LF	Coal Tar	1500/1536

Calnev-ML1	61	8.625	42000	0.219	ERW-LF	Paint	851/1536
Calnev-ML1	61	8.625	42000	0.250	ERW-LF	Polytape	1189/1753

Kinder Morgan Utopia LLC:

Segment	Age (yrs)	Diameter (inch)	Pipe Grade (SMYS) (psig)	Wall Thickness (inch)	Seam Type	Coating	MOP/Design Pressure (psig)
Utopia	44	12.75	60000	0.213	Other (ERW-HF/ DSAW)	Poly-ethylene	1000/1443
Utopia	44	12.75	60000	0.275	Other (ERW-HF/ DSAW)	Poly-ethylene	1000/1864
Utopia	44	12.75	60000	0.306	Other (ERW-HF/ DSAW)	Poly-ethylene	1000/2074
Utopia	44	12.75	52000	0.383	Other (ERW-HF/ DSAW)	Poly-ethylene	1000/2249

Kinder Morgan Wink Pipeline, LLC:

Segment	Age (yrs)	Diameter (inch)	Pipe Grade (SMYS) (psig)	Wall Thickness (inch)	Seam Type	Coating	MOP/Design Pressure (psig)
Wink-CO2-L301	68	10.75	52000	0.219	LF or DC ERW	Unknown	1404/1525
Wink-CO2-L301	68	10.75	42000	0.250	LF or DC ERW	Coal Tar	1404/1407
Wink-CO2-L301	68	10.75	42000	0.250	LF or DC ERW	2 Part Epoxy	1404/1407
Wink-CO2-L301	68	10.75	42000	0.250	LF or DC ERW	Unknown	1404/1407
Wink-CO2-L301	68	10.75	42000	0.279	LF or DC ERW	Unknown	1404/1570
Wink-CO2-L304	66	20	52000	0.250	LF or DC ERW	Poly-ethylene	717/936
Wink-CO2-L304	66	20	52000	0.250	LF or DC ERW	2 Part Epoxy	717/936
Wink-CO2-L304	64	20	52000	0.250	LF or DC ERW	Poly-ethylene	700/936
Wink-CO2-L304	64	20	52000	0.250	LF or DC ERW	2 Part Epoxy	700/936

Wink-CO2-L304	64	20	52000	0.250	LF or DC ERW	2 Part Epoxy	711/936
Wink-CO2-L304	64	20	52000	0.250	LF or DC ERW	Poly-ethylene	717/936
Wink-CO2-L304	28	20	52000	0.250	LF or DC ERW	Poly-ethylene	717/936
Wink-CO2-L304	28	20	52000	0.250	LF or DC ERW	2 Part Epoxy	717/936

- The products transported are noted below:

Operator	**Product**
Central Florida Pipeline Corp.	Gasoline, Diesel, Jet
Cypress Interstate Pipeline LLC	NGL
Products (SE) Pipe Line Corp.	Gasoline, Diesel, Jet, Kerosene
SFPP, LP	Gasoline, Diesel, Jet
CALNEV Pipeline Co.	Gasoline, Diesel, Jet
Kinder Morgan Utopia, LLC	Ethane
Kinder Morgan Wink Pipeline, LLC	Crude

- The general geographical areas in which each pipeline is located are noted below:

Operator	**Impacted States**	**Geographical Conditions**
Central Florida Pipeline Corp.	Florida	Gulf Coast - Sandy
Cypress Interstate Pipeline LLC	Louisiana, Texas	Gulf Coast – Sand - Clay
Products (SE) Pipe Line Corp.	Alabama, Georgia, Louisiana, Mississippi, North Carolina, Virginia	Gulf Coast – East Coast (DC area) Marsh – Clay - Rocky
SFPP, LP	Arizona, California, New Mexico, Oregon, Texas	Sandy – Silt – Loam - Clay
CALNEV Pipeline Co.	California, Nevada	Sandy
Kinder Morgan Utopia, LLC	Michigan	Loam - Clay

	Ohio[5]	
Kinder Morgan Wink Pipeline LLC	Texas	Sandy -Sandy Loam

- Each pipeline traverses high consequence areas (HCAs) or HCA could-affect areas, as defined in § 195.450 and/or unusually sensitive areas (USAs), as defined in § 195.6. For a map of each OPID, please see Exhibit 2.

