ENBRIDGE ENERGY, LIMITED PARTNERSHIP

MINNESOTA PUBLIC UTILITIES COMMISSION

MPUC DOCKET NO. PL9/CN-14-916 and PPL-15-137
OAH Docket No. 65-2500-32764 and 65-2500-33377

TESTIMONY OF PAUL EBERTH
January 31, 2017
I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.
A. My name is Paul Eberth. I am employed by Enbridge Employee Services, Inc., and my business address is 26 East Superior Street, Suite 309, Duluth, Minnesota 55802. Enbridge Employee Services, Inc. provides personnel to United States affiliates of Enbridge Inc., including Enbridge Energy, Limited Partnership (the “Applicant”). Enbridge Energy, Limited Partnership will construct and operate the Line 3 Replacement Project (the “Project”). In my testimony, I will refer to Enbridge Inc. and its affiliates collectively as “Enbridge”.

Q. What is your position with Enbridge?
A. I am the Project Director for the Line 3 Replacement in the U.S. I am responsible for the oversight and execution of the Project.

Q. Briefly describe your educational and professional background and your current duties.
A. I have a Bachelor’s of Science in Industrial Engineering from the University of Minnesota in Duluth, Minnesota, and I am a licensed professional engineer in the State of Minnesota. I have approximately 14 years of experience in the energy industry, including ten years working for Enbridge on various pipeline and wind farm projects. I have worked on Enbridge pipeline projects in Minnesota including Line 67, Southern Lights and the Light Sour pipeline. In addition to my role as Project Director for the Project, I also served as a pipeline operator representative on the committee that was responsible for writing the new standard for pipeline safety (“API RP 1173”). The API RP 1173 committee included representation from state and federal regulators, the National Transportation Safety Board, the public, and industry. A copy of my statement of qualifications is attached as Schedule 1.

Q. What is the purpose of your testimony?
A. The purpose of my testimony is to:
   • describe the Project;
   • summarize the need for the Project;
   • introduce other Enbridge witnesses and provide an overview of issues they address in direct testimony;
• provide information on Enbridge;
• discuss alternatives considered but rejected for the Project;
• describe Enbridge’s routing process;
• discuss Enbridge’s consideration of route alternatives;
• sponsor Enbridge’s Safety Report; and
• provide draft language that Enbridge requests be included in a pipeline route permit for the Project.

Q. Please identify which sections of the Certificate of Need Application (“CN Application”) you are sponsoring for the record.

A. I am sponsoring the following sections of Enbridge’s CN Application:
• Section 1.0 Introduction;
• Section 2.0 Subpart 1: General Information;
• Section 3.1 Replacing Line 3 is the Optimal Maintenance Alternative to Ensure Safe Operation;
• Section 3.3 Federal Requirements for Integrity Management Programs;
• Section 4.0 C: Project’s Effects on Future Development;
• Section 5.0 Enbridge’s Conservation Programs;
• Section 10.0 Project Alternatives;
• Section 11.2 Public and Stakeholder Outreach Efforts;
• Appendix A Project Overview Map;
• Appendix B Pipeline Safety Report; and
• Appendix O Public Outreach Materials.

Q. Please identify which sections of the Route Permit Application (“Route Permit Application”) you are sponsoring for the record.

A. I am sponsoring the following sections of Enbridge’s Route Permit Application:
• Section 1.0 Introduction;
• Section 2.0 Background Information;
• Section 3.0 Purpose and Need;
• Section 4.7 Pipeline Estimated Costs and Accessibility;
• Section 4.8 Project Schedule;
• Section 4.9 Project Expansion;
Q. Do you have any updates to these sections of the Applications?

A. Numerous Enbridge witnesses provide additional information or clarifications to the Applications in their testimonies based on information that has become available since Enbridge filed the Applications in April 2015. As it relates to the Route Permit Application and Appendices, Enbridge has attempted to consolidate these updates using the same format as provided in the Environmental Assessment Worksheet (“EAW”) published on April 12, 2016. The Preferred Route reflected in this updated January 2017 EAW is the same route that the Commission accepted for study as “Line 3 Applicant’s Proposed Route” or “APR” in the December 2016 Final Scoping Decision Document. The information is simply consolidated in the EAW format for ease of reference. Updates include, for example, the results of Enbridge’s 2016 field surveys. I am sponsoring Sections 1 through 6 of the updated January 2017 EAW, which is attached as Schedule 2 to my testimony. Mr. Barry Simonson and Ms. Britta Bergland sponsor various other sections of that updated EAW.

In addition, I am providing an updated version of Enbridge’s Safety Report (Appendices B and D of the CN and Route Permit Applications, respectively) as Schedule 3 to my testimony.

Q. What schedules are attached to your direct testimony?

A. Schedule 1 – Statement of Qualifications

Schedule 2 – Updated EAW, January 2017

Schedule 3 – Updated Enbridge Pipeline Safety Report
II. LINE 3 REPLACEMENT PROGRAM AND PROJECT DESCRIPTION

Q. Please describe the Line 3 Replacement Program.

A. The Line 3 Replacement Program is a pipeline integrity and maintenance driven program designed to address identified mechanical integrity deficiencies on the existing Line 3 pipeline and return the pipeline to the operating capabilities for which it was designed. The Line 3 Replacement Program will replace the existing Line 3 pipeline from Alberta, Canada, to Superior, Wisconsin. The proposed replacement pipeline will serve the same purpose and need as the existing Line 3, which is the transportation of crude oil from the U.S. and Canada to Enbridge’s Clearbrook Terminal near Clearbrook, Minnesota, and to the Superior Terminal Facility near Superior, Wisconsin. The replacement pipeline serves the same markets and transports the same products as the existing Line 3 has done throughout its operating history.

Q. Please provide a brief description of the Project.

A. The Project is a major component of the Line 3 Replacement Program. The Project is the Minnesota portion of the Line 3 Replacement Program and includes the replacement of approximately 282 miles of the existing 34-inch diameter Line 3 pipeline with approximately 340 miles of 36-inch diameter pipeline and associated facilities between the North Dakota/Minnesota border and the Minnesota/Wisconsin border. The Project will cross Kittson, Marshall, Pennington, Polk, Red Lake, Clearwater, Hubbard, Wadena, Cass, Crow Wing, Aitkin, and Carlton counties.

Q. What is the capacity of the Project in Minnesota?

A. The Project will have approximately an annual average capacity of 760,000 barrels per day (“bpd”).

Q. Please summarize Line 3’s role within Enbridge’s Mainline System.
A. The existing Line 3 is a 34-inch outside diameter, 1,097 mile pipeline that extends from Alberta, Canada, to Superior, Wisconsin. Line 3 has been in-service since the 1960s and has transported a variety of types of crude oil since that time. Due to its geographic location, Line 3 continues to play an important and integral role in delivering crude oil to Minnesota refineries through Enbridge’s Clearbrook Terminal, as well as continued deliveries to various Midwest and Gulf Coast refineries through the Enbridge Superior Terminal. The Project will serve the same markets and transport the same products as the existing Line 3 has done throughout its operating history.

