SECOND AGREEMENT BETWEEN THE STATE OF MICHIGAN, MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, AND MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND ENBRIDGE ENERGY, LIMITED PARTNERSHIP, ENBRIDGE ENERGY COMPANY, INC., AND ENBRIDGE ENERGY PARTNERS, L.P.

This Second Agreement is entered between the State of Michigan, the Michigan Department of Environmental Quality, and the Michigan Department of Natural Resources (collectively referred to herein as "the State"), AND Enbridge Energy, Limited Partnership, Enbridge Energy Company, Inc., formerly known as Lakehead Pipe Line Company, Inc., and Enbridge Energy Partners, L.P. (collectively referred to herein as "Enbridge") concerning those segments of Enbridge's Line 5 pipeline ("Line 5") that are located within the State of Michigan. This Second Agreement results from, and is intended to fulfill, the parties' obligations under Paragraph I.H. of the first Agreement between the State and Enbridge, entered November 27, 2017 ("First Agreement"), in which the parties agreed to pursue a further agreement to address Line 5's crossing of the Straits of Mackinac ("Straits").

WHEREAS, the segments of Line 5 located within Michigan extend 547 miles, from the border of Wisconsin near Ironwood, Michigan to Marysville, Michigan, where it crosses the St. Clair River to the border with Sarnia, Ontario ("St. Clair River Crossing");

WHEREAS, the segments of Line 5 located within Michigan must be operated and maintained in compliance with all applicable laws that are intended to protect the public health, safety, and welfare and prevent pollution, impairment, or destruction of the natural resources of the State of Michigan, including the unique resources of the Great Lakes;

WHEREAS, the continued operation of Line 5 through the State of Michigan serves important public needs by providing substantial volumes of propane to meet the needs of Michigan citizens, supporting businesses in Michigan, and transporting essential hydrocarbon products, including Michigan-produced oil to Michigan and regional refineries and manufacturers;

WHEREAS, the State issued an "Easement" to Lakehead Pipeline Company, Inc. ("Lakehead"), subsequently renamed Enbridge Energy Company, Inc., on April 23, 1953 pursuant to Act No. 10, PA 1953 "for the purpose of erecting, laying, maintaining and operating" an approximate 4-mile segment of Line 5 across the Straits upon determining that such crossing would "be of benefit to all of the people of the State of Michigan and in furtherance of the public welfare";

WHEREAS, in accordance with the Easement, Enbridge constructed two parallel pipelines, each 4.09-miles long (referred to herein as the "Dual Pipelines") across the Straits in

1953 (referred to as the "Straits Crossing"), and since that time continues to operate and maintain such pipelines consistent with the terms of the Easement as part of Line 5 to transport light crude oil, synthetic crude oil, and natural gas liquids;

WHEREAS, on September 3, 2015, Enbridge and the State entered an agreement under which Enbridge affirmed that it does not and will not transport heavy crude oil through the Dual Pipelines;

WHEREAS, the State and Enbridge recognize that the Straits Crossing and the St. Clair River Crossing (collectively "Crossings") are located in the Great Lakes and connecting waters that include and are in proximity to unique ecological and natural resources that are of vital significance to the State and its residents, to tribal governments and their members, to public water supplies, and to the regional economy, and the Crossings are also present in important infrastructure corridors;

WHEREAS, the State and Enbridge recognize that other important ecological and natural resources are located near other segments of Line 5 that cross or approach other waters of the State that are also of vital significance to the State and its residents, to tribal governments and their members, to public water supplies, and to the regional economy;

WHEREAS, in the First Agreement, the State and Enbridge established additional measures with respect to certain matters related to Enbridge's stewardship of Line 5 within Michigan and the transparency of its operation;

WHEREAS, in accordance with Paragraph I.A. of the First Agreement, Enbridge has enhanced its coordination with the State concerning the operation and maintenance of Line 5 located in the State of Michigan;

WHEREAS, in accordance with Paragraph I.B. of the First Agreement, Enbridge timely requested pre-application consultations and applied for all US and Canadian authorizations and approvals necessary to replace Line 5's crossing of the St. Clair River by the use of a horizontal directional drill method;

WHEREAS, under the circumstances specified in Paragraph I.C. and Appendix 1 to the First Agreement, Enbridge has discontinued Line 5 operations in the Straits during sustained adverse weather conditions;

WHEREAS, Enbridge has completed its evaluation of underwater technologies to enhance leak detection and technologies to assess coating condition of the Dual Pipelines and has

submitted the results of such evaluations to the State, in accordance with Paragraph I.D. of the First Agreement;

WHEREAS, Enbridge has submitted to the State an evaluation of measures to mitigate potential vessel anchor strike, in accordance with Paragraph I.E. of the First Agreement;