- On October 27, 2009 the National Transportation Safety Board (NTSB) issued several safety recommendations after concluding that current inspection and testing programs are not sufficiently reliable to identify features associated with longitudinal seam failures of electric resistance welded (ERW) pipe prior to catastrophic failure in operating pipelines.[6] In P-09-01 and P-09-02, the NTSB recommended that PHMSA conduct a comprehensive study to identify actions that can be implemented by pipeline operators to eliminate catastrophic longitudinal seam failures in ERW pipe, and implement the actions needed.

  In response to P-09-01, on October 23, 2013, a report was published entitled *Final Summary Report and Recommendations for the Comprehensive Study to Understand Longitudinal ERW Seam Failures-Phase One*.[7] It evaluated the effectiveness of hydrotesting and first-generation inspection technologies by trending historical results that compared and contrasted the actual versus detected anomalies, with the results showing that some technology gaps remained to be addressed. In response to P-09-02, PHMSA worked to improve hydrotesting protocols of ERW/FW seams, enhance defect characterization, detection, and sizing via inspection, develop and refine predictive models and quantify growth mechanisms, and develop management tools, including software, protocols and training. Finally, PHMSA held a special information session, *Comprehensive Study to Understand Longitudinal ERW Seam Failures*, as a part of the Pipeline R&D Forum on November 16-17, 2016.

  In addition, PHMSA issued several Advisory Bulletins (previously referred to as "Alert Notices") concerning Electric Resistance Weld (ERW) pipe manufactured prior to 1970. In Alert Notice (ALN) 88-01, PHMSA advised operators to take certain actions to mitigate the risk of failure on pre-1970 ERW pipe by carefully reviewing their leak, failure, and test history as well as their corrosion control records to ensure that adequate cathodic protection (CP) has been and is now being provided.[8] In areas where CP has been deficient for a period or periods of time, the operators should conduct an

[5] As of the date of this Notice, KMI has not reported any anomalies on segments located in Ohio.

[6] *See generally* NTSB Safety Recommendations website, *available at* https://www.ntsb.gov/safety/safety-recs/Pages/safety-recommendations.aspx (last accessed Sept. 21, 2021).

[7] *Available at* https://www.aga.org/sites/default/files/sites/default/files/media/phmsa_final_summary_erw_seam_failures_1.pdf (last accessed Sept. 21, 2021).

[8] Pipeline Safety Alert Notice, ALN-88-01 (Jan. 28, 1988) (on file with PHMSA).

examination of the condition of the pipeline, including close interval pipe-to-soil corrosion surveys, selective visual examination of the pipe coating, and/or other appropriate means of physically determining the effects of the environment on the pipe seam. If an unsatisfactory condition is found, or if a pre-1970 ERW pipeline has not been hydrostatically tested to 125% of the maximum allowable pressure, operators should consider hydrostatic testing to assure the integrity of the pipeline.

In 1989, PHMSA published ALN-89-01 due to the continuing failure of ERW seams. PHMSA recommended operators take additional actions, including (1) consideration of hydrostatic testing on all hazardous liquid pipelines that have not been hydrostatically tested to 125% of the maximum allowable pressure, or alternatively reducing the operating pressure 20%; (2) avoiding increasing a pipeline's long-standing operating pressure; (3) assuring the effectiveness of CP, and considering the use of close interval pipe-to-soil surveys after evaluating the pipe coating and corrosion/cathodic protection history; and (4) in the event of an ERW seam failure, conduct metallurgical examinations in order to determine the probable condition of the remainder of the ERW seams in the pipeline.[9]

On January 4, 2011, after the San Bruno incident, PHMSA published Advisory Bulletin (ADB) 11-01 stressing the importance of implementing robust integrity management (IM) programs for aging pipelines.[10] PHMSA expressed concern that some operators are not sufficiently aware of their pipeline attributes nor are they adequately or consistently assessing threats and risks as a part of their IM programs. "In particular, operators' programs fail to adequately address stress corrosion cracking, *seam failure*, or internal corrosion in their threat identification and risk assessments." (emphasis added.)

