



Enbridge Energy, Limited Partnership

Restart Plan for Line 6B

**Prepared for
Pipeline and Hazardous Materials Safety Administration
(PHMSA)**

September 21, 2010

Table of Contents

1.	Introduction.....	1
2.	Preparatory Actions Prior to Restart.....	3
2.1	Examination of the Pipeline at the Failure Location.....	3
2.2	Repair of the Pipeline at the Failure Location	4
2.3	Integrity Validation Pressure Test	4
2.4	Investigative Excavations and Specifically Requested Anomaly Information.....	6
2.5	Integrity Assessment for the Entire Line 6B	8
2.6	Integrity Investigation Reports for Entire Line 6B	8
2.7	Incident Website	8
2.8	Preparation of Integrity Verification and Remedial Workplan.....	9
2.9	Control Center Line 6B Pre-Start	10
2.9.1	External Third Party Oversight and Verification Process.....	10
2.9.2	Control Center System Modifications and Personnel Training	10
3.	Actions During Restart	13
3.1	Line 6B Startup Activities	13
3.1.1	Staffing Logistics	13
3.1.2	Pre-Start Checklist.....	14
3.1.3	Line 6B Restart – Pre-Approvals and Staged Ramp-Up	15
3.1.4	Line 6B Restart Procedure.....	16
3.2	Field Operations Activities.....	18
3.2.1	Operations Liaison	18
3.2.2	Pump Station Monitoring	18
3.2.3	Pig Tracking.....	19
3.2.4	Aerial Patrol.....	19
3.2.5	St. Clair Monitoring (Canada)	20
4.	Conclusion	20

This Restart Plan concerning Line 6B is submitted by Enbridge Energy, Limited Partnership (“Enbridge”) as ordered by the Pipeline and Hazardous Materials Safety Administration’s (“PHMSA”) July 28, 2010 Corrective Action Order (“CAO”). This Plan is being submitted for approval by PHMSA’s Regional Director, Central Region as per item 1 of page 3 of the CAO. This Plan is consistent with the requirements of the CAO and PHMSA’s September 17, 2010 Notice of Proposed Amendment to The Corrective Action Order. Technical documentation to support this plan was previously submitted to PHMSA on August 28, 2010, and identified as “Consolidated Information.” The purpose of this Restart Plan is to document Enbridge’s prestart-up preparations as well as the procedure to be followed for restarting Line 6B at a reduced pressure under controlled conditions and enhanced monitoring.

1. INTRODUCTION

On July 26, 2010, a pipeline leak was discovered on Enbridge Line 6B, one mile downstream of Marshall Station near MP 608 in Calhoun County, Michigan. In accordance with the PHMSA’s July 28, 2010 CAO, Enbridge has undertaken significant measures to ensure that the restart of Enbridge’s pipeline Line 6B will be executed and completed in a safe and operationally sound manner.

Enbridge completed integrity verification digs and repairs, completed an engineering assessment of the St. Clair River feature, fulfilled the requirements for restart stated in the CAO, and prepared a Line 6B Integrity Summary Assessment. Enbridge also successfully completed the integrity verification pressure test on August 30, 2010. These measures support the conclusion that adequate steps have been taken to safely restart Line 6B at reduced pressures and that the supplementary monitoring measures taken during such restart protects public and environmental safety.

As per PHMSA’s stated directives to Enbridge, Line 6B operating pressures at restart will be at interim reduced levels. The lower operating pressures proposed to be in effect upon restart provide a significant margin of safety. The Specified Minimum Yield Strength (SMYS) for Line 6B is 866 psig. The original hydrostatic pressure test for the line at installation established a Maximum Allowable Operating Pressure (MOP) of 624 psig in accordance with 49 CFR Part

195. As discussed in previous filings, Enbridge had self-imposed pressure reductions below the MOP at points along the pipeline to increase the margin of safety where plans were under consideration to remediate, repair and/or replace certain segments. Upon restart, the operating pressures will be *further* reduced to be below the test pressure of the hydrostatic pressure test conducted along 13-miles of Line 6B on August 30, 2010. The reduced pressures will be 20% below the operating pressure at each station at the time of the incident. A pressure reduction in operating pipelines is a well-validated risk reduction mitigation measure used by industry and accepted by U.S. regulatory agencies and international research and technical organizations. The significantly lower discharge pressures proposed for Line 6B on an interim basis are less than 50% of the Specified Minimum Yield Strength (“SMYS”) of the entire Line 6B. This provides a significant safety margin pending future metallurgical results of the incident investigation by National Transportation Safety Board (“NTSB”) and additional future remediation and repair programs that will be conducted by Enbridge under the oversight of PHMSA.