Q. What is the estimated cost of the Project?
A. The total estimated cost of the Line 3 Replacement Program is approximately $7.5 billion, of which $2.1 billion represents the cost of the Project in Minnesota.

Q. When does Enbridge plan to begin construction?
A. Enbridge plans to start construction of the Project as soon as it has received all necessary permits and regulatory approvals. Enbridge forecasts to begin construction in 2018 and complete construction, testing and commissioning of the new pipeline and associated facilities and place the Project in-service in 2019.

Q. Why is Enbridge proposing to replace the existing Line 3?
A. Enbridge is committed to replacing Line 3 because it is the best choice to ensure the continued safe and reliable operation of Enbridge’s Mainline System.

As Ms. Kennett explains in greater detail, Enbridge continuously monitors and evaluates its pipelines to ensure they are operating safely. Through these ongoing evaluations, Enbridge identified a combination of integrity conditions on Line 3 that, absent replacement, will make safely maintaining the existing Line 3 an extraordinary challenge in the coming years. Specifically, the pipe materials, coating, installation method, operating history, and surrounding environment – together – resulted in the largest external corrosion anomaly density on the Enbridge Mainline System to occur on Line 3. And, while Enbridge’s proactive steps to voluntarily reduce the operating pressure on the pipeline have slowed the growth of known stress corrosion cracking and long-seam cracking, and helped avoid releases on Line 3 since 2008, the extensive corrosion, coupled with known stress corrosion cracking and long seam cracking, would require approximately 7,000 integrity dig and
repairs to be executed along existing Line 3 over the next 15 years. The cost of such an
extensive dig and repair program is nearly equal to that of replacement and results in year-
over-year impacts to landowners and the environment. Yet, even if the dig and repair
program were to continue, it cannot comprehensively address the pervasive integrity issues
present on Line 3, nor can it restore the pipeline capacity needed to reliably serve refiners.

As Mr. Simonson, Ms. Kennett, Mr. Glanzer, and Mr. Baumgartner describe in more detail,
replacing Line 3 also provides numerous benefits to the Enbridge Mainline System,
customers and the public. The Project will be constructed using modern pipeline design,
manufacturing, coating, and installation techniques and the knowledge of the human,
environmental and routing factors that Enbridge has acquired over its more than 65 years of
operating history in this area. As examples, the Project will be constructed with thicker
walled pipe with higher yield strength and will be installed with upgraded instrumentation to
feed even more information into Enbridge’s leak detection system. Its design also reduces
per barrel energy usage across the Enbridge Mainline System, and its mixed service design
will restore capacity and flexibility needed to meet ever changing crude oil demand.

Accordingly, Enbridge has proposed the Project to ensure the continued safe operation of
the Enbridge Mainline System, to restore the capacity needed to meet current and
forecasted demands from shippers, and to ensure continued reliable crude oil transportation
to refiners, in Minnesota, other Midwestern states, Eastern Canada, and the Gulf Coast.

Q. Please describe the process Enbridge undertook to evaluate replacing Line 3.
A. Enbridge engaged in a multi-year evaluation to determine the most appropriate long-term
strategy for addressing Line 3’s integrity issues. Ms. Kennett describes the numerous in-line
inspections that were conducted to gather data regarding the condition of Line 3, as well as
Enbridge’s evaluation of its operation history, and the cost analysis of ongoing dig and repair
versus replacement. These evaluations increasingly pointed to the challenges Enbridge
would face operating Line 3, even with close monitoring and a vigorous dig and repair
program.

As Mr. Fleeton discusses, Enbridge then approached shippers using the Enbridge Mainline
System and began negotiating a rate increase that would allow Enbridge to make the $7.5
billion investment necessary to replace Line 3 from Alberta, Canada, to Superior, Wisconsin,
knowing it had support from the affected shippers. This agreement was reached on February 26, 2014. Enbridge then began more extensive stakeholder outreach and applied for the regulatory approvals it needed in the U.S. and Canada to replace Line 3.

Q. Is Enbridge under any legal or regulatory obligation to replace Line 3?

A. Yes. After Enbridge submitted its Applications to the Commission, and as the result of a settlement of litigation that followed the unintentional releases of crude oil from Enbridge’s Line 6B near Marshall, Michigan in July 2010 and from Enbridge’s Line 6A near Romeoville, Illinois in September 2010, Enbridge agreed to a proposed Consent Decree that requires Enbridge to replace Line 3 and take existing Line 3 out of service as expeditiously as practicable after receipt of approvals for the Line 3 Replacement Project. The Consent Decree imposes a deadline for Line 3 to be taken out of service by December 31, 2017, or substantial additional requirements will be imposed on its continued operation. Schedule 4 to my testimony contains a copy of the proposed final Consent Decree, which was revised following public comment and further negotiation between Enbridge and the United States Department of Justice, as filed in the United States District Court for the Western District of Michigan Southern Division on January 19, 2017.

Q. Are there other provisions of the proposed Consent Decree that relate to operation of Line 3?

A. Yes, in the event Line 3 is not replaced by December 31, 2017, Enbridge must complete and validate in-line inspections annually for crack, corrosion and geometry threats (Enbridge currently inspects every 12 to 18 months). Ms. Kennett further discusses the increased operating costs associated with complying with these provisions. Additionally, Mr. Art Haskins discusses the additional emergency response drills required to be completed under the proposed Consent Decree.

Q. What is the status of the required approvals for the Line 3 Replacement Program in Canada, North Dakota and Wisconsin?

A. In Canada, the Federal Government announced that it was approving the project in November 2016, and the National Energy Board issued a Certificate approving the construction and operation of the Line 3 Replacement Program on December 1, 2016. Enbridge anticipates starting the detailed route approval process in Q1 2017, with approval
likely to follow in Q2 2017. Once the standard pre-construction conditions have been met, Enbridge anticipates starting construction in August 2017.

A permit is not required from the North Dakota Public Service Commission. A notice of the replacement will be submitted to the North Dakota Public Service Commission prior to the start of construction.

In Wisconsin, no permit is required from the Public Service Commission of Wisconsin because Enbridge is not seeking the right of eminent domain. An EIS and the wetland/waterbody permit for the Wisconsin portion of L3R were issued on August 30, 2016. There was no appeal of the issued permit. Enbridge anticipates the Army Corps of Engineers will issue its approval in Q1 2017.