WHEREAS, Enbridge has submitted to the State an evaluation of alternatives to replace the Dual Pipelines, in accordance with Paragraph I.F. of the First Agreement;

WHEREAS, Enbridge has worked in coordination with the State to identify and evaluate water crossings by Line 5 and to assess measures to minimize the likelihood and/or consequences of a release at each water crossing location, in accordance with Paragraph I.G. of the First Agreement;

WHEREAS, the evaluations carried out pursuant to the First Agreement have identified near-term measures to enhance the safety of Line 5, and a longer-term measure – the replacement of the Dual Pipelines – that can essentially eliminate the risk of adverse impacts that may result from a potential release from Line 5 at the Straits;

WHEREAS Enbridge has recently implemented and committed to continue additional measures to enhance the safety of Line 5; and

WHEREAS, the State acknowledges that the stipulations specified in this Second Agreement are intended to further protect ecological and natural resources held in public trust by the State of Michigan, and that the terms of this Second Agreement will both protect the ecological and natural resources held in public trust by the State and provide clarity as to State's expectations concerning the safety, integrity, and operation of Line 5.

NOW, THEREFORE, the parties agree as set forth below.

I. STIPULATIONS

Enbridge and the State agree to the following measures, which are designed, among other things, to increase coordination between the State and Enbridge concerning the operation and maintenance of Enbridge's Line 5 pipeline located in the State of Michigan, including further enhancing the safety of its operation and reducing the risk of adverse impacts that may result from a potential release from Line 5 at the Straits in the interest of the citizens of Michigan.

A. Continued Coordination Between the State and Enbridge: In order to continue coordination with the State concerning the operation and maintenance of Line 5 located in the

State of Michigan, and to facilitate the implementation of the measures described at Paragraphs B-K below, the parties agree as follows:

1. The State will further provide designated representatives to participate in the stewardship and transparency consultations and communications to be carried out under this Second Agreement.

2. Enbridge will work cooperatively with the State to: (a) make available to the State's representative data and other materials generated under this Second Agreement, including but not limited to geologic, engineering, or other technological information concerning Line 5 located in the State of Michigan and Enbridge's implementation of the measures described herein; and (b) all requested information in Enbridge's possession concerning the operation, integrity management, leak detection, and emergency preparedness for Enbridge's Line 5 pipeline located in the State of Michigan. The State recognizes, and to the extent provided by applicable law will accommodate, Enbridge's interest in protecting from disclosure critical energy infrastructure and other confidential information protected from disclosure by law.

3. Enbridge and representatives designated by the State agree to meet semi-annually to discuss any changes to engineering parameters, risks, new technologies, and innovations pertaining to the operation and maintenance of Line 5 located within the State of Michigan. One such semi-annual meeting shall include subject matter experts from Enbridge and the State to review matters relating to pipeline integrity, emergency response and preparedness for Line 5 located within the State of Michigan.

B. Replacement of Line 5 St. Clair River Crossing: Consistent with Paragraph I.B. of the First Agreement, Enbridge timely met its obligations under the First Agreement by filing applications seeking all state, US federal and Canadian authorizations and approvals necessary for the replacement of the St. Clair River Crossing by use of a horizontal directional drill ("HDD") method. No later than 180 days after obtaining all state, US federal, and Canadian authorizations and approvals necessary to replace Line 5's crossing of the St. Clair River by the use of a HDD method, Enbridge will initiate the work identified in the applications necessary to replace that segment of Line 5.

C. Discontinuation of Line 5 Operations in the Straits During Sustained Adverse Weather Conditions: Until such time that the Dual Pipelines are replaced, Enbridge has and will continue to temporarily shut-down the operation of the Dual Pipelines while "Sustained Adverse

Weather Conditions," as that term is defined in Appendix 1 to this Second Agreement, remain in effect in the Straits, using the procedure set forth in Appendix 1. Additionally, should median wave heights in the Straits over a continuous 60-minute period exceed 6.5 feet in height based upon "Near-real time Data" or in its absence, "Modeled Data," as those terms are defined in Appendix 1, Enbridge shall ensure that at least one Enbridge employee is available and capable of traveling to the Line 5 North Straits valve station in less than 15 minutes. Enbridge will notify the State when the Line 5 Dual Pipelines have been shut down due to "Sustained Adverse Weather Conditions" and again when the Line 5 Dual Pipelines are restarted. Further, the State is planning to install radar technology that will provide additional near real-time data regarding wave height at the Straits. The State and Enbridge agree that when those data become available, they will be shared with Enbridge and applied to the procedures set forth in Appendix 1and this Paragraph. Any modification to Appendix 1 to account for the use of radar technology data shall not require a written Amendment to this Second Agreement under Section II below.