After start up of Line 6B, Enbridge will continue to apply applicable technologies to assess all potential feature types and carry out further investigative excavations and analysis. Within fourteen days of startup, Enbridge will initiate another internal inspection of the entire Line 6B using crack detection and corrosion high resolution in-line inspection tools which will be used to confirm certainty of the integrity condition of the pipeline with full consideration of results from the failure forensics. These assessments can only be done after restart of the pipeline due to the need for product flow to move the internal inspection tools.

This document covers Enbridge’s pre-restart and restart activities. Under Section 2, the plan documents the corrective actions which Enbridge has taken in advance of the restart in order to meet or exceed the requirements of the CAO and pipeline safety regulations. Under Section 3, the plan describes the start-up process which Enbridge will follow during the restart. The CAO and the to-be-submitted integrity verification and remedial work plan will describe Enbridge’s other required corrective actions.

Enbridge submits that the combination of its corrective actions, coupled with the stringent processes during execution of the restart itself, will ensure that Line 6B is fit to return to service in accordance with regulatory requirements and prudent operational practices.

2. PREPARATORY ACTIONS PRIOR TO RESTART

In preparation of the restart, the following actions for Line 6B have already been completed by Enbridge.

2.1 Examination of the Pipeline at the Failure Location

A complete examination of the pipeline was conducted extending 50 feet on either side of the failed section, including verification of cathodic protection, as per item 2 of page 3 of the CAO. The pipeline was also examined for 50 feet on either side of the failed pipe for corrosion, coating conditions, and other issues that can be identified through external physical inspection. The review also involved correlating the observed conditions with previous ILI inspection data. No unusual conditions were identified and all areas were determined to be acceptable with no repairs required. The 50 foot examinations on the existing pipe upstream and downstream confirmed that the adjacent pipe did not require repair or replacement.

The cathodic protection was verified by conducting a close interval survey after release and prior to repair, and pipe to soil readings were confirmed to be within acceptable criteria. A close interval survey consists of recording structure to soil voltage potentials over the top of the pipeline, at ten foot intervals, and with the rectifiers providing cathodic protection current cycling on and off so the voltage drops in the circuit can be eliminated. Structure voltage is collected by placing a copper/copper sulfate reference electrode in the ground directly over the top of the pipeline, connecting the reference electrode to a high impedance volt meter that is connected to the structure. By taking potential readings at specified intervals, it is possible to determine if the structure is receiving adequate cathodic protection current and meets or exceeds the minimum levels of cathodic protection mandated in 49 CFR Part 195. The initial surveys were done on July 31, 2010 and August 1, 2010, with just Enbridge rectifiers interrupted. A copy of the results was submitted in response to NTSB and PHMSA requests.

On August 31, 2010 Enbridge obtained follow-up cathodic protection structure-to-soil potentials, and results indicated adequate cathodic protection was being applied to the pipeline. These readings were obtained after the failed pipe was replaced. This follow-up survey was performed with both Enbridge and nearby Wolverine Pipeline rectifiers simultaneously interrupted.

2.2 Repair of the Pipeline at the Failure Location

Upon completion of the examination, 51 feet of new pipe was installed to repair the failed section. The pipe installed was manufactured by JFE Steel Corporation and met API 5L, Grade X-70, 0.375-inch wall thickness specifications.

The details of Enbridge's examination and repair processes were submitted to PHMSA for review and approval on August 31, 2010. PHMSA was provided proprietary information including details on the Line 6B MP 608 cut out and removal procedures, Pipeline Repair/Modification Work Job Planning Template, the related proprietary Enbridge procedures ((1) Excavating the Worksite and (2) Defect Evaluation and Repair Methods), as well as relevant schematics.

2.3 Integrity Validation Pressure Test

On August 30, 2010, Enbridge successfully completed an integrity validation pressure test along 13-miles of Line 6B, under the oversight of PHMSA as per item 2 of the requirements in PHMSA's letter to Enbridge dated August 10, 2010 (the "August 10 Letter").