III. NEED SUMMARY

Q. Please summarize the need for the Project.

A. The Project is needed to address the following:

- First, safety is at the core of Enbridge’s operation. The Project was identified through Enbridge’s ongoing assessment of its operating assets, which is a key component of Enbridge’s safety plan. The Project will improve public safety and protection of the environment by replacing the existing Line 3, a pipeline with a large number of identified pipe defects and anomalies, with a new pipeline constructed with the latest construction practices, technology and materials. The repair of pipe anomalies is addressed through Enbridge’s Integrity Management Program. The Project will avoid the large and increasing number of repairs currently forecasted to be required on Line 3 over the next 15 years, thereby reducing the re-occurring impacts to landowners and the environment. Line 3’s current condition is described further by Ms. Laura Kennett. As I discuss further below, Enbridge’s commitment to replace Line 3 is reflected in a proposed Consent Decree filed by the United States Department of Justice in a proceeding arising from a 2010 oil spill on the Enbridge Mainline System in Michigan.
Second, as described by John Glanzer, the Project will enable Enbridge to better meet the demand for crude oil in PADD II, including Minnesota, as well as Eastern Canada and the U.S. Gulf Coast by allowing Enbridge to more reliably and efficiently transport an economical and secure supply of crude oil. As Mr. Glanzer explains, the Project will reduce on-going and forecasted apportionment to the refining industry in PADD II, including Flint Hills and Northern Tier Energy in Minnesota, Eastern Canada, and the Gulf Coast, by restoring the capacity of the pipeline to its original operating capacity of 760,000 bpd.

Third, as Mr. Glanzer further explains, the restored operational flexibility will allow Enbridge to more efficiently operate the Enbridge Mainline System, optimize its pipeline system, and reduce power utilization on a per barrel basis.

These benefits will help to ensure the future adequacy, reliability, and efficiency of energy supply to Enbridge’s customers, and, as a result, to the people of Minnesota and neighboring states. If the Project is not approved, Enbridge will continue to operate Line 3 in a safe and reliable manner; however, the worsening condition of the pipeline is causing an increasing amount of maintenance and repair that would not only inconvenience landowners and impact the environment, but would also be economically inefficient. Further, ongoing maintenance will not restore the operating capabilities of Line 3, leaving Enbridge’s customers without adequate, reliable, and efficient transportation capacity to reduce apportionment.

As described further by Mr. Jack Fleeton, commercial support and evidence of need for the Project was confirmed by Enbridge’s Representative Shipper Group’s agreement to increase rates to recover the costs of replacing Line 3.

Q. Please summarize the Project’s benefits to consumers in Minnesota and neighboring states.

A. The Project will help to ensure the continued stable, reliable, and efficient delivery of North American crude oil to refineries in Minnesota, other Midwestern states, Eastern Canada, and the Gulf Coast. These refineries convert the crude oil into a variety of products for use in Minnesota and the surrounding regions, including gasoline, diesel, jet fuel, asphalt, and many other useful petroleum products. Refineries in Minnesota and neighboring states do not produce all of the petroleum products consumed within their borders; demand for refined
products in Minnesota’s immediate region significantly exceeds refinery production within the region. As discussed by Mr. Neil Earnest, refineries located in other Midwestern states act as key suppliers to the region, and the security, adequacy, and reliability of crude oil supplies to these refineries has a direct bearing on meeting the overall energy needs of Minnesota and neighboring states. Today, nearly all crude oil refined in Minnesota and its neighboring states is from either the U.S. or Canada. By providing access to abundant North American crude oil supply, the Project provides significant benefits to the Midwest, including Minnesota, by ensuring that the region continues to realize the benefits of access to affordable energy and a wide range of useful refined products.

As discussed further in Dr. Richard Lichty’s testimony, the Project will also provide significant economic benefits to Minnesota. Not only will the Project provide construction and operations jobs and associated income, it will also have positive direct and indirect economic impacts on other local industries.

Finally, as I described above, a critical benefit of replacing Line 3 is that it will significantly reduce apportionment, which will ensure the necessary capacity is available to the refineries in the Midwest, including the two Minnesota refineries.

Q. What other Enbridge witnesses are providing direct testimony in support of Enbridge’s CN Application?

A. The following witnesses are providing testimony in support of Enbridge’s CN Application:

Ms. Laura Kennett, Supervisor of Asset Integrity Projects, testifies regarding Enbridge’s integrity management program, the unique characteristics of Line 3 that led to a replacement analysis and the key drivers and analyses prompting replacement.

Mr. John Glanzer, Director of Infrastructure Planning & Lifecycle Effectiveness, describes how the Project will operate as an integral part of the Enbridge Mainline System, the need for additional capacity on the Enbridge Mainline System, and the benefits of operating the Project in mixed service.

Mr. Neil Earnest, President of Muse, Stancil & Co., testifies on the forecasted supply of crude oil produced in Western Canada; the need for the Project to ensure the future
adequacy, reliability, and efficiency of energy supply to Enbridge’s customers and the people of Minnesota and neighboring states; the benefits of the Project to Minnesota and surrounding states.

Mr. Jack Fleeton, Director of Business Development Mainline and Downstream, testifies regarding the commercial negotiations and support for the Project and the applicable tariff provisions and commercial agreements.

Mr. Barry Simonson, Manager of Engineering and Construction, describes the design and construction information for the Project as presented in the Applications; discusses Enbridge’s engineering analysis for the accepted alternatives; and describes Enbridge’s plans to permanently deactivate the existing Line 3 pipeline once the Project is permitted, constructed and placed into service.

Mr. Art Haskins, Supervisor of Emergency Response, sponsors sections of the Applications addressing emergency response, explains the federal oversight of pipeline emergency response plans, and discusses Enbridge’s development of an emergency response plan and how it is implemented.

Mr. Allan Baumgartner, Director of Control Center Operations, testifies regarding Enbridge’s Control Center’s operational processes; explains what the Control Center’s role will be in monitoring “real time” pipeline operations for the Project after it is actively in service; describes the Control Center’s roles and responsibilities in emergency response situations; and discusses improvements to pipeline monitoring technology that will be employed for the Project.

Ms. Stacey Gerard, Consultant, discusses federal oversight of pipeline safety, federal pipeline integrity management requirements and the role of replacement in pipeline integrity management. Ms. Gerard also discusses how Enbridge’s decision to replace Line 3 is appropriate given the pipeline’s condition and time-dependent integrity challenges, and aligns with what PHMSA has been encouraging and the federal government expects with respect to Enbridge’s integrity management of its pipeline system.
Mr. William Rennicke, Partner with Oliver Wyman, Inc. describes the impact that denial of the Project would have on rail services in the State of Minnesota and the impact of using rail to transport crude oil through Minnesota; and assesses the implications of new Federal rail regulations on crude oil transportation.

Dr. Richard Lichty, Professor Emeritus of the University of Minnesota, Duluth, testifies as to the economic benefits to Minnesota resulting from construction and operation of the Project.

Ms. Britta Bergland, Senior Analyst at Merjent, Inc., describes the environmental analyses, studies, and surveys that have been conducted for the Project; outlines the potential environmental impacts of alternatives to the Project; describes the environmental impacts of deactivation of the existing Line 3 Pipeline; explains the mitigation measures developed for the Project; and provides updates regarding other federal, state, and local permits and approvals Enbridge is seeking for the Project.

Mr. John McKay, Manager, Land Services for U.S. Major Projects and Liquids Pipelines, describes the land rights that Enbridge needs to construct the Project, how Enbridge works with landowners to acquire those rights, and provides information regarding the programs and efforts that Enbridge makes to have positive, long-term relationships with landowners along the Project route.

