

March 11, 2021

Via Email

Gregory Ochs
PHMSA Central Region, OPS
901 Locust Street, Suite 462
Kansas City, MO 64106
gregory.ochs@dot.gov

Re: CPF 3-2021-5002

Dear Mr. Ochs:

On March 5 to 9, April 2 to 6, May 7 to 11, May 21 to 25, June 11 to 15 and June 25 to 29, 2018, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS), pursuant to Chapter 601 of 49 United States Code (U.S.C.) inspected the records and facilities of several of Enbridge's subsidiaries, namely, Enbridge Storage (Cushing), LLC; Enbridge Storage (Patoka), LLC; CCPS Transportation, LLC; and Illinois Extension Pipeline Company in Oklahoma, Kansas, Missouri and Illinois. These facilities include two tank farms with a total of 89 tanks and approximately 1,338 miles of crude oil pipelines.

In response to the above-referenced Notice of Probable Violation, Proposed Civil Penalty and Proposed Compliance Order (NOPV) dated February 10, 2021, The operators, Enbridge Storage (Cushing), LLC; Enbridge Storage (Patoka), LLC; CCPS Transportation, LLC; and Illinois Extension Pipeline Company (collectively "Enbridge") attached the following documents:

- Exhibit NOPV-6
- Exhibit NOPV-14

Enbridge further responds to each NOPV and Warning Item as follows:

1. § 195.52 Immediate notice of certain accidents.

(a) Notice requirements. At the earliest practicable moment following discovery, of a release of the hazardous liquid or carbon dioxide transported resulting in an event described in §195.50, but no later than one hour after confirmed discovery, the operator of the system must give notice, in accordance with paragraph (b) of this section of any failure that: . . .

The PHMSA inspection revealed that Enbridge failed to give notice at the earliest practicable moment, but no later than one hour after confirmed discovery, to the National Response Center following a release of a hazardous liquid resulting in an event described in 49 C.F.R. § 195.50. Specifically, on May 2, 2017, a sump-pump overfill situation occurred, resulting in a release of approximately 10 barrels of crude oil and the shutdown of Enbridge's Line 63 (Pakota Station) in Illinois. According to Accident Report 20170177-22368, Enbridge identified the accident at 10:22 a.m., and confirmed discovery at 10:24 a.m. when resources first arrived onsite. However, Enbridge did not give notice to the National Response Center of the accident until 12:34 p.m., which exceeded the one-hour notification requirement under § 195.52(a) by 1 hour and 10 minutes.

Enbridge Response:

Enbridge does not contest the accident notification timeline was exceeded as stated in 195.52(a), and therefore accepts this as a Warning with no penalty. We note that this delay was a rare occurrence in our accident reporting system.

2. **§ 195.264 Impoundment, protection against entry, normal/emergency venting or pressure/vacuum relief for aboveground breakout tanks.**
 - (a) **A means must be provided for containing hazardous liquids in the event of spillage or failure of an above-ground breakout tank.**
 - (b) **After October 2, 2000, compliance with paragraph (a) of this section requires the following for the aboveground breakout tanks specified:**
 - (1) **For tanks built to API Spec 12F, API Std 620, and others (such as API Std 650 (or its predecessor Standard 12C)), the installation of impoundment must be in accordance with the following sections of NFPA-30 (incorporated by reference, see § 195.3);**
 - (i) **Impoundment around a breakout tank must be installed in accordance with section 22.11.2; . . .**

Enbridge failed to provide a means for containing hazardous liquids in the event of spillage or failure of above-ground breakout tanks built to American Petroleum Institute (API) Specification 12F, API Standard 620 and others (such as API Standard 650 (or its predecessor Standard 12C)), by installing impoundments around certain breakout tanks built after October 2, 2000, at the company's Cushing Tank Farm facility. Specifically, Enbridge failed to install impoundments in accordance with section 22.11.2 of NFPA-30, a standard promulgated by the National Fire Protection Association and incorporated by reference in 49 C.F.R. § 195.3.

During the field inspection of the Cushing Tank Farm facility, PHMSA observed that several groups of tanks did not have intermediate berms, as required by section 22.11.2 of NFPA-30. That section provides, in relevant part:

NFPA 30 – Flammable and Combustible Liquids Code

22.11.2

22.11.2.6.3.5 Whenever two or more tanks storing Class I liquids, any one of which is over 150 ft (45 m) in diameter, are located in a common diked area, intermediate dikes shall be provided between adjacent tanks to hold at least 10 percent of the capacity of the tank so enclosed, not including the volume displaced by the tank.