The submitted Hydrostatic Test Plan covered a portion of Enbridge's Line 6B pipeline from MP 607 to MP 620. The Hydrostatic Test Plan incorporates a single segment testing regime and included the segment of line isolated between the Marshall Station discharge gate valve (valve #606.66-6-V) and the mainline sectionalizing valve located at Milepost 620 (MLV620.66-6-V). The plan was supplemented with Enbridge existing hydrostatic testing standards.

The Hydrostatic Test Plan injected water into the tested pipe section and applied sufficient pressure to reach a minimum 450psi test level. After the specific test pressure was reached the pressure pump was shut down and valves closed. After the valves were closed, all visible piping was inspected for leaks and the test period began. Testing consisted of a continuous 8-hour hold at specified test pressure. The test is accepted if the test pressure is maintained between the acceptable limit for the complete duration of the test, and any pressure changes can be reconciled with temperature or volume changes. A test is performed by balancing changes in measured pressure in the test section against the theoretical changes in pressure calculated from changes in the measured temperature of the test section. A test is only acceptable if there are no leaks, and any pressure changes can be reconciled with temperature or volume changes.

Prior to the start of hydrostatic testing the following was performed by Enbridge personnel or our representatives:

- Enbridge notified all affected public that live within 660-feet of the pipeline of the impending pressure test, using the width and definitions of affected public consistent with the Public Awareness Standards in API Recommended Practice 1162
- Offered temporary accommodations to any landowners and tenants within 100 feet of the test section who wished to evacuate the test corridor during the hydrostatic test period.
- Set-up 24-hour hydrotest “resident emergency” phone number, using our recently established and widely publicized toll free Community Hot Line established to address community questions as a result of this incident, which was attended 24 hours a day during the duration of the test.
- Test personnel were provided written instructions as to requirements of the specifications and received a copy of the test plan.
- Areas where pipe is visible or above ground had safety barricades, roped off areas and/or signs.
- Placed hydrotest warning signs at all roadways and access points to the ROW.
- Ensured that first responders in Calhoun County were made aware that hydrostatic testing will be taking place.

- All equipment, instrumentation, test headers, valves, and connections were checked to verify proper position and in good working order for the test.
- A test shelter was provided to protect instrumentation and test personnel from weather.
- Regular hourly patrols of the entire test section took place along the roadways and access points so that onlookers or unaware passers were prevented from entering the area during testing.
- Tailgate Safety Meetings for all Enbridge staff and contracted workers were held prior to beginning the hydrostatic testing activities and on a regular basis throughout the hydrostatic testing operation. As appropriate, all workers were qualified according to the 49 CFR Part 195 “Operator Qualification” requirements for safety related tasks on the pipeline.

Upon completion of the testing, the test water was isolated in the test segment and will be delivered to the Enbridge Stockbridge station and breakout tank terminal after line restart. The test water will be treated and disposed of in accordance with all applicable regulatory requirements.

The integrity validation test was successful and the pressure remained constant at 455 psi throughout the test period. No further repairs or remediation to the tested section of Line 6B was directed by PHMSA following completion of the pressure test. The proposed interim operating discharge pressure in all of the segments will be lower than the 450 psig target pressure test level. The results of Enbridge’s pressure test have previously been submitted to PHMSA.

2.4 Investigative Excavations and Specifically Requested Anomaly Information

Pursuant to the CAO and other PHMSA guidance on the appropriate content of the restart plan, Enbridge was required to determine, investigate and remediate as necessary, at least four additional anomalies in Line 6B subject to similar operating parameters as the anomaly associated with the pipeline failure.