Dr. Christopher Bergman, Cultural Resources Management Practice Lead for the Oil, Gas & Pipeline Business Line at AECOM, provides an overview and peer-review of the process, methods, and results of Enbridge’s cultural resources investigations related to the Project.

Mr. Ray Woulo, P.E., P.G., Vice President and Principal Hydrogeologist at Barr Engineering Co., describes the studies conducted by Barr Engineering on behalf of Enbridge to assess the potential for the operations of the Project to affect lakes and groundwater in Minnesota.

Mr. Jeff Lee, Vice President and Senior Ecologist for Barr Engineering Co., describes the study conducted by Barr Engineering on behalf of Enbridge to assess the potential for the operations of the Project to affect wild rice waters in Minnesota.
Q. Which Enbridge witnesses are providing direct testimony in support of Enbridge’s Route Permit Application?

A. Mr. Simonson, Ms. Bergland, Mr. Haskins, Mr. McKay, Dr. Bergman, Mr. Wuolo, Mr. Lee and I provide testimony regarding the CN and Route Permit Applications.

IV. COMPANY INFORMATION

Q. Who is the Applicant in this proceeding?

A. The Applicant is Enbridge Energy, Limited Partnership, a Delaware limited partnership and a wholly-owned subsidiary of Enbridge Energy Partners, L.P (“EEP”). Both entities, along with other affiliates, are direct or indirect subsidiaries of Enbridge Inc. (collectively, “Enbridge”). Enbridge owns and operates liquids and natural gas pipelines, wind farms, solar plants, and a large local gas distribution company. In particular, Enbridge owns and operates a system of liquids pipelines collectively referred to as the Enbridge Mainline System. The Enbridge Mainline System transports crude oil from Western Canadian and the Bakken Formation to refineries in the United States and Eastern Canada. The Enbridge Mainline System is made up of the Canadian mainline system, which transports crude oil from Western Canada and the Bakken formation to the international border near Neche, North Dakota, and the Lakehead System. The Applicant is the primary owner and operator of the Lakehead System, which is the United States portion of the Enbridge Mainline System and consists of pipelines in North Dakota, Minnesota, Wisconsin, Illinois, Indiana, Michigan, and New York. Enbridge also owns and operates several market extension pipelines that serve various refinery markets in the Midwest and Gulf Coast.

Q. Have there been any significant changes to Enbridge’s corporate structure since the Applications were filed?

A. No. On September 6, 2016, Enbridge Inc. and Spectra Energy Corp (“Spectra Energy”) announced they had entered into a definitive merger agreement under which Enbridge Inc. and Spectra Energy will combine in a stock-for-stock merger transaction. While the transaction will diversify the energy infrastructure holdings of Enbridge Inc., post-closing it is not anticipated that the transaction will affect the company structure of Enbridge Energy Partnership, L.P. or the operation of the Project.

Q. Please describe Enbridge’s experience in crude oil transportation.
A. Enbridge is an industry leader in the transportation and distribution of energy in North America. Enbridge has been operating crude oil pipelines in North America, including in Minnesota, for over 65 years. Enbridge’s pipelines can move – directly or via interconnections – approximately 2.4 million barrels of crude oil every day to North American markets. Together, the Enbridge Mainline System and Enbridge’s market extension pipelines comprise approximately 15,795 miles of liquid petroleum pipelines and constitute the world’s longest crude petroleum and petroleum liquids pipeline network.

Q. Please discuss Enbridge’s commitment to safe operations.

A. Safety is at the core of Enbridge’s operation. Enbridge is committed to safely operating and maintaining its assets and ensuring that everyone returns home safely at the end of each and every day. This commitment to safety is based on caring for employees, our contractors, the communities in which we operate and the environment. Enbridge proactively works to identify and prevent potential safety issues; responds immediately when a safety issue is identified; and continually seeks ways to improve safety performance.

Enbridge’s goal is zero safety incidents. The decisions it makes and the actions it takes in pursuit of that goal are guided by several foundational principles. Specifically, Enbridge believes that: management is accountable for safety performance; all incidents, injuries and occupational illnesses can be prevented; all employees and contractors are responsible for safety; uncontrolled releases can be prevented, and ongoing assessment and improvement are a must. These principles create a culture in which safety is everyone’s responsibility, leadership is accountable for safety performance, continuous improvement is required, and hazards are controlled. By maintaining a constant focus on safety management, fostering a culture that values safety, learning from prior incidents, and addressing sources of potential future incidents, Enbridge enhances its ability to prevent incidents and unintentional releases that can have an impact on people, the environment, Enbridge’s assets, and its reputation.

Enbridge has developed a Safety Management System Framework to provide all parts of its business with common guidance and structure. This Framework ensures that Enbridge’s efforts to deliver industry-leading safety and reliability performance are thoroughly and expertly planned, executed, monitored, and continually improved upon using a shared approach. Safety and operational reliability is a process of continuous improvement for
Enbridge. For example, we meticulously investigate past incidents in order to learn and generate corrective and preventative actions with a goal of eliminating reoccurrence.

In 2012 and 2013, Enbridge invested a total of $4.4 billion in programs and initiatives to maintain and further enhance our pipelines and facilities. As an example, Enbridge replaced Line 6B in Michigan. In addition, since 2008, Enbridge has inspected 100 percent of the pipelines on our Liquids Pipelines system that can be inspected using inline inspection tools. That’s a total of 14,205 miles of pipelines.

Enbridge’s Major Projects unit, the group responsible for construction of the Project, is driving safety improvements by having established a United States and Canadian Pipeline Construction Roundtable that includes construction contractors and pipeline owners who gather to address challenges and discuss opportunities to improve safety performance.

Further, in partnership with other industry leaders, Enbridge is continuously researching and deploying new and improved pipeline safety and inspection technologies including methods of leak detection.

Q. How does Enbridge make sure new projects are safe and reliable?

A. Enbridge’s focus on safety and operational reliability begins well in advance of construction and operations. We carefully select pipeline routes and maintain rigorous standards for engineering and design, including special design requirements for areas such as road, railroad, and water crossings. We take the same rigorous approach with our other facilities, such as pump stations and terminals.

We then set special design and engineering standards for materials procurement, including selection of pipeline materials, corrosion–inhibiting coatings, and cathodic protection.

Finally, a rigorous inspection program is deployed during material manufacturing, pipeline construction, and project start-up.

Q. How does Enbridge keep pipelines safe once they are in service?
A. Enbridge utilizes its Integrity Management Program to ensure pipelines can be safely operated for their intended purpose. Enbridge identifies integrity threats, monitors threats, mitigates threats and then verifies the effectiveness of its programs.

We also heavily invest in the most advanced leak detection, damage prevention, and pipeline integrity management technologies.

Enbridge works to operate each pipeline in a way that protects its quality. For example, we strive to manage and minimize pressure cycling on our pipelines, which is the fluctuations that occur when pumps start and stop, injection and delivery points change, and transitions occur between oil with different densities and viscosities. Minimizing pressure cycling reduces stresses that can lead to wear on our pipelines.