D. Underwater Technologies to Enhance Leak Detection and Technologies to Assess Coating Condition of the Dual Pipelines: Based upon the evaluation performed pursuant to Paragraph I.D. of the First Agreement, Enbridge will conduct a Close Interval Survey ("CIS") of the Dual Pipelines every two years, so long as the Dual Pipelines remain in operation. Enbridge plans to conduct a CIS on the Dual Pipelines in 2018, and shall complete the next CIS within two calendar years from the date on which that CIS is conducted by Enbridge, and then every two calendar years thereafter.

E. Implementation of Measures to Mitigate Potential Vessel Anchor Strike: The United States Coast Guard ("Coast Guard") has proposed the establishment of a Regulated Navigation Area pursuant to 33 CFR 165 in the Straits of Mackinac that would prohibit vessels from anchoring or loitering within that Area without Coast Guard authorization. 83 Federal Register 37780 (August 2, 2018). In order to assist the Coast Guard in monitoring compliance with that regulation, Enbridge agrees to provide one-time funding of up to $200,000 to be used for the acquisition and installation of video cameras at the Straits.

F. Replacement of Dual Pipelines in a Straits Tunnel: Pursuant to Paragraph I.F. of the First Agreement, Enbridge prepared and submitted to the State the report entitled *Alternatives for replacing Enbridge's dual Line 5 pipelines crossing the Straits of Mackinac* (June 15, 2018) ("Alternatives Analysis"). That Alternatives Analysis concluded that construction of a tunnel beneath the lakebed of the Straits connecting the upper and lower peninsulas of Michigan, and the placement in the tunnel of a new oil pipeline, is a feasible alternative for replacing the Dual Pipelines, and that alternative would essentially eliminate the risk of adverse impacts that may result from a potential oil spill in the Straits (hereinafter "Straits Tunnel"). The State and Enbridge agree to promptly pursue further agreements discussed under Paragraph I.G below for

the design, construction, operation, management, and maintenance of the Straits Tunnel in which a replacement for the Dual Pipelines could be located ("Line 5 Straits Replacement Segment").

G. Further Agreements for a Straits Tunnel: The State has proposed that, together with housing the Line 5 Straits Replacement Segment, the Straits Tunnel could accommodate multiple utilities, including but not necessarily limited to: electric transmission lines, and facilities for transmitting data and telecommunications (collectively "Utilities"). The State and Enbridge agree to initiate discussions, as soon as practicable, to negotiate a public-private partnership agreement with the Mackinac Bridge Authority ("Authority") with respect to the Straits Tunnel for the purpose of locating the Line 5 Straits Replacement Segment and, to the extent practicable, Utilities in that Tunnel (hereinafter "Tunnel Project Agreement"). The Tunnel Project Agreement shall include provisions under which the Authority will provide property necessary for the construction of the Straits Tunnel, in return for which Enbridge would: (a) fund the design and construction of the Straits Tunnel; (b) construct the Straits Tunnel; and (c) construct the Line 5 Straits Replacement Segment to be located within the Tunnel. Such agreement shall also provide that the Authority shall: (a) obtain or support Enbridge in obtaining the necessary permits, authorizations, or approvals necessary for the construction and operation of the Tunnel and the Line 5 Straits Replacement Segment; and (b) upon completion of the construction of the Straits Tunnel, the Authority shall assume ownership of the Straits Tunnel. Simultaneous with the execution of such agreement, the Authority would execute a lease or other agreements to: (a) authorize Enbridge's use of the Straits Tunnel for the purpose of locating the Line 5 Straits Replacement Segment for as long as the Line 5 Straits Replacement Segment shall be in operation by Enbridge; (b) provide that Enbridge will operate and maintain the Straits Tunnel during the term of the lease on terms to be agreed; and (c) specify the conditions under which Utilities may gain access to the Straits Tunnel. Provided that the agreements discussed in this Paragraph I.G. are executed by the Authority and Enbridge, the State and Enbridge would simultaneously enter into an agreement expressly confirming Enbridge's rights to operate the Dual Pipelines under the terms of the Easement during the construction of the Straits Tunnel and Line 5 Replacement Straits Segment, subject to compliance with the terms of the agreements described in Paragraph I.G. and applicable laws. Any failure to reach the further agreements contemplated by this Paragraph I.G. shall not alter any existing rights Enbridge has under the Easement.