- Most of KMI's identified anomalies are located on LF-ERW pipe. Pipelines with LF-ERW are generally older pipelines with weld seam integrity issues due to the manufacturing process, aging coatings that can have coating disbondment, shielding of cathodic protection, and cathodic protection levels at less than 49 C.F.R. § 195.571 requirements. Further, some of these lines have not had an in-line inspection conducted within the requisite five-year interval under § 195.452(j)(3), and may not have had a pressure test. Any flaw, such as corrosion or cracking, would impair the serviceability or integrity of the weld seam and pipe body leading to an increased threat of failure.

- There are thousands of unremediated anomalies on hundreds of miles of Kinder Morgan hazardous liquid pipeline across the United States. These anomalies must be remediated to ensure the safety of the pipelines. The anomalies could worsen and impair the serviceability of the pipelines if left unaddressed or could develop on other areas. The depth and length of these anomalies, combined with a seam type that has known integrity risks including toughness of the pipe body, seam, and heat-affected zone, create a

[9] Pipeline Safety Alert Notice, ALN-89-01 (Mar. 8, 1989) (on file with PHMSA).

[10] Pipeline Safety Advisory Bulletin, ADB-11-01 (Jan. 4, 2011) *available at* https://www.phmsa.dot.gov/regulations/federal-register-documents/2011-208 (last accessed Sept. 21, 2021).

significant integrity threat, placing the pipelines at heightened risk of failure, threatening harm to people and the environment.

- The spill histories for these pipelines are located at Exhibit 3.

Proposed Issuance of Safety Order

Section 60117(m) of Title 49, United States Code, provides for the issuance of a safety order, after reasonable notice and the opportunity for a hearing, requiring corrective measures, which may include physical inspection, testing, repair, or other action, as appropriate. The basis for making the determination that a pipeline facility has a condition or conditions that pose a pipeline integrity risk to public safety, property, or the environment is set forth both in the above-referenced statute and 49 C.F.R. § 190.239, a copy of which is enclosed.

After evaluating the foregoing preliminary findings of fact and considering the age of the pipes involved, the manufacturing process, the hazardous nature of the products transported and the pressure required for transporting such products, the characteristics of the geographical areas where the pipeline facilities are located, and the likelihood that the conditions could worsen or develop on other areas of the pipelines and potentially impact their serviceability, it appears that the continued operation of the affected pipelines without corrective measures would pose a pipeline integrity risk to public safety, property, or the environment.

Accordingly, PHMSA issues this Notice of Proposed Safety Order to notify Respondent of the proposed issuance of a safety order and to propose that Respondent take measures specified herein to address the potential risk.

Response to this Notice

In accordance with § 190.239, you have 30 days following receipt of this Notice to submit a written response to the official who issued the Notice. If you do not respond within 30 days, this constitutes a waiver of your right to contest this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Safety Order. In your response, you may notify that official that you intend to comply with the terms of the Notice as proposed, or you may request that an informal consultation be scheduled (you will also have the opportunity to request an administrative hearing before a safety order is issued). Informal consultation provides you with the opportunity to explain the circumstances associated with the risk condition(s) alleged in the notice and, as appropriate, to present a proposal for a work plan or other remedial measures, without prejudice to your position in any subsequent hearing. If you and PHMSA agree within 30 days of informal consultation on a plan and schedule for you to address each identified risk condition, we may enter into a written consent agreement (PHMSA would then issue an administrative consent order incorporating the terms of the agreement). If a consent agreement is not reached, or if you have elected not to request informal consultation, you may request an administrative hearing in writing within 30 days following receipt of the Notice or within 10 days following the conclusion of an informal consultation that did not result in a consent agreement, as applicable. Following a hearing, if the Associate Administrator finds the facility to have a condition that

poses a pipeline integrity risk to the public, property, or the environment in accordance with § 190.239, the Associate Administrator may issue a Safety Order.

Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. § 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. § 552(b).

In your correspondence on this matter, please refer to **CPF 5-2021-056-NOPSO** and for each document you submit, please provide a copy in electronic format whenever possible.

Proposed Corrective Measures

Pursuant to 49 U.S.C. § 60117(m) and 49 C.F.R. § 190.239, PHMSA proposes to issue to KMI a safety order incorporating the following remedial requirements with respect to the affected pipelines:

1. ***Prioritization Schedule***. In carrying out the corrective measures in this order, KMI must implement the prioritization schedule for each OPID located at Exhibit 4. In prioritizing anomalies for remediation, PHMSA utilized the metrics in Table 1 below:

Table I

Priority (ordered highest to lowest)	Metal Loss
1	≥ 40 wall loss
2	< 40% to 30% wall loss
3	< 30% to 20% wall loss
4	≤ 20 to 15% wall loss and length over 2 inches
5	All others

At the time of issuance of this Notice, PHMSA does not know the safe pressures for the impacted pipelines. Therefore, KMI must calculate the Failure Pressure Ratio (FPR) for each anomaly in Priority Rankings 2-5 in Exhibit 4, and if necessary, elevate the anomaly to a higher priority ranking based on Table II below. In calculating safe pressures, KMI must use documented material strength and toughness values or must test for material strength pursuant to 49 C.F.R. § 192.607 and for toughness properties pursuant to 49 C.F.R. § 192.712(e)(2)(i)(C)&(D) and use American Petroleum Institute (API) Recommended Practice (RP) 579, CorLAS or PipeAssess for crack evaluation based upon weld seam metal loss for LF-ERW, EFW, DC-ERW, etc.

Table II

Priority (ordered highest to lowest)	Failure Pressure Ratio (FPR)
1	≤ 1.25 times Max. Operating Pressure (MOP)
2	> 1.25 to 1.39 times MOP
3	>1.39 times MOP

2. ***Evaluations***. KMI must conduct evaluations of the identified anomalies as follows:

   A. KMI must evaluate all seam anomalies in accordance with API RP 579 and the requirements set forth in 49 C.F.R. §192.712(d)-(g), and evaluate corrosion as a crack in the weld seam. KMI must use Phased Array Ultrasonic Testing (PAUT) to evaluate all anomalies. If PAUT is unavailable and KMI elects to use shear wave, it must demonstrate that shear wave will give equal or better identification of seam and heat-affected zone cracks. KMI can use R-STRENG or ASME/ANSI B31G outside weld seam and heat-affected zone to evaluate corrosion anomalies.

   B. If an anomaly is located in cased pipe areas that are shorted, KMI must notify PHMSA in writing, and comply with the requirements set forth in 49 C.F.R. § 195.575 and this Order.

   C. If KMI does not already have a written procedure to complete the evaluations noted above, then KMI must develop a written procedure, and must document the results of each evaluation.

3. ***Repairs***. KMI must repair all pipe seam anomalies with Type B Sleeves pursuant to ASME-B31.4-2006 – Table 451.6.2(b)(1) or alternatively, must replace the impacted pipe segment(s). If the anomaly is located one or more inches beyond the longitudinal pipe seam, then KMI must repair the anomaly with appropriate repair methods and procedures for the type of anomaly found pursuant to ASME-B31.4-2006 – Table 451.6.2(b)(1).

   In addition, KMI must give advance written notice to PHMSA and any State Pipeline Safety Program 15 days in advance of the repair(s) so staff has the option to attend the digs and observe the repair(s).

   When making repairs, KMI must document each in-line inspection (ILI) result and excavation result, including the location (state, county, survey station, lat/long), findings (length, width, depth and location to long seam), pipe properties (diameter, wall thickness, yield strength, seam, coating type, Charpy Impact value, etc.), type of equipment used to evaluate the anomaly, anomaly type (corrosion, cracking, etc.), and any pictures of the anomaly.