Additionally, we inspect our system from the inside out, using the most sophisticated inline inspection tools available to us. We strive to prevent any dents, scrapes and other damage to our pipes and facilities during construction and operation or by third parties. Given that third party damage is a leading cause of pipeline leaks, public awareness is a vital element of pipeline safety. Enbridge has a comprehensive public awareness program in place to engage landowners, community members, and first responders to ensure that they are aware of our pipelines and related facilities.

Q. How does Enbridge protect the environment?

A. Enbridge is committed to identifying, mitigating, and proactively managing potential construction project effects on the environment. For example, Enbridge:

- studies and then selects a route that avoids or minimizes impacts on the environment;
- adheres to its environmental permit requirements;
- employs best management practices to reduce our impact in sensitive areas; and
- conserves valuable energy resources.

As described in Section 5 of the CN Application, Enbridge also invests in technology to develop equipment that will minimize the use of energy. Enbridge’s use of a larger pipeline diameter reduces fluid velocities, resulting in reduced hydraulic line loss due to friction, which translates into lower energy consumption by the pumps. Enbridge also utilizes high-
efficiency pumps and motors to minimize power requirements over the long-term. Further, Enbridge’s Pipeline Control Center operators are trained to operate the pipeline at an optimum flow rate using the most efficient combinations of pumps, thereby minimizing energy consumption.

In addition to the Project-specific design to conserve energy, Enbridge has a growing presence in renewable energy, including solar, wind, waste-heat recovery, geothermal, and fuel cell technologies. To date, Enbridge’s investments in renewable energy systems in North America exceed $4 billion, and it has acquired (out-right or through partnerships) more than 2,200 MW of renewable energy generation. In addition, Enbridge is investing in alternative and emerging technologies related to energy efficiency and renewable energy. For additional information about Enbridge’s commitment to energy efficiency and conservation, see Section 5 of the CN Application.

V. ALTERNATIVES TO THE PROJECT

Q. Prior to submitting the CN Application, did the Applicant examine other alternatives to the proposed Project?
A. Yes. Enbridge examined the following as alternatives to the Project: no-action; rail; truck; and existing or planned pipelines. While I will summarize Enbridge’s evaluation of these alternatives, the alternatives are discussed in detail in Section 10 of the CN Application.

Q. What limiting factors did Enbridge consider when examining alternatives to the Project?
A. The Project’s purpose is to replace the Minnesota portion of the existing Line 3 to address integrity issues and restore its original operating capabilities to provide shippers with reliable and efficient crude oil transportation. In order to do this, the Project must connect to other portions of Line 3 being replaced in adjacent states and connect at Enbridge’s facility at Clearbrook, Minnesota. To align with the remaining Line 3 replacement segments and continue to meet the needs of shippers served by Line 3, the Project must: (1) cross into Minnesota in Kittson County to connect with the segment of Line 3 being replaced in North Dakota; (2) connect to the existing Enbridge Clearbrook Terminal in Clearbrook, Minnesota, so that crude oil can be delivered to Minnesota Pipe Line Company’s system and other Enbridge pipelines; and (3) exit Minnesota in Carlton County to connect with the segment of
Line 3 being replaced in Wisconsin, which then connects to existing Enbridge facilities at Superior, Wisconsin. An alternative that does not meet these requirements would not meet the primary purpose of the Project. With these requirements in mind, Enbridge considered and rejected the transportation methods discussed below as alternatives to the Project.

Q. Please explain why Enbridge determined that no action is not an alternative to the Project.

A. Under no action, Enbridge considered continuing to conduct integrity digs and repairs as needed to safely operate the existing Line 3, albeit under self-imposed pressure restrictions. Enbridge determined that the Project as proposed is less intrusive to landowners and the environment over the long-term than not replacing it.

At some point, it becomes economically infeasible to continue to operate the existing Line 3 due to the increasing frequency and density of maintenance activities required to keep the existing pipeline operational. Removing the existing Line 3 from service is not a reasonable option where no available alternate mode of transportation exists. This would result in significant impacts to Enbridge’s shippers, including the Minnesota refineries, who would have to obtain crude oil via other means. Furthermore, ongoing maintenance efforts will not restore the operating capability of Line 3, which is a necessary outcome of the Project. Accordingly, Enbridge rejected no action as an alternative to the Project.

Q. Please explain why Enbridge determined that rail is not an alternative to the Project.

A. In the event Line 3 is taken out of service because it has become infeasible to operate, the 760,000 bpd to be transported by the Project would likely be shipped via rail. However, there is no existing rail system in place to transport an additional 760,000 bpd to Line 3’s delivery points. Although rail tanker cars are a vital part of the short-haul distribution network for crude oil, the related infrastructure for loading and unloading crude does not exist. Nor is it clear that there are sufficient rail cars available to transport 760,000 barrels each and every day across Minnesota. Further, as trucks are required to deliver crude oil to rail facilities, the reliability of crude by rail in northern climates is compromised by restrictions in truck traffic due to winter storms and spring road restrictions or other weather-related or road capacity restrictions. For these reasons, Enbridge determined that rail is not an alternative to the Project.
In his direct testimony, Mr. Rennicke provides an additional analysis regarding the impacts of the no action alternative on rail transportation.

Q. Please explain why Enbridge determined that trucking is not an alternative to the Project.

A. Enbridge rejected trucking as an alternative to the Project because there is simply insufficient tanker trailer truck capacity to transport the 760,000 barrels of crude oil each and every day across Minnesota that would otherwise be moved by the Project, and the creation of such a trucking system is infeasible. In addition, truck transportation is less reliable than the Project because truck traffic is affected by weather conditions, mechanical failures, manpower shortages, and road maintenance or closures. Trucks also have a significantly higher rate of accidents than pipelines. Because it would not be possible to transport 760,000 bpd of crude oil via truck, Enbridge concluded that trucking is not an alternative to the Project.

Q. Please explain why Enbridge determined that other planned pipeline projects are not alternatives to the Project.

A. In the CN Application, Enbridge identified the following pipeline projects that had been proposed to transport crude oil from the Western Canadian Sedimentary Basin: Northern Gateway Project; Trans Mountain Pipeline Expansion; Energy East Pipeline Project; and Keystone XL Pipeline. None of these projects would deliver crude oil to Clearbrook, Minnesota, or Superior, Wisconsin. Specifically, the Northern Gateway, Trans Mountain Pipeline Expansion, and the Energy East Pipeline projects do not enter the United States. Similarly, the Keystone XL Pipeline does not cross Minnesota and would not provide needed pipeline capacity to refineries in Minnesota, Wisconsin, the greater Chicago area, or other Midwest refineries. Accordingly, Enbridge determined that these planned pipeline projects are not alternatives to the Project.

Schedule 2 to Mr. Neil Earnest’s testimony provides additional updates regarding the status of these pipeline projects, further underscoring that they are not viable alternatives to the Project.