H. Permanent Deactivation of the Dual Pipelines: Enbridge agrees that following completion of the Straits Tunnel and after the Line 5 Straits Replacement Segment is constructed and placed into service by Enbridge within the Straits Tunnel, Enbridge will permanently deactivate the Dual Pipelines. Consistent with Paragraphs E, H, and Q of the Easement, the procedures, methods, and materials for replacement, relocation, and deactivation of the Dual Pipelines are subject to the written approval of the State, which the State agrees shall not be unreasonably withheld. At a minimum, any portion of the Dual Pipelines that remains in place

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after deactivation shall be thoroughly cleaned of any product or residue thereof and the ends shall be permanently capped to the satisfaction of the State, which shall not be unreasonably withheld. The State and Enbridge agree that decisions regarding the method of deactivation, including potential removal of the Dual Pipelines should take into account short- and long-term effects of the deactivation method options and associated sediment and water quality disturbance on natural resources, particularly fishery resources, in proximity to the Straits. The options include: (a) abandoning in place the entire length of each of the Dual Pipelines; or (b) removing from the Straits the submerged portions of each of the Dual Pipelines that were not fully buried in a ditch and placed under cover near the shoreline of the Straits at the time of initial construction.

I. Line 5 Water Crossings Other Than the Straits: Pursuant to Paragraph I.C. of the First Agreement, Enbridge prepared and submitted to the State the Report entitled *Enhancing Safety and Reducing Potential Impacts at Line 5 Water Crossings* (June 30, 2018) ("Water Crossing Report). As described in the Water Crossing Report, Enbridge and representatives of the State jointly identified and prioritized a total of 74 Line 5 water crossings in Michigan other than the Straits and organized them into 11 area groupings, detailed in Tables 1 and 2 in Appendix A to the Report. The Water Crossing Report assessed available mitigation measures to: (a) minimize the likelihood of potential releases (leak prevention); and (b) reduce the consequences of potential releases if they were to occur. Based on that assessment, the Report identified a series of specific Action Items to address both of those objectives and proposed time frames for their implementation (Report, pp 18- 24). They include measures related to: (a) Enbridge's Mainline Integrity program; (b) Enbridge's Geohazard Management Program; (c) Pipeline Damage Prevention; (d) Emergency Response; and (e) Environmental Management. As reflected in the Water Crossing Report, the Action Items include, among other things, measures that are intended to increase by an order of magnitude Enbridge's leak prevention safety targets for certain water crossings.

In addition to completing all of the Action Items identified in the Report, the parties have agreed upon two projects at water crossings on which preparatory work shall immediately begin. These specific mitigation measures to be implemented in the near term at certain locations as are specified in Appendix 2 of this Second Agreement.

Enbridge shall implement the Action Items as described in the Report, and as supplemented in this Second Agreement and the Summary contained in Appendix 2 to this Second Agreement, provided that the State and Enbridge may mutually agree in writing to modify Action Items, as well as any tangible follow-up actions, tasks, or mitigation measures associated with the Action Items, as necessary to accommodate site conditions and industry best practices. Any such modifications do not require a written Amendment to this Second Agreement under Section II below. To the extent they differ: (i) the terms of any modification

to the Action Items takes precedence over this Second Agreement; (ii) the terms of this Second Agreement takes precedence over those of Appendix 2; and (iii) those terms of Appendix 2 take precedence over those of the Report.

J. Financial Assurance: The State commissioned the final *Independent Risk Analysis for the Straits Pipelines* (Meadows, et al., September 15, 2018) (hereinafter "Independent Risk Analysis") to assess a worst-case discharge from the Dual Pipelines, including the cost of responding to that worst-case discharge. Enbridge strongly disagrees with the methods and conclusions of the Independent Risk Analysis report, and nothing in this Second Agreement shall be construed to constitute Enbridge's acceptance of those methods and conclusions. Enbridge nonetheless agrees that, so long as it continues to operate the Dual Pipelines, the Enbridge entity or entities that own and operate Line 5, or the parent companies of such Enbridge entity(ies), will maintain in force financial assurance mechanisms that meet or exceed the $1,878,000,000 estimate of Enbridge's potential total quantifiable response liability for a worst-case discharge from the Dual Pipelines that is identified in the Independent Risk Analysis. To demonstrate compliance with this requirement, on an annual basis Enbridge will file with the State updated financial assurance information in a format similar to that provided in Appendix 3. Enbridge further agrees that, upon the request by the State, it will on an annual basis, make available to the State for inspection and review information regarding the amount, availability, and changes to liability insurance that it maintains. The State agrees that Enbridge's compliance with the requirements under this Paragraph I.J. satisfies its financial assurance obligations specified under Paragraph J of the Easement.