Six sites were selected based on all currently available information. Based on all currently known information, no anomalies in the pipeline, including those within the sites selected, met the need for immediate safety action or are viewed to be injurious. The sites were

selected with the intent of advancing the investigative process and further affirming the safe operability of the entire pipeline at the restricted pressure. The excavation and examination of the pipe at the investigative sites were consistent and in line with the conditions typically observed and expected from existing integrity programs and did not indicate circumstances similar to those of the failed pipe. Enbridge has provided PHMSA with a detailed analysis of specific findings resulting from the investigative excavations and a description of the repairs. The chart below summarizes the results:

Location (Milepost)	Field Results and Conclusions
608	Features found as located by in-line inspection. Investigation confirmed that repair not required.
612	Field results matched with in-line inspection. Pipe grinding conducted as part of the investigation. Ground out area was reinforced with a sleeve prior to recoat and backfill.
620	Field results matched with in-line inspection. Repair not required.
654	Features found as located by in-line inspection. Pipe grinding conducted as part of the investigation. Ground out area was reinforced with a sleeve prior to recoat and backfill.
655	Field results matched with in-line inspection. Pipe grinding conducted as part of the investigation. Ground out area was reinforced with a sleeve prior to recoat and backfill.
683	Field results matched with in-line inspection. Pipe grinding conducted as part of the investigation. Ground out area was reinforced with a sleeve prior to recoat and backfill.

In addition to the sites selected based on similar operating parameters to the anomaly associated with the pipeline failure, Enbridge has undertaken nineteen additional investigative excavations at sites selected by Enbridge immediately following the incident. The investigative excavations are progressing and results from those sites will be provided to PHMSA.

Enbridge has also provided PHMSA with information regarding anomalies at Mileposts 710.22 and 751.74 as per item 1.c of the August 10 Letter.

2.5 Integrity Assessment for the Entire Line 6B

Enbridge prepared and submitted to PHMSA on August 31, 2010 a Line 6B Integrity Summary Assessment Report that analyzes all known and potential features on Line 6B. The Report provides an operational reliability assessment with technical detail demonstrating the safe start-up and continued operation of the pipeline at lower-than-normal operating pressures relative to known existing features on Line 6B. The Report summarized the following potential integrity issues relative to Line 6B, given its design and operating history: (1) Stress Corrosion Cracking, (2) Long Seam Fatigue Cracking, (3) External Corrosion, (4) Internal Corrosion, (5) Dents, and (6) Girth Weld Cracking. The assessment provided detailed information about Enbridge's susceptibility to these conditions, ability to detect these conditions, growth rates for any existing features, and specifics on Enbridge's integrity management plan with respect to these conditions. The Report concluded that the pipeline is reliable and ready for restart and operation at reduced pressure. Enbridge intends to take any required action based on the recommendations in its integrity verification and remedial work plan.

2.6 Integrity Investigation Reports for Entire Line 6B

Enbridge has provided in-line inspection vendor reports and details of all investigative excavations and reviews to PHMSA as per item 1.b of the August 10 Letter. Enbridge continues to gather investigative data to reassess current feature assessment criteria.

2.7 Incident Website

Upon notification of an incident in Marshall, Mich., Enbridge began planning to activate a response website to provide the latest information about the response to concerned stakeholders. The Line 6B response website is designed to be one of the communications channels to address the information needs of nearby neighbors, other community members, media, investors, customers, and potential service providers.

The website launched the evening of July 27, the day after Enbridge was notified of the incident. The response website initially provided basic information about the incident and about Enbridge and its Lakehead System. The site quickly grew to include pages on various

aspects of the response, including cleanup, community resources, environment and wildlife and to include a “frequently asked question” section as well as information about our pipeline integrity programs. We continue to provide regular updates in the “Updates” section of the website and adapt content elsewhere on the site to meet our stakeholders’ changing information needs.

To date, we’ve had 48,379 visits to the Line 6B response website from 27,800 unique visitors. Approximately 550 questions and comments have been submitted to Enbridge through our website contact form.

2.8 Preparation of Integrity Verification and Remedial Workplan

In accordance with items 5 A-F of the CAO, Enbridge has already begun the steps necessary to comply with the requirement to prepare and submit a detailed Line 6B Integrity Verification and Remedial Work Plan (“IVP”) by September 26, 2010. The IVP will integrate the results of the metallurgical analysis as it is available from the NTSB. A historical failure assessment will be prepared along with additional integrity assessments technologically appropriate for Line 6B based on the operating and integrity history. As directed, Enbridge will also submit a detailed description of the in-line integrity assessment inspections previously conducted, repair criteria used for repairs prompted as part of the in-line inspections and schedule for those repairs completed to date and those planned at the time of the Marshall leak. These and other actions mandated in the CAO will comprise the Line 6B IVP. The IVP will also include provisions for long-term integrity assessment or other correction measures appropriate to prevention of leaks on Line 6B beyond the immediate measures included in the Restart Plan. These results will be evaluated together with relevant operational data and submitted to PHMSA for approval and subsequent incorporation into the CAO.