PHMSA identified several containment areas at the Cushing Tank Farm facility storing Class I liquids where there were two or more tanks, each being more than 150 feet in diameter, that lacked intermediate dikes between adjacent tanks and that could hold at least 10 percent of the tank so enclosed, not including the volume displaced by the tank. In an email to PHMSA dated March 21, 2019, Enbridge acknowledged that it had conducted a survey of the Cushing Tank Farm facility and had identified the following tanks as being non-compliant with NFPA-30 section 22.11.2. A total of 23 tanks in five containment areas failed to comply with NFPA-30 section 22.11.2, as follows:

Containment Area / Tanks	Year Built
1. 1036, 1037, 1038	2012
2. 2238, 2239, 2240, 2241, 2242,	2008
3. 2235, 2236, 2237, 2243, 2244	2006 (Tanks 2235-37) & 2011 (Tanks 2243-44)
4. 2229, 2230, 2231, 2232, 2233, 2234	2007
5. 3361, 3362, 3363, 3364	2006

Enbridge Response:

Enbridge does not contest this finding and the associated civil penalty. Enbridge has remediated the third containment area listed above, and plans to complete the work on the remaining containment areas within six months of the Final Order from PHMSA.

PHMSA Finding:

- 3. §195.402 Procedural manual for operations, maintenance, and emergencies.**
- (a) General.** Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. . . .

Enbridge failed to follow its own manual of written procedures for conducting normal operations and maintenance activities. Specifically, the company failed to follow its written procedure “09-03-02 Removing Water/Snow from Tank Roofs.” Step 5 of the procedure for Removing Water requires operator personnel to “[m]onitor water from bottom drain valve for visible product for at least 10 min. checking drain valve every 30 min until draining is complete.” However, this procedure does not reflect the actual practice followed in the field.

During the PHMSA field inspection, Enbridge representatives stated that the Cushing Tank Farm facility keeps all tank roof drains open at all times, including at night and on weekends. This practice is inconsistent with Enbridge’s procedure for Removing Water, specifically the monitoring required under Step 5. Additionally, the practice of leaving the tank roof drains open at all times, including at night, conflicts with a specific warning in the procedure that states: “Do not leave tank roof drains and firewall drains open ... at night.”

On May 31, 2018, in response to OPS’ inquiries about Enbridge’s practice of draining tank roofs at the Cushing Tank Farm facility, Cushing staff stated that the practice of leaving the tank roof drains open had been in place prior to Enbridge acquiring the facility. Cushing staff also stated that the procedure would only apply to instances where the roof drain valve was closed. However, there is no indication in the procedure that it was limited to instances where the roof drain valve was closed. Therefore, Enbridge’s statements and practices demonstrate that Enbridge failed to follow its written procedure 09-03-02.

Enbridge Response:

Enbridge acknowledges that the Cushing terminal failed to comply with the referenced procedure, but avers that the descriptive language is not correct. The practice of leaving tank roof drains open at Cushing terminal has been discontinued, and this location is now aligned with other Enbridge locations. In no instance are roof drains and containment drains open at the same time. For these reasons, Enbridge respectfully requests that this Item be reduced to a Warning with no penalty.

4. §195.402 Procedural manual for operations, maintenance, and emergencies.

- (a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This ...**

Enbridge failed to follow its own manual of written procedures for conducting normal operations and maintenance activities. Specifically, the company failed to follow its procedure “03-07-03 Pressure Relief / Safety Valves,” when testing pressure safety valves

(PSVs). Specifically, procedure 03-07-03 sets forth a 14-step process for inspecting and testing PSVs.

During PHMSA's field inspection at the CCPS Spearhead Pipeline in Illinois from June 25 to 29, 2018, the following series of events occurred. Enbridge's technicians failed to follow the company's 14-step process laid out in procedure 03-07-03 during the following instances:

- Step 9 was completed before step 1 – equipment was attached to the PSV before calling the control room as required in Step 1.
- During Step 10, the compressed nitrogen tank valve was supposed to be slowly opened until the PSV activated. However,
 - The nitrogen tank valve was opened quickly so that the PSV tripped several times a second before the nitrogen tank valve closed after several seconds.
 - The entire nitrogen tank was emptied so much that another tank had to be retrieved to conduct the test.
 - When Enbridge personnel observing the test determined that the technician's performance was unsatisfactory, Enbridge suspended the technician as of 6/29/2018.
 - The technician requalified on 9/12/2018.
- Technicians in Illinois failed to complete Step 11 by updating the field tags with the date of the test. The Area supervisor and five technicians that were interviewed stated that it was the practice in this location not to use field tags, despite the procedure requirements.

PHMSA's inspectors witnessed Enbridge's technicians not properly following the 14-step procedure for testing PSVs, which demonstrates a failure to comply with § 195.402(a).

Enbridge Response:

Enbridge does not contest this finding and the associated civil penalty. In order to minimize the likelihood of recurrence, corrective action was initiated to requalify the technician that incorrectly performed the tasks referenced above. This requalification process was completed on September 12, 2018.

5. §195.402 Procedural manual for operations, maintenance, and emergencies.

- (a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This ...**

Enbridge failed to follow its own manual of written procedures for conducting normal operations and maintenance activities. Specifically, the company failed to follow its

written procedure “03-07-03 Pressure Relief / Safety Valves.” Step 10 of the procedure for inspecting and testing pressure relief/safety valves sets forth measures for checking pressure relief set points for the valves, which includes recording the current pressure-relief setting as “Task” on the work order and then creating a followup work order to document the adjustments being made. However, Enbridge did not complete these specific measures under Step 10 of the procedure.