K. Continuation of Additional Measures to Enhance the Safety of Line 5 in Michigan: Enbridge has in recent years undertaken a variety of additional measures to enhance the safety of Line 5 in Michigan and to improve its emergency preparedness and response capabilities. Such measures, as listed in Appendix 4 to this Agreement, include but are not limited to: (i) the purchase and placement of additional emergency response equipment; (ii) the positioning of permanent personnel in proximity to the Straits; and (iii) improvements to personnel response times to manually close valves in proximity to the Straits. Enbridge agrees that it will continue to implement the measures listed in Appendix 4 so long as it continues to operate the portions of Line 5 to which they apply.

II. AMENDMENT

The State or Enbridge may propose in writing that this Second Agreement be amended. The State and Enbridge agree to consult in good faith in an effort to reach agreement on any proposed amendment. Except as provided in Paragraph I.G., any amendment agreed to by the State and Enbridge shall be effective on the date that any written amendment is executed by the State and Enbridge.

III. DISPUTE RESOLUTION

The State and Enbridge agree that, should any dispute arise under this Second Agreement, the State and Enbridge shall in good faith attempt to resolve the dispute through informal negotiations. If the parties are unable to informally resolve such a dispute, either party may initiate proceedings in a court of competent jurisdiction to resolve the dispute.

IV. TERM AND TERMINATION

The terms of this Second Agreement shall remain in effect until the commitments in Paragraphs I.B., I.E. - I.I. above are fulfilled, except that the obligations in Paragraphs I.A., I.C., I.D., I.J., and I.K. shall continue, subject to the terms set forth in those Paragraphs, unless and until the Second Agreement terminates automatically. This Second Agreement shall terminate automatically upon the voluntary discontinuation of service by Enbridge of Line 5 through the State of Michigan.

V. COMPLIANCE WITH APPLICABLE LAW

The State and Enbridge acknowledge and agree that Enbridge's operation of Line 5 remains subject to the requirements of all applicable state and federal law, the Easement, the September 3, 2015 Agreement with the State that prohibits Enbridge from transporting heavy crude oil on Line 5 within the State of Michigan, and the terms of any easement granted by the State for Line 5 and agree that nothing in this Second Agreement is intended to relieve Enbridge of its obligation to comply with or waive any rights that Enbridge and the State may have under such laws or to supersede or displace applicable state law, regulation or requirement, or any federal law, regulation, or requirement that is applicable to the operation or maintenance of Line 5, including but not limited to the Pipeline Safety Act (including its preemption provisions); the Protecting Our Infrastructure of Pipelines and Enhancing Safety Act of 2016 (Public Law 114-183); any regulation or order issued by PHMSA or any other federal agency; or the Consent Decree entered into between Enbridge and the United States in *United States v. Enbridge Energy, Limited Partnership, et al.*, No. 1:16-cv-914, ECF No. 14 (E.D. Mich., entered May 23, 2017), which specifies certain investigation, integrity management, leak detection, valve placement, and emergency response measures to prevent discharges of oil or hazardous substances into or upon the waters of the United States or adjoining shorelines.

VI. ENTIRE AGREEMENT

This Second Agreement constitutes the whole of the Agreement between the parties concerning those portions of Enbridge's Line 5 located in the State of Michigan. This Second Agreement supersedes in its entirety the First Agreement.

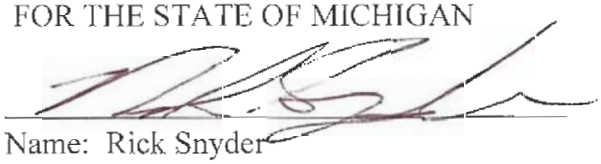
VII. EXECUTION

This Second Agreement may be executed in counterparts without the necessity that the Parties execute the same counterpart, each of which will be deemed an original, but which together will constitute one and the same agreement. The exchange of copies of this Second Agreement by electronic or hard-copy means shall constitute effective execution and delivery thereof and may be used in lieu of the original for all purposes.

VIII. NO THIRD PARTY BENEFICIARIES

This Second Agreement is intended for the exclusive benefit of the parties hereto and their respective successors. Nothing contained in this Second Agreement shall be construed as creating any rights or benefits in or to any third party. This Second Agreement does not give rise to a private right of action for any person other than the parties to this Second Agreement.

FOR THE STATE OF MICHIGAN



Name: Rick Snyder
Title: Governor
Dated: 10/3/18

_____

Name: Keith Creagh
Title: Director, Michigan Department of Natural Resources
Dated: _____

_____

Name: Heidi Grether
Title: Director, Michigan Department of Environmental Quality
Dated: _____

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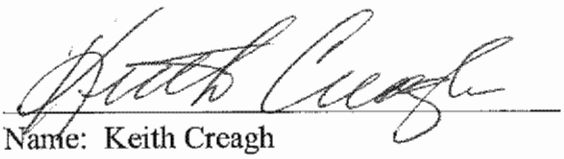
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FOR THE STATE OF MICHIGAN