2.9 Control Center Line 6B Pre-Start

Enbridge's Control Center will be responsible for managing the pipeline control system restart of Line 6B. Control room procedures have been supplemented in connection with the restart of Line 6B as described in this Plan.

The following Sections of this Restart Plan outline the supplemental measures to be undertaken by Enbridge's Control Center in advance of and in connection with Line 6B's restart.

2.9.1 External Third Party Oversight and Verification Process

Throughout the Control Center's pre-start and restart activities, Control Center procedures will be monitored and observed by a third party verification consultant. The consultant will be Stantec Consulting Ltd. ("Stantec"), which was chosen from among four international engineering firms that Enbridge identified with expertise in pipeline design, control and operations.

As detailed further below, Stantec will review Enbridge's operations procedures in connection with pipeline restart activities, Enbridge's SCADA and MBS displays, as well as the detailed Restart Plan itself. Stantec will, at all times, have access to Control Center facilities and field locations to monitor and observe the restart. Furthermore, Stantec has been authorized to take every reasonable step to ensure safety including requiring the cessation of restart operations at any time should Stantec determine that an unsafe condition exists.

2.9.2 Control Center System Modifications and Personnel Training

The sections below describe the Control Center system modifications and personnel training activities completed in preparation for Line 6B restart, as per item 3.d of PHMSA's August 10 Letter.

2.9.2.1 SCADA Updates

Enbridge has modified the SCADA displays for Marshall Pump Station and Stockbridge Delivery Station to include pipeline flow rate from these locations, in addition to those rates already being measured along Line 6B.

Stantec will have the opportunity to confirm existence of these SCADA updates to PHMSA prior to the Line 6B restart commencing.

2.9.2.2 Control Center Staff Supplemental Line 6B Training

Enbridge has introduced supplemental training amongst Control Center staff. All Line 6B Control Center Controllers, Supervisors and Shift Leads have taken refresher training on the operation of Line 6B. In addition, all Terminal Controllers that are “connected” to Line 6B have been educated on the Line 6B Restart Plan detailed herein.

Stantec will have the opportunity to review the content of the refresher course as well as confirm completion of Operator training by reviewing training records prior to restart commencing.

2.9.2.3 Reduced Operating Limit Implementation

As per the CAO, Enbridge has implemented operating pressure restrictions on Line 6B to 80% of the last pressure identified at each of the pump stations on July 26, 2010, with the exception of Marshall Station where the pressure limit has been reduced to 340 psi as directed by PHMSA. These new operating pressure limits have been implemented at the SCADA and station Programmable Logic Controller (PLC) level.

Due to hydraulic conditions, the pump station at Stockbridge must be operated at 360 psi when Howell pump station is off-line during periodic pigging or emergency maintenance operations. The Enbridge September 7, 2010 Additional Information Submission to PHMSA in response to the PHMSA letter of September 3, 2010 provides a detailed description of how discharge pressures will be managed at Stockbridge under those periodic circumstances.

Stantec will have the opportunity to verify the existence of pressure restrictions prior to restart commencing.

2.9.2.4 SCADA/PLC Alarm & Shutdown Protection

Enbridge has performed additional testing to confirm that all SCADA and PLC level software is fully operational, and that alarms and shutdown conditions will be clearly identifiable on Operator consoles.

Stantec will have the opportunity to verify that SCADA and PLC software is properly functioning prior to restart commencing.

2.9.2.5 Control Center Procedures Regarding Column Separation

Enbridge has revised its Control Center procedures related to Column Separation on the Line 6B console.

In particular, a Column Separation Analysis document has been created in support of the existing Column Separation procedure already in place for Line 6B. The Column Separation Analysis document now requires the Controller to confirm a column separation, determine the cause and then document the response.

Both the revised Column Separation form and the Column Separation Analysis form will be made available to Stantec to review prior to restart commencing.