During the field inspection, PHMSA discovered that technicians were recording the setting “found / left” data in the field on a paper form, but were not updating the work order. Enbridge provided copies of the paper form for three of the five pressure-relief valves listed below. Technicians used this paper form in the field but Enbridge was unable to provide follow-up work orders, as required by the procedure.

The following records lacked “found / left” pressure readings:

1. CG-159-PSV-3 – Missing the “as found” relief pressure reading from the 2016 detailed work order.
2. CG-155-PSV-1 – Missing the “as found” relief pressure reading from the 2017 detailed work order.
3. NI-55-PSV-1 – Missing the “as found” relief pressure from the 2016 detailed work order.
4. QT-59-PSV-1 – Missing the “as found” relief pressure from the 2017 detailed work order.

By failing to document the current “as found” relief pressures in the follow-up work orders, Enbridge failed to follow its written procedure, as required by § 195.402(a).

Enbridge Response:

Enbridge does not contest this finding and the associated civil penalty. In order to minimize the likelihood of recurrence, the job plan now requires technicians to record the ‘as found/as left’ pressure within each work order in the maintenance management system. A follow-up work order is initiated when the values are outside specifications.

6. §195.420 Valve maintenance.

(a)

(b) Each operator shall, at intervals not exceeding 7½ months, but at least twice each calendar year, inspect each mainline valve to determine that it is functioning properly.

Enbridge failed to inspect each mainline valve at least twice each calendar year, at intervals not exceeding 7½ months. PHMSA’s review of Enbridge’s valve maintenance records found that the following seven valves had not been inspected at least twice each calendar year:

1. TP-63-BV-1 – Missing first inspection of 2016.
2. TP-63-CSV-12 – Missing first inspection of 2016.
3. DT-63-SSV-1 – Missing first inspection of 2016.
4. DT-63-SSV-2 – Missing first inspection of 2016.
5. FB0168.17-63-V-1 – Missing first inspection of 2016.
6. FB0168.18-63-V-1 – Missing first inspection of 2016.
7. FH0000.03-59-V-1 – Missing first inspection of 2017.

Therefore, Enbridge failed to inspect seven mainline valves, at intervals not exceeding 7½ months, but least twice each calendar, as required by § 195.420(b).

Enbridge Response:

Enbridge accepts the violation in part and contests the violation in part, and respectfully requests a reduction in the penalty. Enbridge acknowledges that the required inspection interval was not met for five of the seven valves listed above. Valves meeting the definition of mainline valves and requiring semi-annual inspection are shaded orange on Exhibit NOPV-6, attached to this response. However, as shown in the exhibit, the two highlighted valves (TP-63-BV-1 and TP-63-CSV-12) are not shaded orange, and the required inspection frequency is three years. For these reasons, Enbridge respectfully requests that PHMSA amend the descriptive language for this Item and reduce the civil penalty accordingly.

7. §195.428 Overpressure safety devices and overfill protection systems.

- (a) Except as provided in paragraph (b) of this section, each operator shall, at intervals not exceeding 15 months, but at least once each calendar year, or in the case of pipelines used to carry highly volatile liquids, at intervals not to exceed 7½ months, but at least twice each calendar year, inspect and test each pressure limiting device, relief valve, pressure regulator, or other item of pressure control equipment to determine that it is functioning properly, is in good mechanical condition, and is adequate from the standpoint of capacity and reliability of operation for the service in which it is used.**

Enbridge failed to inspect each non-highly volatile liquid (HVL) overpressure safety device at least once each calendar year at intervals not exceeding 15 months. The following 12 overpressure safety devices were not inspected annually for a total of 12 inspections that were not conducted:

1. CG-55-PCV-1 – Missing 2016 and 2017 inspections.
2. TP-203-PSV-4 – Missing 2016 inspection.
3. TP-203-PSV-3 – Missing 2016 inspection.
4. TP-203-PSV-2 – Missing 2016 inspection.
5. TP-203-PSV-1 – Missing 2016 inspection.
6. TP-202-PSV-1 – Missing 2016 inspection.

7. TP-202-PCV-1 – Missing 2016 inspection.
8. TP-201-PSV-1 – Missing 2016 inspection.
9. TP-101-PSV-15C – Missing 2016 inspection.
10. TP-101-PSV-121 – Missing 2016 inspection.
11. FH0124.93-55-PT-2 – Missing inspection in calendar year 2016 (inspection on 11/13/2015 & 1/24/2017).

Therefore, Enbridge failed to conduct 12 inspections of overpressure safety devices on its system in 2016 and 2017, as required by § 195.428(a).

Enbridge Response:

Enbridge does not contest this finding and the associated civil penalty. In order to minimize the likelihood of recurrence, a communication to persons responsible for assigning job plans to assets and scheduling preventative maintenance work orders will be distributed across Enbridge's US Liquid Pipeline Operations.

8. §195.428 Overpressure safety devices and overfill protection systems.