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Name: Rick Snyder
Title: Governor
Dated: _____



Name: Keith Creagh
Title: Director, Michigan Department of Natural Resources
Dated: 10/3/2018

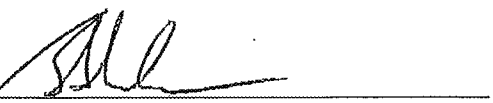
C. Heidi Grether

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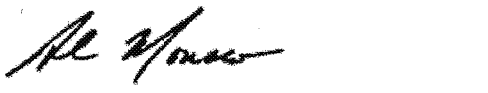
Name: Heidi Grether
Title: Director, Michigan Department of Environmental Quality
Dated: 10/3/18

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FOR ENBRIDGE ENERGY, LIMITED PARTNERSHIP
BY: ENBRIDGE PIPELINES (LAKEHEAD) L.L.C. AS GENERAL PARTNER



Name: Bradley F. Shamla
Title: Vice President, U.S. Operations
Dated: 10/2/2018

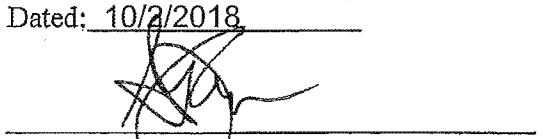


Name: Al Monaco
Title: Authorized Signatory for Enbridge Pipelines (Lakehead) L.L.C.
Dated: 10/2/2018

FOR ENBRIDGE ENERGY COMPANY, INC.



Name: Bradley F. Shamla
Title: Vice President, U.S. Operations
Dated: 10/2/2018



Name: Guy Jarvis
Title: Executive Vice President – Liquids Pipelines
Dated: 10/2/2018

FOR ENBRIDGE ENERGY PARTNERS, L.P.
BY: ENBRIDGE ENERGY MANAGEMENT, L.L.C. AS DELEGATE OF ITS GENERAL PARTNER



Name: Bradley F. Shamla
Title: Vice President, U.S. Operations
Dated: 10/2/2018

Appendix 1

Enbridge Line 5 – Sustained Adverse Weather Conditions Procedure

This Appendix is designed to facilitate an effective emergency response to a potential release incident by specifying procedures for a systematic approach by Enbridge to temporarily shut down Line 5 in the Straits of Mackinac during Sustained Adverse Weather Conditions. Enbridge shall maintain a record of its use of the procedure and make it available to the State. If an alternate source of near-real time wave height data such as the radar system planned by the State becomes available following the execution of this agreement, Enbridge and the State will work cooperatively to revise this Appendix to account for the alternative data source.

Definitions:

Sustained Adverse Weather Conditions: Conditions in which median wave heights in the Straits of Mackinac over a continuous 60-minute period are greater than 8 feet based on "Near-real Time Data," or in its absence "Modeled Data."

Near-real Time Data: The wave height data derived from Buoy 45175 (Mackinac Straits West) of the Great Lakes Research Center of Michigan Technological University's Upper-Great Lakes Observing System (UGLOS) and/or alternate data sources such as radar data, as mutually agreed by the State and Enbridge through a modification of this Appendix.

Modeled Data: Modeled wave height data based on real-time data inputs that is available on the NOAA Great Lakes Coastal Forecasting System (GLCFS) Nowcast model at a representative point in the Straits.

Forecasted Data: Data available on the NOAA Great Lakes Coastal Forecasting System Forecast model at a representative point in the Straits.

Enbridge Line 5 Procedures – Sustained Adverse Weather Conditions

Step #	Action
1	Enbridge or Enbridge Consultant (collectively "Enbridge Monitor") will continuously monitor Near-real Time Data, or in its absence Modeled Data, to identify Sustained Adverse Weather Conditions at the Straits.
2	When Sustained Adverse Weather Conditions are forecasted based on Forecasted Data, the Enbridge Monitor will inform the Control Center Operations Shift Supervisor, at which point the Control Center Operations will prepare for the potential that an unplanned shut down of Line 5 at the Straits may be required.
3	When Near-real Time Data, or in its absence Modeled Data, indicate that Sustained Adverse Weather Conditions are occurring at the Straits, the Enbridge Monitor will immediately contact the Control Center Operations Shift Supervisor.