4. ***Temporary Pressure Restrictions***. KMI must take temporary pressure restrictions on all impacted segments. KMI must either take a 20% reduction in operating pressure using the pipeline's operating pressure when KMI identified the issue, or calculate safe operating pressure by utilizing either API RP 579, CorLAS or PipeAssess, and 49 C.F.R. § 192.712(b) or (d) and (e), and the worst unrepaired anomaly known (i.e., the greatest percentage of metal loss) in the pipeline segment and calculating the failure pressure divided by 1.25 times. KMI must use the lower of these pressures.

If KMI believes it cannot meet this requirement because it needs to maintain minimum flows to meet customer demands, it must immediately notify PHMSA and request approval, explaining the reason(s) why temporarily reducing pressure pursuant to the requirements set forth above is infeasible. In its written proposal to PHMSA, KMI must propose an alternative means to assure pipeline safety.

Once KMI has remediated all anomalies on the affected segment(s), KMI must notify the Director in writing and may request that the pressure restriction(s) be lifted.

5. ***Work Plan***. Within 30 days after a Safety Order is issued, KMI must develop and submit to the Director for approval a written remedial work plan that includes the corrective measures set forth in this Order. The work plan must also include:

   (A) The performance of any additional field testing, inspections, and evaluations to determine whether and to what extent the conditions described in this Notice are present elsewhere on the affected pipeline systems. Make the results of the inspections, field excavations, and evaluations available to PHMSA or its representative;

   (B) The performance of evaluations and repairs to fully remediate the identified risk conditions as outlined above in Items 2 and 3. This must also include 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 the safety order; and

   (C) A proposed schedule for completion of the actions required by paragraphs (A) and (B) of this Item. Pursuant to Item 1, Priority 1 anomalies must be remediated within 60 days of issuance of the Safety Order. Priority 2 anomalies must be remediated within 90 days of issuance of the Safety Order. Priority 3 anomalies must be remediated within 120 days of issuance of the Safety Order. Pursuant to Item 1, KMI must propose repair timelines for Priority 4 and Priority 5 anomalies.

6. Revise the remedial work plan as necessary to incorporate new information obtained during the evaluations and associated remedial activities. Submit any such plan revisions in writing to the Director for prior approval. The Director may approve plan elements incrementally. The remedial work plan shall become incorporated into the Safety Order.

7. Implement the work plan as it is approved by the Director, including any revisions to the plan.

8. ***In-Line Inspections***. KMI must conduct in-line inspections (ILIs) on all its impacted segments that have not had an assessment within the last five (5) years pursuant to 49 C.F.R. § 195.452(j). The ILI tool run, including HR-geometry, HR-deformation, HR-MFL, ultrasonic (UT) crack, Electro-Magnetic Acoustic Transducer (EMAT) if

applicable, Inertial Mapping Unit (IMU), or other equivalent ILI tools, and anomaly discovery date(s) must not be over 12 months from the date this Safety Order is issued.

9. ***Close Interval Surveys.*** Within six (6) months after issuance of the Safety Order, KMI must conduct an "on and off" current Close Interval Survey (CIS) at a maximum 5-foot spacing along the entire length of each anomaly area as described below:

    A. KMI must evaluate each anomaly area in accordance with 49 C.F.R. §§ 195.571 and 195.573(a)(2), and accomplish the objectives of Paragraph 10.1.1.3 of NACE SP 0169;

    B. For inadequate cathodic protection (CP) level determination, KMI must conduct a CIS in both directions (a minimum of 1,000 feet) from the anomaly and until the CIS ends at test stations with adequate CP levels;

    C. KMI must remediate any findings within six (6) months of the CIS.

    In instances where inadequate potentials are a result of an electrical short to an adjacent foreign structure, a rectifier malfunction, an interruption of power source, or an interruption of CP current due to other non-systemic or location-specific causes, KMI must document and repair these instances. A CIS will not be required.