- (a) Except as provided in paragraph (b) of this section, each operator shall, at intervals not exceeding 15 months, but at least once each calendar year, or in the case of pipelines used to carry highly volatile liquids, at intervals not to exceed 7 1/2 months, but at least twice each calendar year, inspect and test each pressure limiting device, relief valve, pressure regulator, or other item of pressure control equipment to determine that it is functioning properly, is in good mechanical condition, and is adequate from the standpoint of capacity and reliability of operation for the service in which it is used.**

Enbridge failed to determine, over a period of three years, whether 53 pressure-control devices on its non-HVL pipeline were adequate from the standpoint of capacity and reliability of operation for the service in which they were used, at intervals not exceeding 15 months, but at least once each calendar year.¹

PHMSA's review of Enbridge's pressure-control records noted that Enbridge had not determined that the capacity was adequate for 53 overpressure safety devices as required by §195.428. Specifically, Enbridge had missed a total of 159 inspections and tests of its overpressure safety devices to determine if they were adequate from the standpoint of capacity, nor was Enbridge able to produce any records demonstrating it had completed such determinations. The 53 overpressure safety devices and 159 missing capacity inspections and tests are as follows:

¹ These 53 devices were different from the ones cited above in Item 7.

Pipeline facility	In-service Date	Number of overpressure protection valves to be inspected per year	Number of missed capacity reviews	Years of Missed Inspections
Spearhead Pipeline, Line 55	>5 years	15	45	2016, 2017, 2018
Spearhead Pipeline, Line 59	Dec. 2014	9	27	2016, 2017, 2018
Cushing Terminal	>5 years	16	48	2016, 2017, 2018
Patoka Terminal	>5 years	11	33	2016, 2017, 2018
SAX	Nov. 2015	2	6	2016, 2017, 2018
Total		53	159	

Therefore, Enbridge failed to determine whether pressure-control devices on its nonHVL pipeline were adequate from the standpoint of capacity and reliability of operation for the service in which they were used, at intervals not exceeding 15 months, as required by §195.428(a), as well as the requirements of Enbridge’s own procedure “*Pressure Control Valve Capacity and Reliability Assessment*.”²

Enbridge Response:

Enbridge does not contest this finding and the associated civil penalty. In order to minimize the likelihood of recurrence, Enbridge is taking the following actions.

Enbridge plans to implement a surge relief valve calculated capacity verification process by the end of Q2 2021. This will include the establishment of a documented calculated capacity review process to comply with 49 CFR Part 195 schedule requirements.

Notwithstanding the violation in this item, Enbridge’s practices have included the following measures to ensure that full flow relief devices have adequate capacity.

A critical design check for any project and/or system change managed by Enbridge’s Management of Change (“MOC”) process to verify the overpressure protection provided by the existing or new surge relief device is sufficient.

² The purpose of the “*Pressure Control Valve Capacity and Reliability Assessment*” procedure is to “outline the process to the process to be followed for the assessment of capacity and reliability on Pressure Control Valves (PCV) as per ... 49 CFR 195.428.”

Before a project is put into service, one of the major design considerations in the formal Enbridge project review and approval processes is this confirmation of sufficient overpressure protection. It is the accountability of the project team to confirm the appropriate surge relief design per Enbridge Engineering Design Standard D12-104 (Overpressure Protection) and a transient report per Enbridge Engineering Design Standard D02-109 (Pipeline Transient Hydraulics) is performed as a final deliverable.

The model, size and setpoint of the surge relief are included as a critical design parameter during transient analysis. Any potential issues with capacity would be identified by a relief system failing to prevent a simulated overpressure.

Enbridge also has in place formal MOC processes for operational asset, system or component changes. These change management systems ensure that any new assets or potential changes to an existing full flow surge relief valve capacity are fully assessed prior to implementation. The latest LP MOC procedure clearly identifies that a MOC is required for any modifications or replacements of a safety system/relief valve asset, system, or component that:

- *Materially changes the asset in form or make up*
- *Changes the performance, capacity, or functionality*
- *Changes the way other systems or personnel interact*

If an MOC is identified to potentially impact the full flow surge relief valve, the Pipeline Engineering and Transient Hydraulics (PETH) department will complete a review of any existing applicable transient analysis or perform a new transient analysis to confirm whether overpressure protection is sufficient and ensure any required modifications, such as surge relief valve setpoint, operating pressure or flowrate changes, are implemented.

Enbridge currently utilizes these project design requirements as well as the formal MOC processes to ensure that the surge relief valves have sufficient capacity.

9. §195.430 Firefighting equipment.

Each operator shall maintain adequate firefighting equipment at each pump station and breakout tank area. The equipment must be—

(c) In proper operating condition at all times;

Enbridge failed to perform an annual inspection of firefighting equipment at the Patoka facility in 2016. Enbridge staff stated that the annual fire extinguisher inspection was not completed to their knowledge and the employees that were there at that time are no longer with Enbridge. Firefighting equipment inspections are required by NFPA-30, incorporated by reference into Part 195 at § 195.3, and Enbridge's procedure "04-03-02 Fire Extinguishers – Inspection." Enbridge was not able to provide documentation demonstrating that the firefighting equipment had been inspected in 2016 to ensure it was in proper operating condition at all times.