Step #	Action
4	The Control Center Operations Shift Supervisor will promptly call the Enbridge Great Lakes On-Call Manager to advise them that Sustained Adverse Weather Conditions exist at the Straits.
5	The Enbridge Great Lakes On-Call Manager will request, no later than 15 minutes after being notified in Step 4 above, that the Control Center Operations shutdown Line 5. If real time conditions in the Straits determined by the Enbridge Great Lakes On-Call Manager indicate Sustained Adverse Weather Conditions do not exist, the Great Lakes On-Call Manager will advise the Control Center Operations Shift Supervisor that Line 5 should not be shutdown. In that event, the Enbridge Monitor will continue to monitor conditions as per Step 1 for changes that indicate that Sustained Adverse Weather conditions may be present and the other Steps in this Appendix shall be followed should the Enbridge Monitor determine that such conditions are present.
6	Unless advised otherwise by the Enbridge Great Lakes On-Call Manager as per Step 5 above, Control Center Operations will perform a controlled emergency shut down of Line 5 and isolate the segment across the Straits.
7	While shut down, the Enbridge Monitor will continuously monitor Near-real Time Data, or in its absence Modeled Data, to identify the continuance of Sustained Adverse Weather Conditions at the Straits.
8	When Near-real Time Data, or in its absence Modeled Data, indicates the Sustained Adverse Weather Conditions no longer exist at the Straits, the Enbridge Great Lakes On Call Manager and Control Center Operations Admin On Call will authorize the restart of Line 5.
9	Control Center Operations will safely restart Line 5.

Communications Protocol:

Enbridge shall immediately notify the State of Michigan as follows: (i) when median wave heights in the Straits over a continuous 60-minute period exceed 6.5 feet in height based upon "Near-real time Data" or in its absence, "Modeled Data," as those terms are defined in Appendix 1, and Enbridge has acted to ensure that at least one Enbridge employee is available and capable of traveling to the Line 5 North Straits valve station in less than 15 minutes; (ii) when Line 5 has been temporarily shut down in the Straits of Mackinac due to Sustained Adverse Weather Conditions, as per Step 6 above; and (iii) when Line 5 has been safely restarted in the Straits of Mackinac, as per Step 9 above. Any notification required under this provision shall be made by email to a specified email address provided to Enbridge by the State of Michigan.

Appendix 2

Action Items for Water Crossings Other than the Straits

A. Additional Near-Term Items

1. Mitigate potential geohazard at the following water crossings:
    a. Point Aux Chenes (3)-restore depth of cover and stabilize bank to prevent further erosion:
        i. Work with State Technical Team to select method, design and schedule within 3 months from the effective date of this Agreement.
        ii. Apply for all necessary permits within 6 months from the effective date of this Agreement.
        iii. Complete construction of mitigation measures within 12 months after receipt of permits.
    b. Tributary to Paint River – Address exposed section of pipeline:
        i. Work with State Technical Team to select method, design and schedule within 3 months of the effective date of this Agreement.
        ii. Apply for all necessary permits within 6 months from the effective date of this Agreement.
        iii. Complete construction of mitigation measures within 12 months after receipt of permits.
2. Accelerated field work to evaluate crossings with potential need for geohazard remediation. Additional information to be gathered for the following crossings within 6 months from the effective date of this Agreement:

    a. Whitefish River - MP 1358
    b. Rapid River – MP 1356
    c. Tributary to Southwest Branch Fishdam River – MP 1373
    d. Elm Creek – MP 1691
    e. East Branch Black River – MP 1442
    f. East Mile Creek – MP 1436
    g. Paquin Creek – MP 1448
    h. Pointe Aux Chenes River (1) – MP 1466
    i. West Branch Paquin Creek – MP 1447
    j. West Mile Creek – MP 1436
    k. Red Creek – MP 1563

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Based on evaluations, remedial measures, if needed, may include: depth of cover restoration; bank and bed armoring; or pipeline lowering or replacement. These remedial measures will be implemented as follows:

i. Work with State Technical Team for method selection, design and schedule within 6 months from the effective date of this Agreement.
ii. Apply for all necessary permits within 12 months from the effective date of this Agreement.
iii. Complete construction of remedial measures within 12 months after receipt of permits.

B. Action Items in Report

Preventive and Mitigative Measures	Time to Complete (months)	Number of locations
Leak Prevention Measures		
1. Increase Safety Targets Within Grouping Areas	6	All
2. Engineering Assessment	12	4
3. Baseline Geohazard Assessment	18	17
4. Depth of Cover/Bathymetric Survey	18	31
5. Perform Detailed Scour Study	18	7
6. Replacement/Lowering	TBD	TBD
7. Outreach to local government officials involved in construction activities near waterbodies	6	All

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Consequence Mitigation Measures

8.	Review Emergency Response Training and Exercise Communication Plan	6	All
9.	Establish Additional Emergency Response Tactical Control Points	12	10
10.	Collaborative Review of Emergency Response Tactical Control Points	9	All
11.	Update Environmental Sensitivity Maps with State Sensitivity Data	12	All
12.	Review Emergency Response Aquatic Invasive Species Inspection Procedure	12	All
13.	Conduct Baseline Environmental Studies - Rare Wetland Communities	18	20