Q. Please explain why Enbridge determined that the expansion of an existing Enbridge pipeline is not an alternative to the Project.
A. Enbridge cannot expand the capacity of one or more of the existing pipelines on the Enbridge Mainline System from Western Canada to Superior, Wisconsin to accommodate the transportation of Line 3 oil shipments. The Minnesota Public Utilities Commission issued a Certificate of Need to Enbridge for the Line 67 Phase 2 Project on November 7, 2014, allowing Line 67 to operate at its full annual average capacity. Line 67 is now fully utilized and cannot transport the additional volumes that would be required if Line 3 were taken out of service. The remaining pipelines in Enbridge’s Mainline System cannot be expanded to accommodate the transportation of Line 3 oil shipments. Accordingly, expansion of an existing pipeline on the Enbridge Mainline System is not a viable alternative to the Project.

Q. Did Enbridge also evaluate the alternative SA-04-L3 from the Final Scoping Decision Document?

A. Yes. Following the Commission’s inclusion of SA-04-L3, Enbridge evaluated this system alternative.

Q. What were the results of Enbridge’s evaluation of SA-04-L3?

A. SA-04-L3 does not meet the purpose and need of the Project. It cannot serve as a replacement to the existing Line 3, because it does not connect to existing Enbridge pipelines or facilities at Clearbrook or Superior.

Further, SA-04-L3 has significantly more impacts to landowners and the environment than the Project. For example, it would add approximately 400 miles of pipe, two more pump stations, and an entirely new terminal, including seven new crude oil tanks, somewhere in the congested vicinity of Joliet, Illinois. It would cross five states and cost an estimated $5.5 billion, which is more than twice the cost of the Preferred Route. The additional construction disturbance significantly increases the potential for human and environmental impacts, both from construction and operation of this alternative. Moreover, because it would deliver directly to Illinois, with no opportunity for deliveries in Minnesota or Wisconsin, it would serve fewer potential shippers, while increasing costs for all Enbridge Mainline shippers. For example, the Minnesota refiners would lose a substantial portion of the available shipping capacity on the Enbridge Mainline System if SA-04-L3 were constructed, but would still bear the increased cost of the alternative. More detailed analysis of SA-04-L3 is included in the Enbridge Alternatives Analysis included as Schedule 7 to Mr. Simonson’s testimony, as well as in the testimonies of Mr. Glanzer and Mr. Fleeton.
VI. ROUTING CONSIDERATIONS

Q. What general principles were used to guide the selection of Enbridge’s Preferred Route?

A. In developing a preferred route, Enbridge sought to develop a route that satisfied the Project need, while balancing four main objectives:

1. Avoid and minimize long-term impacts, to the extent feasible, to environmentally sensitive areas such as lakes, rivers, wetlands, wildlife habitats, and forest lands;
2. Avoid and minimize impacts to human settlements such as farmsteads, residences, and residential developments to the extent possible;
3. Select a route that parallels or utilizes existing, previously disturbed utility corridors or rights-of-way (“ROW”) to minimize human and environmental impacts; and
4. Select a route width that provides sufficient additional temporary work space and the flexibility needed to accommodate unforeseen impediments encountered during construction.

These principles are applied to the routing process through the following steps:

1. Establish the necessary end points and identify the shortest most efficient route available;
2. Maximize the use of existing facilities within the identified area of the route;
3. Co-locate with existing utilities where possible; and
4. Identify areas of potential high consequence and environmental impacts and apply reroutes or site-specific engineering to minimize impacts to people and the environment.

In addition, Enbridge analyzed potential routes in compliance with the Pipeline Routing Permit requirements under Minnesota Statutes Chapter 216G and Minnesota Rules Chapter 7852. As part of this analysis, Enbridge considered the impacts on land use, terrain and geology, soils, vegetation, wildlife, fisheries, groundwater resources, surface water resources, wetlands, roads, forest lands, cultural resources and federal, state or county recreational areas, as well as socioeconomic impacts.
Once an initial route was identified, extensive civil and environmental field surveys were conducted (with landowner permission) to assist in the refinement of the preferred route. Finally, through consultation with landowners, communities, environmental agencies, and other stakeholders, a preferred route was developed.

Q. Did Enbridge consider input from landowners, agencies, and local government officials when developing its Preferred Route?
A. Yes. Enbridge solicited feedback from landowners, agencies, and local government officials through early coordination letters and open houses. In addition, Enbridge carefully considered comments received by the Minnesota Department of Commerce, Energy Environmental Review and Analysis (“DOC-EERA”) during the public comment periods open in 2015 and 2016. As a result of this public and stakeholder input, Enbridge made over 50 changes to the proposed centerline of its Preferred Route and incorporated 23 proposed route alternatives.

Q. What route is Enbridge requesting the Commission approve as part of this routing permit proceeding?
A. Enbridge is requesting that the Commission grant a route permit for the Preferred Route, with the inclusion of RSA-05-L3. The Preferred Route generally follows the existing Line 3 pipeline along the Enbridge Mainline System right-of-way (“ROW”) from the North Dakota/Minnesota border in Kittson County to and including the Clearbrook Terminal in Clearwater County (referred to as the “West of Clearbrook” portion of the route). Next, the Preferred Route turns south from Clearbrook to generally follow an existing third-party pipeline ROW to Hubbard County and then turns east to generally follow existing electric transmission lines to the Minnesota/Wisconsin border in Carlton County (referred to as the “East of Clearbrook” portion of the route). The Preferred Route traverses Polk, Red Lake, Clearwater, Hubbard, Wadena, Cass, Crow Wing, Aitkin, and Carlton Counties in Minnesota.

RSA-05-L3 deviates from the Preferred Route at approximate MP 926.9, approximately 5 miles southeast of Bagley in Clearwater County. RSA-05-L3 then travels east through forest and agricultural fields for 4 miles until it turns south through forest and agricultural fields for 9 miles. It rejoins the Preferred Route at approximate MP 936.7, all within Clearwater County.
Enbridge is requesting a 750 foot wide route, 375 feet on either side of the pipeline centerline.

VII. ROUTE ALTERNATIVES ANALYSIS

Q. Did Enbridge consider other routes as it developed its Preferred Route?
A. Yes. As described in Section 6.6 of the Route Permit Application, Enbridge considered a number of route alternatives when it developed the Application. A discussion of each alternative and the reasons each was ultimately rejected is included in Section 6.6 of the Route Permit Application.

Q. Did Enbridge analyze the route alternatives accepted by the Commission for evaluation at the public hearings and in the Environmental Impact Statement (“EIS”)?
A. Yes. Enbridge analyzed each of the system, route and route segment alternatives accepted by the Commission. Enbridge’s Alternatives Analysis (Schedule 7 of Mr. Barry Simonson’s direct testimony) includes a description and analysis of each alternative, using the naming convention provided by DOC-EERA in the December 5, 2016 Final Scoping Decision Document. I am sponsoring the recommendations portions of Enbridge’s Alternatives Analysis. Enbridge recommends that the Commission issue a Route Permit for the Preferred Route, with the inclusion of RSA-05-L3. RSA-05-L3 avoids connectivity and potential impacts to the Eastern Wild Rice Watershed, which contains Upper Rice Lake and Lower Rice Lakes, two rice lakes noted as important resources to the White Earth Band of Ojibwe.