2.9.2.6 Material Balance System (MBS) Enhancements

Enbridge has enhanced its Line MBS model to provide additional information for review by the Line 6B MBS Analyst. In particular, the model now contains the following:

- Additional redundant pressure transmitter data points
- Additional valve status data points
- Updated schematic diagrams for Line 6B

Stantec will have the opportunity to confirm MBS model improvements prior to restart commencing.

3. ACTIONS DURING RESTART

The following section of this Restart Plan details the procedure which will be followed by Enbridge's Control Center and by personnel in the field during the restart of Line 6B as per item 3.b of the August 10 Letter. All of these activities will be monitored by Stantec.

3.1 Line 6B Startup Activities

3.1.1 Staffing Logistics

The Control Center will add one additional controller to monitor start-up and to provide assistance to the primary Line 6B controller. In addition, a Control Center Supervisor and a MBS Analyst will be available to monitor the process. The Control Center Supervisor will be an individual with previous experience on the Line 6B operator/controller console, as per item 3.j of the August 10 Letter. Control Center engineering and technical support staff will also be available to provide assistance as needed.

The Control Center will also have a designated Communication Coordinator stationed in the Control Center to be the central point of contact for the field Operations Liaison. As described below, the field Operations Liaison, stationed at Enbridge's Marshall, Michigan facilities, will be the key contact point from field operations and will provide field activity updates to the Communications Coordinator including advising of aerial patrol and field technician readiness.

Prior to the restart, a role call will be undertaken for all identified Line 6B personnel involved in the restart procedure, with each individual's responsibilities clearly communicated. Opportunity will be provided for questions and answers to ensure all involved clearly understand their accountabilities prior to the restart commencing. This process will be monitored by Stantec.

3.1.2 Pre-Start Checklist

As part of the Line 6B restart, the Line 6B Controller will review and complete a Line 6B Startup Checklist. This checklist will including the following verifications, to be completed prior to restart commencing. This checklist will be made available to and will be monitored for compliance by Stantec:

- Verification of initiating station and delivery station flow path returned to normal;
- Volume Balance Spreadsheet is ready for use;
- SCADA Trending Application ready for use;
- SCADA Warnings Spreadsheet ready for use;
- Shift Change Report available for comment entry;
- Confirmation that no Abnormal Operating Conditions¹ exist on the pipeline, as defined by Enbridge Control Center procedures;
- Confirmation that no conditions requiring Pipeline Shutdown exist;
- Confirmation that there are no communications outages at pump stations or mainline valves along the pipeline, as per item 3.e of the August 10 Letter;
- Confirmation that no normally remote control valves are under local control;
- Confirmation that all pressure control set-points are appropriately set for restart at the pressures identified in this Restart Plan;
- All discretionary maintenance on Line 6B has been suspended for the duration of the restart process;
- In-line inspection trackers for the tool left in-line after the July incident at MP 608 have been notified of the intent to restart line and movement of the tool;
- Confirm pressure allowables have been implemented on the SCADA system;
- Confirm with MBS Analyst that MBS thresholds for the Line 6B restart have been implemented.

Completion of this Line 6B Checklist will be a pre-condition to restart commencing.

¹ Note 1: Abnormal Operating Conditions has been defined in Enbridge's August 13, 2010 response to PHMSA letter dated August 10, 2010.

3.1.3 Line 6B Restart – Pre-Approvals and Staged Ramp-Up

In order for the Control Center to initiate the Line 6B restart procedure, the following external and Enbridge approvals and confirmations will be required:

- Written approval to resume operation from PHMSA's Regional Director as per item 2 of page 3 of the CAO;
- As per item 2 of page 3 of the CAO, emergency responders in Calhoun County will be informed of the restart through notification by Unified Command as well as emergency response dispatch in locations on the right-of-way throughout the Marshall to Stockbridge, Michigan segment. In addition to the CAO requirement, and as an added precaution, Enbridge will contact emergency response dispatchers in the remaining Line 6B pipe segments;
- Operations Liaison to confirm that Enbridge field technicians on-site and in place at identified pump stations along Line 6B;
- Operations Liaison to confirm removal of Lock Out/Tag Out (LOTO)'s, and all manual main line valves are open and available to receive product;
- Operations Liaison to confirm that Enbridge aerial patrol has been notified, and is starting patrol protocol;
- Operations Liaison to advise the Control Center that Line 6B is ready for service;
- Completion of the Line 6B Restart Checklist.