Enbridge Response:

Enbridge does not contest this finding and accepts this as a Warning with no penalty. In order to minimize the likelihood of recurrence, we are distributing a communication to Operations Leadership across Enbridge LP to ensure fire extinguishers are inspected at the required interval.

10. §195.505 Qualification program.

Each operator shall have and follow a written qualification program. The program shall include provisions to:

(a)

(b) Ensure through evaluation that individuals performing covered tasks are qualified;

Enbridge failed to follow its own written qualification program for ensuring through evaluation that individuals performing covered tasks were qualified. Enbridge's Regional Management reported to PHMSA that two individuals had performed covered tasks when they were not qualified per the company's written operator qualification program. Records show that in each instance the covered task was performed by unqualified individuals only one time.

1. Covered task 51, "Valves and Actuators," was performed by an unqualified individual on 4/25/2017; the qualification had expired on 3/19/2017 and the requalification did not occur until 6/15/2017.
2. Two covered tasks were performed by an individual before being qualified. First, Task 91, "Pressure Relief Valve Test," was performed on 9/9/2016 before the qualification date of 7/7/2017. Second, Task 51, "Valves and Actuators," was performed on 10/21/2016 before the qualification date of 2/23/2017.

Enbridge Response:

Enbridge does not contest this finding and accepts this as a Warning with no penalty. In order to minimize the likelihood of recurrence the following corrective actions are underway:

- *Establish a periodic training review schedule where Regional Training Advisors work with front line supervisors to review what is and what is not assigned to workers. OQ assignment deficiencies will be corrected and the appropriate training and qualification plans will be pushed to frontline workers.*
- *Activate push notifications from the learning management system for frontline workers and supervisors to communicate training and OQs that are coming due and expired.*

- *Execute a communication blitz targeted to frontline workers and supervisors to remind them of their specific responsibilities outlined in the Enbridge LP OQ plan.*
- *Implement new job planning and work assignment functionality that pre-identifies OQs required to complete work as part of the job-planning process.*
- *Push worker OQ records from the learning management system to the work scheduling tool so that schedulers can easily identify and assign workers with the required qualifications to perform OQ tasks.*
- *Create work records at the time that work is performed to document the OQs required and qualified workers that performed the OQ tasks.*

11. §195.567 Which pipelines must have test leads and what must I do to install and maintain the leads?

(a)

(c) *Maintenance.* You must maintain the test lead wires in a condition that enables you to obtain electrical measurements to determine whether cathodic protection complies with §195.571.

Enbridge failed to maintain test lead wires in a condition that would enable the operator to obtain electrical measurements to determine whether cathodic protection on the pipeline complied with § 195.571. A review of Enbridge’s corrosion-control records showed that the following seven test lead wires were not adequately maintained to allow testing at the required inspection cycles:

1. Line 59, MP 30.1 - No readings due to bad test lead in 2016 and 2017.
2. Line 59, MP 41.82 - No readings due to bad test lead in 2016 and 2017.
3. Line 59, MP 256.25 - No readings due to bad test lead in 2016 and 2017.
4. Line 59, MP 298.4 - No readings due to bad test lead in 2016 and 2017.
5. Line 59, MP 364.17 - No readings due to bad test lead in 2016 and 2017.
6. Line 59, MP 529.31 - No readings due to bad test lead in 2016 and 2017.
7. Line 55, MP 487.9089 - No readings due to bad test lead in 2016 and 2017.

Enbridge Response:

Enbridge does not contest this finding and accepts this as a Warning with no penalty. To minimize the likelihood of recurrence, Enbridge has taken the following actions.

1. *Creation of the Corrective Action Reporting (CAR) database – In 2017 Enbridge developed the CAR database. This database is used to track the progression and resolution of identified maintenance and compliance issues. Once an issue such as “bad test lead” is identified, a CAR is created documenting the discovery date and information about the issue (location information, detailed descriptions, pictures, data, etc.). As work progresses on the issue, new information is updated to the CAR database. Issues can be tracked by their compliance due*

date and are color coded for prioritizing. As a process, now any time a corrosion prevention compliance issue is identified, a CAR is created to track it through to completion.

2. Enbridge developed a work instruction for determining if test stations that are not working properly, are still necessary to effectively evaluate the levels of cathodic protection, or if they can be retired. The locations identified in this item were evaluated and resolved as that work instruction directs. The resolution of each location is described in the table below.

	Line	MP	Comments
1.	59	30.1	The potential measurement at this location is now being recorded by stringing a wire from a nearby test station to this location.
2.	59	41.82	Test station retired in 2018
3.	59	256.25	Test station retired in 2018
4.	59	298.4	Test station retired in 2018
5.	59	364.17	The potential measurement at this location is now being recorded by stringing a wire from a nearby test station to this location.
6.	59	529.31	Test station retired in 2020
7.	55	487.9089	Test station retired

Enbridge notes that in-line inspection data at these locations demonstrate that Enbridge has ensured that at no time did these conditions present any threat to the integrity of the pipeline.