Q. Has Enbridge modified its Preferred Route based on public comments received as part of the MPUC permitting process?
A. Yes. Schedule 5 of my testimony contains a table summarizing the route changes Enbridge has made in response to public comments as well as the minor centerline alignment shifts (i.e., straightening bends, etc.) along the Preferred Route that have been identified as part of Enbridge’s continuing stakeholder engagement and engineering refinement processes. These changes were described in Enbridge’s May 26, 2016 Scoping Comments and accepted by the Commission as part of the Applicant’s Proposed Route in the December 2016 Final Scoping Decision Document.
Q. Why didn’t Enbridge propose routing the Project along the existing Enbridge Mainline System Corridor (the “Enbridge Mainline System”)?

A. Enbridge’s routing analysis started with a robust evaluation of a route that followed the existing Enbridge Mainline System (referred to as the “Northern Route” in the Route Permit Application) because of Minnesota’s strong preference for utilizing existing utility corridors and Enbridge’s own internal efficiencies related to routing along existing Enbridge ROW.

However, Enbridge soon identified three major obstacles to routing the Project along the Enbridge Mainline System.

Q. Please describe the obstacles preventing Enbridge from routing the Project along the Northern Route.

A. The major obstacles include:

1) Objections from Leech Lake Band of Ojibwe (“LLBO”) to routing another pipeline through the Leech Lake Reservation. Early in the regulatory process for the Sandpiper Pipeline Project, LLBO stated that North Dakota Pipeline Company did not have legal or regulatory approval to expand the Enbridge Mainline System through the Leech Lake Indian Reservation (“Reservation”). (See Schedule 6 to my testimony.) The inability to secure agreement and approvals with LLBO makes it impossible for Enbridge to construct a pipeline through the Reservation, including areas of the existing Enbridge Mainline System that cross the Reservation. As recently as January 19, 2017, LLBO has again reiterated its objection to constructing the Project through the Leech Lake Reservation. LLBO’s most recent letter to the Commission is also included in Schedule 6 to my testimony.

2) The existing Enbridge Mainline System from Clearbrook to Superior is heavily congested with significant obstacles to construction and operation. In addition to Enbridge’s six pipelines in the ROW, US Hwy 2, a rail corridor, and the newly constructed CapX Bemidji to Grand Rapids 230 kV transmission all lie adjacent to the existing pipelines. The significant congestion along this corridor would require several unique pipeline installations that can be avoided by utilizing the Preferred Route. Examples of unique pipeline installations along the Enbridge Mainline System that occurred due to the congestion and complexity of the ROW include:

- Two pipelines which cross Cass Lake;
- Two pipelines installed down the center of a road (Railroad Avenue) in the town of Cass Lake, MN;
• Routing immediately adjacent to a superfund site with four pipelines near Cass Lake, 
  MN;
• Four pipelines in an active gravel mining operation in Grand Rapids, MN;
• Two pipelines through the college yard and grounds in Grand Rapids, MN; and
• A general increase in the population density along the corridor (e.g., the corridor 
  crosses the grounds of the Bemidji High School and residential developments in 
  Bemidji, Cohasset, and Grand Rapids).

Several of these congested areas are described further in Schedule 7 of Mr. Simonson’s 
testimony within the analysis of RA-07-L3. Installing another pipeline in these areas will only 
create additional constructability issues and impacts to the public and the environment.

3) Finally, construction along the Northern Route would require further expansion of the 
utility corridor through the Chippewa National Forest ("CNF").

Q. How did the obstacles along the Northern Route influence development of Enbridge’s 
Preferred Route?

A. Once it became apparent that Enbridge would need to develop a route that avoided the 
increasing populations, the LLBO Reservation and forest land within the Chippewa National 
Forest. Enbridge looked for other existing utility corridors that provided an efficient means of 
connecting the pipeline between Clearbrook, Minnesota, and Superior, Wisconsin. The 
Minnesota Pipe Line Company ROW south of Clearbrook, coupled with electric ROWs 
provided opportunities for co-location with existing linear features including utility 
infrastructure and road ROW for approximately 75 percent of the Preferred Route.

Q. Would these obstacles along the Northern Route be eliminated if Enbridge removed 
the existing Line 3 and constructed the Project in the existing Line 3 trench?

A. No. All of the obstacles discussed above would continue, and additional complications 
would be added by in-trench replacement. Enbridge analyzed in-trench replacement 
extensively as described in Section 6.6.1 of the Route Permit Application and further 
examined it in the context of RA-07-L3 as accepted by the Commission in the Final Scoping 
Decision Document. As discussed in greater detail in Schedule 7 of Mr. Simonson's 
testimony, in-trench replacement raises significant safety risks, as it requires construction 
over active pipelines, requires greater area of disturbance than construction on the outer 
edge of an existing pipeline right-of-way, and still has the potential to impact LLBO, CNF, 
the Superfund site and all of the population centers discussed for the Northern Route. In
addition, in-trench replacement will require that existing Line 3 be removed from service for approximately 16 months, negatively impacting the reliability of crude oil transportation to refineries in Minnesota and its neighboring states.

Q. Why does Enbridge support its Preferred Route over the other route alternatives being evaluated in this proceeding?

A. Enbridge has spent tens of thousands of hours developing and evaluating the Preferred Route. It provides the most efficient and practicable means of meeting the stated need of the Project. It balances Minnesota’s routing criteria and maximizes the use of existing infrastructure through the existing connections at Clearbrook and Superior. It avoids routing through areas of significant population density. Through minor reroutes along the Preferred Route, it further avoids or minimizes potential impacts to people and the environment. It also addresses concerns of landowners living along the route, as evidenced by the fact that Enbridge has entered into voluntary easements with approximately 95 percent of the private landowners on the Preferred Route.

VIII. PERMANENT DEACTIVATION OF EXISTING LINE 3

Q. Please describe the existing Line 3 pipeline.

A. Line 3 is a 1,097 mile, 34-inch diameter pipeline that has been in operation since the 1960s. Of the 1,097 miles, 282 miles are located in Minnesota. The existing Line 3 pipeline is located among multiple other operating pipelines within the Enbridge Mainline System. The Enbridge Mainline System originates in Canada and crosses the U.S./Canada border near Neche, North Dakota. It continues through North Dakota to the Clearbrook Terminal near Clearbrook, Minnesota and terminates at the Enbridge Superior Terminal near Superior, Wisconsin.

Q. What does “permanent deactivation” mean?

A. In these proceedings, Enbridge uses the term “permanent deactivation” to describe its plans to permanently remove existing Line 3 from service after the Project becomes operational. Federal regulations (49 Code of Federal Regulations (“C.F.R.”) Part 192.3) use the term “abandoned” to describe pipelines “permanently removed from service.” The only other category of pipeline operations recognized under federal regulations is “active” pipelines. Under federal regulations, Enbridge will “abandon” existing Line 3 and follow all
requirements of 49 C.F.R. Parts 195.59 and 195.402 once the Project has been placed into service. However, as Mr. Barry Simonson describes in more detail, Enbridge will also go beyond the requirements of federal regulations for abandoned pipelines and continue to monitor the deactivated Line 3 pipeline even though the pipeline will be purged, cleaned and disconnected from the active pipeline system. Because the common understanding of "abandoned" suggests no further monitoring will take place, Enbridge has chosen to refer to its activities related to existing Line 3 as “permanent deactivation.”

