

ATTACHMENT C

ENBRIDGE 2016 DEPRECIATION STUDY

1. Pipeline Overview CFR § 347.1 (e) (2)

An explanation of the organization, ownership, and operation of the pipeline.

The 2,211 mile Lakehead system, which is the United States portion of the world's longest liquid petroleum pipeline, has operated for more than 60 years and is the primary transporter of crude oil and natural gas liquids from western Canada to the United States. It is a common carrier pipeline that runs from the international border near Neche, North Dakota to the international border near Marysville, Michigan, with an extension across the Niagara River into the Buffalo, New York area. As of December 31, 2015, it consisted of approximately 5,022 miles of pipe with various loops having diameters ranging from 12 to 48 inches; 73 pump station locations; and 77 crude oil storage tanks with a capacity of about 18.1 million barrels.

The Lakehead system is owned by Enbridge Energy, Limited Partnership, (Enbridge Energy) which is an operating subsidiary of Enbridge Energy Partners, L.P. (the Partnership). The Partnership, headquartered in Houston, Texas, is a leader in energy transportation, delivering crude oil, liquid petroleum and natural gas, and operating natural gas midstream businesses in the Mid Continent and Gulf Coast regions of the United States. The Partnership's liquids segment business is conducted in large part through the ownership of the Lakehead system, which transports crude oil and natural gas liquids primarily from reserves in western Canada through its connection with its affiliated pipeline in Canada, Enbridge Pipelines Inc. (collectively, the Enbridge Mainline), and the Bakken formation in the Midwest to refining centers in the Midwest and eastern Canada and to connections with other pipelines serving those regions and the U.S. Gulf Coast. In 2015, Lakehead system deliveries averaged 2.3 million barrels per day, meeting approximately 76% of the refinery capacity in the greater Chicago area; 76% of the Minnesota refinery capacity; and 84% of Ontario refinery capacity. The natural gas segment consists of gathering, transmission, processing, treating, and marketing subsidiaries operating in the Mid-Continent and Gulf Coast regions.

The Partnership was formed in 1991 to acquire the Lakehead system from Enbridge Energy Company, Inc. (EECI). The Partnership's units trade on the New York Stock Exchange (NYSE) under the symbol EEP. Shares of Enbridge Energy Management, L.L.C., which manages the business and affairs of the Partnership, trade on the NYSE under the symbol EEQ. Enbridge Inc. (Enbridge) based in Calgary, Alberta holds an approximate 42 percent interest in the Partnership through its U.S. subsidiary EECI, the general partner of the Partnership. Enbridge Energy Management, L.L.C., together with public unitholders, own the remaining interest. Enbridge trades on the NYSE and Toronto Stock exchange under the symbol ENB.

2. General Principles Summary CFR § 347.1 (e) (1)

A brief summary relating to the general principles on which the proposed depreciation rates are based.

All material to support approval of the revised depreciation rates as required in Subpart P, Chapter 1, Title 18, Code of Federal Regulations (CFR), Part 347 is available in this filing.

Enbridge Energy is requesting approval for the Lakehead system's proposed depreciation rates to be reflective of an estimated truncation date of 2045. Enbridge Energy is specifically requesting approval to use revised depreciation rates as of January 1, 2016 for ratemaking as well as FERC reporting purposes.

Two sets of depreciation rates, one for ratemaking purposes and one for accounting and financial statements, were approved by the Federal Energy Regulatory Commission (Commission or FERC)¹ for the Lakehead system effective January 1, 2006 (2006 Depreciation Study). The Commission also approved depreciation rates for the Alberta Clipper Pipeline system using a 30-year useful life for all plant accounts with the exception of Account 164 for FERC Form 6 reporting purposes.²

In this filing Enbridge Energy is requesting approval to update the Lakehead system's depreciation rates for both ratemaking and FERC Form 6 reporting purposes. Going forward, Enbridge Energy proposes to use one set of depreciation rates for all FERC related purposes.

As mentioned in the "Pipeline Overview", the assets of EECI were acquired in December 1991 by the Partnership. For ratemaking purposes the property, plant and equipment (PP&E) continues to be carried at historical cost (EECI's basis at the time of the acquisition plus subsequent net additions) and depreciated using rates previously approved by the Commission. Enbridge Energy continues to maintain historical cost PP&E records.

Since the 2006 Depreciation Study, the Lakehead system has undergone significant expansion in addition to recurring maintenance and integrity capital expenditures. The aggregate net book value of PP&E has increased \$9 billion since the 2006 Depreciation Study. The majority of additions to PP&E have been attributable to projects constructed and placed in service pursuant to the Facilities Surcharge Offer of Settlement (Facilities Surcharge) approved by the Commission.³ These additions have been fully supported by the counter-party to the Facilities Surcharge, the Canadian Association of Petroleum Producers (CAPP), which is an association that represents the producers of the vast majority of the petroleum transported by Enbridge Energy. The Facilities Surcharge allows Enbridge Energy to recover the costs associated with

¹ Docket No. DO06-4-000. Letter Order dated August 30, 2006.

² Docket No. DO11-7-000. Letter Order dated August 4, 2011.

³ Enbridge Energy, Limited Partnership, 107 FERC 31,336 (June 30, 2004) Docket No. OR04-2-000.

shipper-requested and supported projects through an incremental surcharge layered on top of the existing indexed base rates (the Index). The majority of the Facilities Surcharge projects have distinct commercial attributes, including depreciation terms which differ from the depreciation terms of the assets that are not tolled through the Facilities Surcharge. Due to this unique situation of having different depreciation terms and conditions, Enbridge proposes to segregate the Facilities Surcharge assets and the Index assets for depreciation purposes.