Biology Mitigation Studies

14.	Fisheries	18	12
15.	Freshwater Mussels	18	31
16.	Biological Integrity	18	11

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Appendix 3
Enbridge Financial Assurance Verification Form for Calendar Year [Insert]

	Enbridge Inc. (EI)	Enbridge Energy Partners, L.P. (EEP)	Total	Timing of Access (business days - estimate)
Cash	$ (as per EI's consolidated Q_ 20__ balance sheet– cash & cash equivalents		$	1 day
Credit Facility (available liquidity as at [date]) Note 1	$	$	$	1-3 days
Other Resources Available in 30-60 Days (explain)	$ (as per EI's consolidated Q_ 20__ balance sheet – accounts receivable and other)		$	30-60 days
Total Short-Term	$	$	$	
Insurance	General Liability Insurance, includes Time Element Reporting Pollution (sudden and accidental) coverage currently US$[Insert] Note 2			Note 3
Surety Bonds				
Parent/Affiliate Guarantees (from Parent Co. to Authorization Holder)				
Other Financial Resources (explain)				
Total Other				

Notes:

1. Enbridge utilizes the commercial paper markets in both Canada and the US as a cost effective source of short term liquidity. The commercial paper programs are fully backstopped by the Credit Facilities and the availability of such is reflected net of any commercial paper outstanding.

2. The reflected insurance amount represents the limit for coverage that is maintained by EI for the specified calendar year, and for which EEP is named as an insured under that policy, thereby enabling EEP to obtain insurance recoveries for events covered under the policy. The insurance amount is reviewed and renewed on an annual basis and is subject to insurance market conditions and experience that may impact the breadth and limit of coverage available.

3. The insurance coverage maintained by EI provides any Enbridge entity covered under that policy, such as EEP, with eventual recovery of monies which that Enbridge entity has paid because of its legal liability for direct third- party bodily injury and property damage caused by the release and that financial recovery can extend over a period of months and years.

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Appendix 4

Enhanced Safety and Emergency Response Capabilities

Enbridge has, in recent years, undertaken a variety of additional measures to enhance the safety of Line 5 and to improve its emergency preparedness and response capability at the Straits of Mackinac, in the Great Lakes, and throughout Michigan. Enbridge agrees that it will continue these measures so long as it continues to operate the portions of Line 5 to which they apply. These measures include, but are not limited to:

Equipment:

a. Enbridge recently strengthened its already robust emergency response capabilities for the Great Lakes by adding more than $7 million of emergency response equipment to be staged at the Straits of Mackinac. This equipment can be deployed in the Straits and throughout the Great Lakes as necessary. The new equipment includes, but is not limited to:
   - 10,000 feet of Sea Sentry Boom - heavy duty open water containment boom which is fit for service in the presence of ice and rough waters. This boom can withstand wave action to eight feet.
   - 1,000 feet of Fire Boom, necessary for an in situ burning response.
   - Lamor Ice Skimmers (the first deployment in North America)
   - Nofi Current Busters

b. The company holds annual boom deployment exercises in the Great Lakes.

c. Valve Closure Gang boxes, which includes the necessary equipment to execute a manual valve closure, have been located at North Straits valve site and pre-located at each pump station along Line 5.

Personnel:

d. Enbridge established a Pipeline Maintenance (PLM) Crew at St. Ignace adding five employees in addition to the Enbridge employee permanently based in the Straits of Mackinac area. This crew augments crews already stationed along Line 5 in Ironwood, Escanaba, Indian River, and Bay City.

e. Enbridge recently agreed to purchase a building in St. Ignace that will house its local operations employees. The new facility is less than 10 minutes from the North Straits valve site.

f. Enbridge has implemented Incident Command System (ICS) role specific training for its Regional team and Operations Leadership individuals.

Response time:

g. The company improved personnel response time for manual closing of valves at the North Straits valve site to under an hour, and with a target time of no more than 45 minutes – no matter what time of day or weather condition. Manual closing of the valves would be necessary only if all other redundant systems on Line 5 at the Straits would fail. The redundant systems include:
   1) Dedicated 24/7 remote operational control of the pipelines from the Enbridge Control Center. All valves can be remotely opened and closed by the Control Center.

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- If there is a power failure at the North Straits site resulting in communications loss with the Control Center, an automatic back-up generator on-site will restore power and allow communications with the Control Center.

2) The pipelines at the Straits are equipped with automatic shut-off valves which will close within three minutes should a threshold pressure loss occur in the pipelines. These closures would be independent of and could not be overridden by any Control Center action. In the unlikely event that communications with the Control Center is lost due to a power outage and the backup generator fails, and the automatic valves fail to operate properly, valves can be closed manually.

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