When the necessary confirmations set out in above have been received by the Control Center, it will initiate the Line 6B restart procedure. To meet the stated conditions for restart established by PHMSA in item 2 and 3 on pages 3 and 4 of the CAO, Line 6B will be restarted in 3 Stages:

- 1st Stage target: establish Marshall discharge pressure of 170 psi and maintain that pressure for a minimum duration of 1 hour;
- 2nd Stage target: establish Marshall discharge pressure of 250 psi and maintain that pressure for a minimum duration of 1 hour; and
- 3rd Stage target: establish Marshall discharge pressure of 340 psi and maintain that pressure for a minimum of 1 hour.

Throughout this process verbal communication between the Operations Liaison and Control Center Communication Coordinator, as well as e-mail notification, will be provided prior to starting, achieving, completing and proceeding to the next Stage. The designated Stantec liaison will be included in Line 6B re-start e-mail communications, as will members of Enbridge's restart team and Enbridge's senior management.

As the Control Center achieves and completes each Stage, visual and SCADA verification will also be utilized to confirm pressure maintenance targets are met. Stantec will have opportunity to monitor these readings and confirm their accuracy in real-time.

3.1.4 Line 6B Restart Procedure

As required by item number 2 on page 3 of the CAO, Enbridge will initiate restart procedures during morning daylight hours.

In order to meet the staged Targets noted above, Line 6B will be restarted by the Control Center according to the following procedure:

The Control Center will communicate verbally and by e-mail to the parties identified above that Line 6B is being restarted and that the process is underway to meet the Stage target 1.

Following that communication, the following steps will be taken:

- 3.1.4.1 6B Controller will open flow path at Griffith originating terminal;
- 3.1.4.2 6B Controller will open up remotely operated Line 6B mainline valves;
- 3.1.4.3 Once all remotely operated mainline valves are confirmed open by monitoring SCADA valve status color change and pipeline pressure changes, Controller will open flow path at Stockbridge Terminal;
- 3.1.4.4 Controller will then start booster pumps at Griffith Terminal;
- 3.1.4.5 Controller will start pumps at Griffith, Laporte and Mendon pump stations sequentially to increase flow and pressure in the pipeline;
- 3.1.4.6 Controller will manage pressure setpoints on the pipeline to achieve the Stage target 1 discharge pressure at Marshall Station of 170 psi;
- 3.1.4.7 Upon reaching target pressure of 170 psi at Marshall Station, the Controller will continue pipeline operations at the stage 1 discharge pressure and monitor the pipeline pressures and flows for a minimum duration of 1 hour.

The Control Center will then communicate verbally and by e-mail to the parties identified above that Line 6B has reached the 1st Stage of the restart.

3.1.4.8 After 1 hour of operating at 1st Stage conditions, the Control Center will verify the time and pressure target committed through visual confirmation and SCADA records. Stantec will have the opportunity to monitor these records and confirm their accuracy in real-time;

3.1.4.9 Controller will maintain the Line 6B under 1st Stage conditions while integrity pigs presently in the pipeline are bypassed at Niles Station;

3.1.4.10 After the integrity pigs have by-passed Niles Station, the Control Center will proceed to the 2nd Stage target discharge pressure of 250 psi at Marshall Station.

Upon completing Step 3.1.4.10, the Control Center will communicate verbally and by e-mail to the parties identified above that Line 6B has completed the 1st Stage target pressure commitment and that the 6B Operator is proceeding to the 2nd Stage target pressure commitment.

3.1.4.11 Controller will start pumps at Niles and Marshall pump stations to increase flow and pressure on the pipeline;

3.1.4.12 Controller will manage pressure setpoints on the pipeline to achieve the target discharge pressure at Marshall Station of 250 psi;

3.1.4.13 Upon reaching target pressure of 250 psi at Marshall Station, the Controller will continue pipeline operations at the stage 2 discharge pressure and monitor the pipeline pressures and flows for a minimum duration of 1 hour.

The Control Center will communicate verbally and by e-mail to the parties identified above that Line 6B has reached the 2nd Stage of the restart.

3.1.4.14 After 1 hour of operating at 2nd Stage conditions, the Control Center will verify the time and pressure target committed through visual confirmation and SCADA records. Stantec will have the opportunity to monitor these records and confirm their accuracy in real-time.