12. §195.573 What must I do to monitor external corrosion control?

(a)

(c) **Rectifiers and other devices.** You must electrically check for proper performance each device in the first column at the frequency stated in the second column.

Device	Check frequency
Rectifier	At least six times each calendar year, but with intervals not exceeding 2½ months.
Reverse current switch	
Diode	
Interference bond whose failure would jeopardize structural protection	
Other interference bond	At least once each calendar year, but with intervals not exceeding 15 months.

Enbridge failed to electrically check for proper performance of rectifiers at least six times each calendar year, at intervals not to exceed 2½ months. As identified during the PHMSA inspection of Enbridge's corrosion- control records, 11 checks were not completed on the following 4 rectifiers:

1. Line 63, MP 71.62 - Missing 2 readings between 12/15/2016 to 5/9/2017.
2. Patoka Terminal, MP 120 - Missing 3 readings between 12/30/2016 to 7/13/2017.
3. Patoka Terminal, MP 5347 - Missing 2 readings between 1/1/2017 to 6/28/2017.
4. Patoka Terminal, MP 5354 - Missing 4 readings between 6/21/2016 to 4/19/2017.

Enbridge also failed to electrically check for the proper performance of critical interference bonds at least six times each calendar year, at intervals not to exceed 2½ months. As identified during the inspection of Enbridge's corrosion-control records, 13 checks were not completed on the following three critical bonds:

1. Line 55, MP 423.5056 - Missing the first 3 readings in 2017, and the last reading in 2017 (total of 4).
2. Line 55, MP 423.5056A - Missing 5 readings in 2017 (only reading was on 6/26/2017) (total of 5).
3. Line 55, MP 423.5056B - Missing 4 readings in 2017 (only readings were on 6/26/2017 and 12/4/2017) (total of 4).

Enbridge Response:

Enbridge accepts the violation in part and contests the violation in part, notes that there are mitigating factors, and respectfully requests a reduction in the penalty. Enbridge also notes that the proposed penalty amount for violating this standard is not in line with penalties issued to other operators for alleged violations of the same standard, which also warrants a reduction in the penalty. We will address the allegations regarding the rectifiers and critical interference bonds separately.

Rectifiers:

The subject rectifiers all have remote monitoring units installed on them for recording automated measurements. When the remote monitoring unit is not functioning properly, a technician is sent to the rectifier to repair the unit and obtain any voltage and amperage measurements required by the CFR. That data is then manually entered into the cathodic protection database called PCS. In this case, when the remote monitoring units were not operating properly a technician did visit the location and recorded the measurements in the logbook located at the rectifier. However, those measurements were not recorded in PCS.

As part of our annual survey it is common practice to take a picture of the rectifier logbook and ensure that these records are entered into PCS. Enbridge will standardize this practice, and this will prevent clerical errors like this from occurring in the future.

The measurements that were recorded in the rectifier logbook have all been entered into PCS as follows:

	<i>Location</i>	<i>Milepost</i>	<i>Date</i>	<i>Volts</i>	<i>Amps</i>	<i>Technician Name</i>	<i>Notes</i>
1.	Patoka Terminal	MP 120	2/17/17	25.2	12.0	Kevin Haworth	Bi
			4/19/17	25.0	11.0	Kevin Haworth	Inspection
			6/19/17	24.97	12.0		Survey

			6/28/17	24.67	11.5	Taylor Sieberg	Interrupter
			7/14/17	25.0	12.0	Kevin Haworth	Scout Install
2.	Patoka Terminal	MP 5347	2/17/17	5.9	21.9	Kevin Haworth	Bi Inspection Verified Voltage
			4/19/17	5.1	21.4	Kevin Haworth	Inspection
			6/19/17	5.0	22.0		Survey TransCanada
3.	Patoka Terminal	MP 5354	12/8/16	4.1	12.3	Kevin Haworth	Base Station Replace Battery
			2/17/17	4.1	11.8	Kevin Haworth	Bi
			4/19/17	4.1	11.8	Kevin Haworth	Inspection Install Base Station
			6/19/17	5.6	11.8		Survey TransCanada

Enbridge does not contest the finding that the following rectifier readings were missed:

- Line 63, MP 71.62 – Two readings between 12/15/2016 to 5/9/2017
- Patoka Terminal, Tank (MP) 5354 – October 2016

Critical Bonds:

Bond current measurements at MP 423.5056, MP 423.5056A and 423.5056B were incorrectly identified as “Critical” bonds in the PCS database where Enbridge records cathodic protection data. These three locations should have been identified as “Informational” bonds as they are not interference bonds between Enbridge and Magellan, but are bonds tied into a common bus bar with Magellan. These three locations are current measurements between the three Magellan structures and read for informational purposes only.