Q. Please describe the steps Enbridge will take to deactivate the existing Line 3 pipeline.

A. Enbridge’s Permanent Deactivation Plan is provided as Schedule 6 of Mr. Simonson’s testimony. In summary, Enbridge will: purge the pipeline of oil; clean the pipeline; isolate the pipeline from specific infrastructure which is actively transporting oil; further segment the pipeline, as needed, including completing all required remediation at roads, railroads, waterbodies, or any other permitted crossing in consultation and coordination with that crossing’s authority; and continue to monitor the existing right-of-way (ROW) to identify, assess, and appropriately mitigate apparent or emerging risk to public safety, the environment, or current land use caused by the Permanently Deactivated pipeline. As part of the ongoing maintenance and monitoring, Enbridge will continue to apply cathodic protection (CP) until such time that it is ineffective or otherwise detrimental.

Q. Will Enbridge continue to monitor the existing Line 3 pipeline once it is deactivated?

A. Yes. To ensure the protection of the public, the environment, current land uses, adjacent Enbridge pipelines, and third-party utilities, the right-of-way for the Line 3 will continue to be maintained after the line is taken out of service. This includes patrolling and monitoring surface conditions, accessing impacts of any exposed pipe, mowing brush, inspecting crossings, maintaining signage, and inclusion in the Gopher State One Call system.

Q. Will the existing Line 3 pipeline be permanently removed from service?

A. Yes. The existing Line 3 pipeline in Minnesota will be permanently removed from service after the Project has received all regulatory approvals and is constructed, tested, and placed into service.
Q. Have you reviewed the Pipeline Route Permit template that Commission Staff filed in this docket?
A. Yes. I have reviewed the generic template pipeline route permit posted February 1, 2016 and available on eDockets as Document No. 20162-117889-01.

Q. Does Enbridge have any requested changes to the generic template pipeline route permit for the Project?
A. Yes. Enbridge has provided draft language in Schedule 7 of my testimony. As an initial matter, Enbridge has made a number of revisions to the Template to provide Project-specific information and to describe the route Enbridge is requesting for approval. The suggested language is consistent with the updated EAW provided in Schedule 2 of my testimony.

Specifically, the revisions in the following sections were made to provide Project-specific information: Section 1.0 (Route Permit); Section 2.0 (Project Description); Section 2.1 (Associated Facilities); Section 2.2 (Project Location); Section 3.0 (Designated Route); Section 3.1 (Permanent Right-of-Way); Section 3.2 (Temporary Right-of-Way); and Section 5.5 (Construction Practices).

In addition, Enbridge proposes further revisions to facilitate the efficient construction of the Project and minimize or avoid Project impacts. Specifically:

<table>
<thead>
<tr>
<th>Section</th>
<th>Description of Change</th>
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<tr>
<td>Section 3.0 Designated Route</td>
<td>Enbridge has proposed additional language similar to the language the Commission included in the pipeline route permit granted to Enbridge Energy, Limited Partnership and Enbridge Pipelines (Southern Lights) L.L.C for the Alberta Clipper Pipeline and the Southern Lights Diluent Pipeline in Docket No. PL-9/PPL-07-361. This language provides for alignment modifications within the designated route. It also provides for route width variations to overcome potential site-specific constraints, including unforeseen circumstances encountered during the detailed engineering and design process, federal or</td>
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state agency requirements, and existing infrastructure within the pipeline route. The proposed language requires any alignment modifications resulting from these site-specific constraints not result in significant changes to human or environmental impacts relative to the criteria set forth in Minnesota Rule 7852.1900. The proposed language also requires the alignment modifications to be specifically identified in and approved as part of the Plan and Profile required by Section 10.1 of the pipeline route permit.

<p>| Section 3.4 Additional Temporary Workspace | Enbridge proposes this new section to allow for additional temporary workspaces in those areas where it is needed to avoid or mitigate impacts to the environment and facilitate safe and efficient construction. |
| Section 4.0 State and Federal Minimum Depth of Cover Requirements | Enbridge proposes these revisions to provide for construction flexibility in the event areas of difficult excavation are encountered while still maintaining compliance with federal regulations. |
| Section 5.2 Environmental Protection Plan | The proposed revision simply indicates that Enbridge’s plan is titled “Environmental Protection Plan.” |
| Section 5.5.7 Noise | Enbridge proposes these revisions to allow for necessary flexibility. Although Enbridge generally intends to limit construction to daytime working hours, nighttime construction may be necessary in some instances, such as where horizontal directional drilling is used, to ensure efficient construction practices and mitigate impacts. |
| Section 5.5.8 Site Sediment and Erosion Control | Enbridge proposes these changes to clarify that, in addition to complying with the practices recommended by the Minnesota Pollution Control Agency Construction Stormwater Program, Enbridge’s erosion prevent and sediment control practices will be conducted consistently with the Environmental Protection Plan. |
| Section 5.5.12 Vegetation Removal and Protection | The proposed revisions are intended to better align this section with the Environmental Protection Plan. |</p>
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<tr>
<td>5.5.16</td>
<td>Wetlands and Water Resources&lt;br&gt;The proposed revisions are intended to maintain needed construction flexibility and better align this section with the Environmental Protection Plan.</td>
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<tr>
<td>5.5.19</td>
<td>Archaeological and Historic Resources&lt;br&gt;The proposed revisions are intended to incorporate the provisions of Enbridge’s Unanticipated Discoveries Plan into this section.</td>
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<tr>
<td>5.5.20</td>
<td>Restoration&lt;br&gt;Enbridge proposes these revisions to clarify when restoration will be determined to be complete.</td>
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<tr>
<td>6.0</td>
<td>Special Conditions&lt;br&gt;The special conditions proposed by Enbridge are consistent with commitments made in the Application and the updated EAW.</td>
</tr>
<tr>
<td>10.4</td>
<td>As-Builts&lt;br&gt;Enbridge proposes revising this section to require as-builts within one calendar year, rather than 60 days, after completion of construction. Enbridge anticipates it will take longer than 60 days to gather this data and believes that one year is a more reasonable timeframe for a project of this length.</td>
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<tr>
<td>10.5</td>
<td>GPS Data&lt;br&gt;Enbridge proposes revising this section to require GPS data one calendar year, rather than 60 days, after completion of construction. Enbridge anticipates it will take longer than 60 days to gather this data and believes that one year is a more reasonable timeframe for a project of this length.</td>
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**X. CONCLUSION**

Q. Is Enbridge requesting that the Minnesota Public Utilities Commission approve the Line 3 Replacement Project and issue a certificate of need and route permit for the Project?  
A. Yes.

Q. Does this conclude your direct testimony?  
A. Yes, it does.