10. ***Guidance Materials Review***. KMI must review its means of tracking agency guidance materials, including Frequently Asked Questions, Advisory Bulletins, and other guidance documents issued by PHMSA, and conduct a comprehensive review to confirm that the company is utilizing accurate, up-to-date information, and is not relying on outdated guidance materials. KMI must prepare a written report and send it to the Director outlining the results of its review within 90 days of issuance of the Safety Order.

11. ***Historical Records Review***. For each impacted segment listed in the spreadsheets at Exhibit 1, KMI must review its material records, pressure test records, and alignment sheets for accuracy of diameter, wall thickness, pipe grade (yield strength), seam type, coating type, pressure test, and maximum operating pressure for accuracy. KMI must update the spreadsheets located at Exhibit 1 with any corrections, and confirm to PHMSA in writing that the information located within those spreadsheets are true and accurate.[11]

12. Submit quarterly reports to the Director that: (1) include available data and results of the testing and evaluations required by the safety order; and (2) describe the progress of the repairs and other remedial actions being undertaken.

[11] For example, some of the information contained in the spreadsheets KMI provided to PHMSA located at Exhibit 1 may be inaccurate. For example, KMI noted that its CFPL 10-inch diameter mainline may have Double Submerged Arc Welded (DSAW) seam type; however, this is not generally seen in pipes as small as 10-inches in diameter. *See, e.g.,* ASME Research Report, *History of Line Pipe Manufacturing in North America,* CRTD-Vol. 43 (1996), pgs. C21-C24. Additionally, KMI has indicated that it has coal tar coating on pipelines that are less than thirty years old.

13. The Director may grant an extension of time for compliance with any of the terms of the safety order upon a written request timely submitted demonstrating good cause for an extension.

14. Respondent may appeal any decision of the Director to the Associate Administrator for Pipeline Safety. Decisions of the Associate Administrator shall be final.

15. It is requested (not mandated) that KMI maintain documentation of the safety improvement costs associated with fulfilling this Safety Order and submit the total to Dustin Hubbard, Director, Western Region, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies and analyses, and 2) total cost associated with replacements, additions and other changes to pipeline infrastructure.

The actions proposed by this Notice of Proposed Safety 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. § 60101 *et seq*., or under any other provision of Federal or state law.

After receiving and analyzing additional data in the course of this proceeding and implementation of the work plan, KMI or PHMSA may identify other impacted segments and PHMSA may identify other safety measures that need to be taken. In that event, Respondent will be notified of any proposed additional measures and, if necessary, amendments to the work plan or safety order.

DUSTIN B HUBBARD

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Date: 2021.10.21 11:15:21 -06'00'

Dustin Hubbard
Director, Western Region, Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration

Date issued

cc: Alan Mayberry, Associate Administrator for Pipeline Safety, OPS, PHMSA
Linda Daugherty, Deputy Associate Administrator for Field Operations, OPS, PHMSA
Jaime Hernandez, Director, Engineering: Codes and Standards, KMI
Toby Fore, Director, Pipeline Integrity, KMI
Jorge Torres, Vice President, Pipeline Integrity, KMI
Wallace Jones, Director Pipeline Safety Division, Alabama Public Service Commission
Eric Villa, Program Manager - Pipeline Safety Section, Arizona Corporation Commission
Jim Hosler, Asst. Deputy Director, Pipeline Safety Div., Office of the State Fire Marshal, California Dept. of Forestry and Fire Protection
Michael Peikert, Asst. Director, Pipeline Division, Louisiana Dept. of Natural Resources
Jason Montoya, Bureau Chief, Pipeline Safety Bureau, New Mexico Public Reg. Comm.

Stephanie Weidman, PHMSA Program Manager, Pipeline Safety, Texas Railroad Comm.
Lauren Govoni, Pipeline Safety Director, Virginia State Corp. Comm.
Scott Marshall, Pipeline Safety Program Manager, Virginia State Corp. Comm.
Joseph Dragovich, Program Manager - Gas Pipeline Safety, Public Utilities Comm. of Ohio