There is one single bond tied into a common bus bar with the Magellan Lines 3, 4 and 5 at milepost 421.2065 that is currently identified as “Critical” and measurements recorded on at least on a bi-monthly basis. The bond is pictured below:

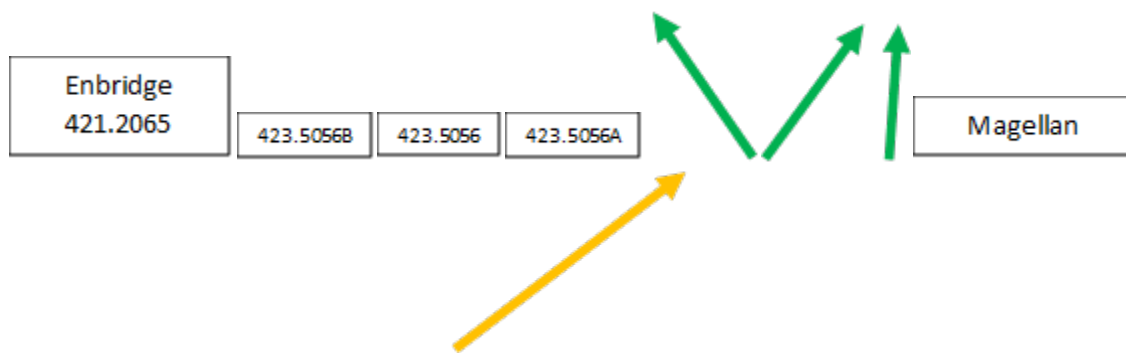


Figure 1 Enbridge Bond with Magellan MP 421.2065

This bond is equipped with a remote monitoring unit that automatically records bond measurements on a scheduled basis. This bond was considered “critical” between 2017 and 2018 and bond measurements were recorded bi-monthly. Prior to 2017 the bond was not considered “critical” and only monitored at least annually.

The following table provides the bond data for MP 421.2065:

ROW Code and Pipe	Milepost	Critical Bond	Location Description	Inspection Date	Bond Current Found	Polarity	Technician
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	12/15/2018 3:01:00 PM	-11.1	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	11/9/2018 10:55:09 AM	-11.9	NEG	C HETHERINGTON NPS
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	10/5/2018 1:10:00 PM	-11.3	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	8/27/2018 3:49:00 PM	-15.6	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	8/6/2018 3:49:00 PM	-13.35	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	7/12/2018 7:50:00 PM	-9.78	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	6/13/2018 3:26:29 PM	-11.6	-	ALAN HARRIS
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	5/13/2018 11:47:00 AM	-12.91	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	4/13/2018 11:47:00 AM	-12.37	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	3/14/2018 11:47:00 AM	-8.41	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	2/12/2018 10:47:00 AM	-12.83	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	1/28/2018 10:48:00 AM	-11.24	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	12/14/2017 10:46:00 AM	-11.75	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	10/26/2017 11:46:00 AM	-17.66	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	8/13/2017 11:47:00 AM	-9.83	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	6/8/2017 3:46:45 PM	-11	-	A HARRIS
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	4/20/2017 3:43:00 PM	-9.84	-	RMU
L0055 02 KY-CU	421.2065	TRUE	Magellan Bond to Lines 3,4 & 5; AM 499.68	2/9/2017 3:14:00 PM	8.83	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	4/28/2016 10:24:07 AM	0.003	+ ENB	RYAN HUGGETT
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	4/14/2016 12:05:57 PM			KEVIN ANDERSON
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	2/21/2016 9:39:21 AM			ANDREW KLEVE
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	1/16/2016 12:00:00 AM	11.44	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	12/2/2015 12:00:00 AM	12.35	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	11/2/2015 12:00:00 AM	11.65	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	10/3/2015 12:00:00 AM	14.18	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	9/3/2015 12:00:00 AM	10.43	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	8/4/2015 12:00:00 AM	11.12	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	7/5/2015 12:00:00 AM	10.7	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	6/18/2015 3:17:00 PM	-1.488		TOM HARLOFF
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	5/6/2015 12:00:00 AM	11.1	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	4/7/2015 12:00:00 AM	11.62	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	3/10/2015 12:00:00 AM	12.3	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	2/3/2015 12:00:00 AM	11.67	+	RMU
L0055 02 KY-CU	421.2065	FALSE	Magellan Bond to Lines 3,4 & 5; AM 499.68	1/20/2015 12:00:00 AM	0.11		RMU

Upon discovering this issue, the bonds at MP 423.5056, MP 423.5056A and 423.5056B were retired as “Critical” bonds. The correct bond for the Magellan foreign lines at MP 421.2065 is currently active and is being monitored as a “critical” bond with a remote monitoring unit.

The information presented in response to this Item resolves 8 of the 11 alleged missed rectifier readings and all of alleged missed critical bond reading. Therefore, Enbridge respectfully requests that PHMSA revise its findings to reflect that no critical bond readings were missed and only 3 of the 11 rectifier readings were missed. Enbridge also respectfully requests that PHMSA substantially reduce the associated civil penalty, as it does not reflect the nature, gravity, and culpability of the violation, and is not in line with civil penalties issued to other operators for similar violations.

13. §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 this subpart complies with §195.571:

(1) Conduct tests on the protected pipeline at least once each calendar year, but with intervals not exceeding 15 months....