Upon completing Step 3.1.4.14, the Control Center will communicate verbally and by e-mail to the parties identified above that Line 6B has completed the 2nd Stage target pressure commitment and that the 6B Operator is proceeding to the 3rd Stage target pressure commitment.

3.1.4.15 The Line 6B Controller will manage pressure setpoints on the pipeline to achieve target discharge pressures at Marshall Station of 340 psi;

Upon reaching target pressure of 340 psi at Marshall Station, the Controller will continue pipeline operations at the Stage 3 discharge pressure and monitor the pipeline pressures and flows for a minimum duration of 1 hour. The Control Center will communicate verbally and by e-mail to the parties identified above, that Line 6B has reached the 3rd Stage of the restart.

3.1.4.16 After 1 hour of operating at 3rd Stage conditions, the Control Center will verify the time and pressure target committed through visual confirmation and SCADA records. Stantec will have the opportunity to monitor these records and confirm their accuracy in real-time;

At this point the Control Center will communicate verbally and by e-mail to the parties identified above that Line 6B has completed the 3rd Stage target pressure commitment and that the maximum allowable pressure for Line 6B has been successfully met.

3.2 Field Operations Activities

In addition to the restart activities conducted from the Control Center, Enbridge will also have a number of field resources stationed along Line 6B participating in the process. These resources will provide additional oversight and monitoring during the restart, and will be deployed so as to provide immediate feedback on conditions experienced as the Line 6B restart process unfolds.

3.2.1 Operations Liaison

The Operations Liaison will act as a central point of contact for the field operations personnel deployed during the Line 6B restart. The Operations Liaison will be a counterpart contact in the field for the Communications Coordinator in the Control Center, and will act as the conduit for communications.

3.2.2 Pump Station Monitoring

Qualified Enbridge field technicians will be stationed at all operational pump stations along Line 6B.

These field technicians will monitor pump and control valve performance during Line 6B restart. In the event of any abnormal condition witnessed, the field technicians will immediately contact the Line 6B Controller and request pipeline shutdown to investigate the condition. Start-up will resume only after safe conditions are confirmed by Enbridge and affirmed by Stantec.

3.2.3 Pig Tracking

The lead batch pig and internal inspection tool that are currently stranded in the pipeline will be tracked upon restart with the location relayed to the Control Center as described in Enbridge's August 13, 2010 letter in response to item 3.i of the August 10 Letter. Recovery of the pigs and removal of remaining water from the line shall be considered part of the restart process. Specific staffing levels and other supplemental measures described in this Restart Plan may terminate at the time that the third stage target pressure commitment is reached if safe conditions are confirmed by Enbridge and affirmed by Stantec. Stantec monitoring shall continue until the pigs and remaining water are recovered.

3.2.4 Aerial Patrol

Enbridge will engage several forms of aerial patrol both during and after the initial restart of Line 6B. The patrols detailed below will be in addition to Enbridge's existing pipeline system aerial patrol practices, which will continue unabated.

During the restart, a fixed-wing patrol will be employed for that segment of Line 6B between Griffith and the Canadian Border (St. Clair River).

Helicopter patrol of the line segment between Marshall Station and Stockbridge Station will occur during each incremental pressure increase through the three target Stage pressure increases identified previously.

For a period of at least seven days following a successful restart of Line 6B, and subject to favorable weather, a supplemental full patrol will be conducted daily from Griffith to the Canadian Border, either by fixed wing with helicopter available for dispatch or by helicopter only. Should inclement weather postpone a schedule patrol, the patrol will be conducted at the earliest practicable time possible following the weather event. A minimum of seven supplemental patrols will be conducted.

3.2.5 St. Clair Monitoring (Canada)

Three ground vehicles will patrol along the section from St. Clair River to the Sarnia Terminal commencing at the time that deliveries to Enbridge Stockbridge terminal are completed.

4. CONCLUSION

Enbridge certifies that, to the best of its knowledge and belief, the measures detailed in this Restart Plan demonstrate that Line 6B is fit to return to service in accordance with regulatory requirements and prudent operational practices.

A handwritten signature in black ink, appearing to read 'Shawn Layman', written over a horizontal line.

[EELP Signator]