(e) *Corrective action.* You must correct any identified deficiency in corrosion control as required by §195.401(b). However, if the deficiency involves a pipeline in an integrity management program under §195.452, you must correct the deficiency as required by §195.452(h).

and

§195.401(b) General Requirements.

(a) ...

(b) An operator must make repairs on its pipeline system according to the following requirements:

(1) *Non Integrity management repairs.* Whenever an operator discovers any condition that could adversely affect the safe operation of its pipeline system, it must correct the condition within a reasonable time. However, if the condition is of such a nature that it presents an immediate hazard to persons or property, the operator may not operate the affected part of the system until it has corrected the unsafe condition.

Enbridge failed to correct deficiencies in corrosion control on certain non-HCA pipeline segments, as required by § 195.573(e). Under that section, operators must correct any identified deficiencies in corrosion control as provided by § 195.401(b)(1), which states that whenever an operator discovers a condition that could adversely affect the safe operation of a non-HCA pipeline, it must correct the condition within a reasonable time.

The following seven test point locations had identified deficiencies of low cathodic protection potentials for multiple surveys in a row.³ However, there is no evidence that Enbridge took measures to correct the deficiencies within a reasonable amount of time or prior to conducting the next inspection required under § 195.573(a).

1. Line 55, MP 266.6379 - Instant off reading on 5/14/2016 was -0.726 mV and on 6/20/2017 it was -0.597 mV. No additional readings taken in 2017.
2. Line 55, MP 507.4760 - Instant off reading on 4/16/2016 was -0.750 mV and on 6/8/2017 it was -0.795 mV. No additional readings taken in 2017.
3. Line 59, MP 163.090 - Instant off reading on 5/15/2016 was -0.840 mV and on 6/21/2017 it was -0.717 mV. No additional readings taken in 2017.
4. Line 59, MP 164.0010 - Instant off reading on 7/9/2015 was -0.825 mV, on 5/16/2016 was -0.694 mV and on 6/21/2017 it was -0.565 mV. No additional readings taken in 2017.
5. Line 59, MP 164.0040 - Instant off reading on 7/9/2015 was -0.815 mV, on 5/16/2016 was -0.646 mV and on 6/21/2017 it was -0.560 mV. No additional readings taken in 2017.
6. Line 59, MP 435.1000 - Instant off reading on 4/15/2016 was -0.680 mV and on 6/8/2017 it was -0.708 mV. No additional readings taken in 2017.
7. Line 59, MP 435.1300 - Instant off reading on 5/15/2016 was -0.587 mV and on 6/8/2017 it was -0.634 mV. No additional readings taken in 2017.

Therefore, Enbridge failed to correct the seven identified deficiencies of low cathodic protection potentials within a reasonable time, as required by § 195.573(e).

Enbridge Response:

Enbridge does not contest this finding and accepts this as a Warning with no penalty. To prevent recurrence, the following actions have been taken:

Starting in 2017, Enbridge took significant steps to prevent recurrence of this type of an issue:

1. *Enbridge notes that in-line inspection data at these locations demonstrate that Enbridge has ensured that at no time did these conditions present any threat to the integrity of the pipeline.*
2. *Consolidation of corrosion prevention efforts in each region under the Pipeline Integrity group and consolidation of survey procedures and standardization of specifications. This resulted in each region performing the same types of surveys using the same standardized specifications.*
3. *Creation of the Corrective Action Reporting (CAR) database – In 2017 Enbridge developed the CAR database. This database is used to track the progression and resolution of identified maintenance and compliance issues. Once an issue such as “potential not in compliance” is identified, a CAR is created documenting the discovery date and information about the issue (location information, detailed descriptions, pictures, data, etc.). As work progresses on the issue, new information is updated to the CAR database. Issues can be tracked by their*

³ Enbridge utilized the -0.850 V “instant off” criteria.

compliance due date and are color coded for prioritizing. As a process, now any time a corrosion prevention compliance issue is identified, a CAR is created to track it through to completion.

Through standardization and procedural changes, deficiencies such as the seven locations in this scenario would have a CAR created and be tracked through to completion.

14. §195.581 Which pipelines must I protect against atmospheric corrosion and what coating material may I use?

(a) You must clean and coat each pipeline or portion of pipeline that is exposed to the atmosphere, except pipelines under paragraph (c) of this section.

Enbridge failed to provide protection against atmospheric corrosion by cleaning and coating each pipeline or portion of pipeline that is exposed to the atmosphere. During the field inspection of Enbridge's Concordia Station, PHMSA observed that the coating had dis-bonded and/or flaked at the pipe-to-soil transitions on both unit sump drain lines. These observations, which were documented with photographic evidence, show that Enbridge failed to provide protection against atmospheric corrosion on its pipeline by cleaning and coating each portion of pipeline that is exposed to the atmosphere.

Enbridge Response:

Enbridge does not contest this finding and the associated civil penalty. The locations identified above have been remediated. as shown in the photos attached to the response as Exhibit NOPV-14

Should you have any questions or require further information regarding any of the NOPV or Warning Items, please do not hesitate to contact me.

Sincerely,



David Stafford,
Manager
US Pipeline Compliance