For the Facilities Surcharge assets, the depreciation rates were determined on the basis of the Commission-approved Facilities Surcharge agreements with CAPP. As of December 31, 2015, there had been 24 shipper-supported projects approved by the Commission for inclusion in the Facilities Surcharge⁴. Six of these projects provide for specific depreciation term of the underlying assets either through a fixed depreciation rate or a fixed period as stipulated in the applicable Facilities Surcharge project. Each Facilities Surcharge project has a single depreciation rate which applies to all plant accounts for ratemaking purposes. Table 1 shows those Facilities Surcharge projects with stipulated depreciation terms and their composite remaining life at December 31, 2015.

Table 1: Facilities Surcharge Projects with fixed and stipulated depreciation terms

No.	Facilities Surcharge Project	FERC Docket No.	FERC Approval Date	Depreciation Start Date	Truncation Date	Composite Remaining Life at 12/31/15 (in years)
1	Project 5 - Southern Access Mainline Expansion Project	OR06-3-000	3/16/2006	4/1/2008	3/31/2038	N/A
2	Project 14 - Line 6B Integrity Project	OR11-5-000	3/31/2011	1/1/2011	12/31/2040	25.0
3	Project 15 - Line 6B Pipeline Replacement and Dig Program	OR12-8-000	3/29/2012	6/30/2013	6/29/2043	27.5
4	Project 21 - Legacy Line 14	OR14-33-000	7/31/2014	1/1/2014	12/31/2020	5.0
5	Project 21 - Line 14 2013 Additions	OR14-33-000	7/31/2014	1/1/2014	12/31/2035	20.0
6	Project 22 - Recoverable Legacy Integrity	OR14-33-000	7/31/2014	1/1/2014	12/31/2035	20.0

Project 5, Southern Access Mainline Expansion Project, has a fixed depreciation rate of 3.33% as stipulated in the terms of the agreement.⁵ The other Facilities Surcharge projects noted in Table 1 have language in their respective agreements that prescribe a depreciation period or a truncation date. Even though certain Facilities Surcharge projects have specific truncation dates, the related physical assets will remain in-service beyond these dates.

⁴ The following Facilities Surcharge projects are not included in this Depreciation Study as they have either been fully recovered or have no capital component: Projects 2, 4 (Docket No. OR04-2-000); Projects 9, 10, and 11 (Docket No. OR09-5-000). Project 25 (OR16-9-000) was approved by the FERC on February 1, 2016 and is not a capital project.

⁵ FERC Docket No. OR06-3-000, at Page 9.

The remaining Facilities Surcharge projects⁶ that do not have stipulated depreciation terms have been assessed using a remaining life of 30 years to align with the truncation date recommended by Gannett Fleming Valuation and Rate Consultants, LLC (Gannett Fleming).

The remaining balance of the Lakehead system PP&E is comprised of Index assets. Depreciation rates for these assets are based on the remaining lives developed by Gannett Fleming and are provided for in Appendix “F” at page III-4. An explanation of the depreciation rates for the Index assets is discussed below in CFR § 347.1 (e) (4).

Summaries of current and proposed depreciation rates, remaining economic lives, gross plant and accrued depreciation for each Facilities Surcharge project are included in Appendix “A”. Gross plant balances and accrued depreciation balances are as of December 31, 2015.

3. Average Remaining Life CFR § 347.1 (e) (4)

An explanation of the average remaining life on a physical basis and on an economic basis.

This depreciation study reflects the straight-line method of depreciation using a remaining service life basis. The remaining service life is primarily dependent on two factors: physical life and economic life. As discussed above, in order to best assess the service life of the Lakehead system, Enbridge Energy segregated the assets between Index assets and Facilities Surcharge assets.⁷

For the Index assets, Enbridge Energy engaged Gannett Fleming to undertake an average service life study. This study is included in Appendix “F”. It should be noted that because Enbridge Energy’s fixed asset ledger is not fully categorized by Index or Facilities Surcharge assets, Gannett Fleming was unable to segregate and analyze only the Index assets but instead prepared its study on a group that included both Index assets as well as some Facilities Surcharge assets. Nevertheless, Gannett Fleming views the results of its work as providing a reasonable estimation of the remaining service lives of the Index assets. Accordingly, Enbridge Energy has utilized these remaining service lives (subject to the 30-year truncation date as described below) in calculating depreciation rates for the Index assets.

For the Facilities Surcharge assets, Enbridge Energy proposes that the economic life, as determined by the Commission-approved Facilities Surcharge agreements with CAPP, be the sole factor in establishing the remaining life. For certain Facilities Surcharge projects, the economic life is further shortened pursuant to the terms of the project’s negotiated settlement.

⁶ Project 12 – Alberta Clipper Project; Project 18 – Eastern Access Phase 1; Project 19 – Eastern Access Phase 2; Project 20 – 2014 US Mainline Expansions; Project 21 – Line 14 Additions; Project 23 – Recoverable Future Integrity; Project 24 – 2015/16 US Mainline Expansions. Projects 1, 3, 6, 7, 8, 13, 16 and 17 are categorized as Other FSM Projects for the purposes of this Depreciation Study.

⁷ See Appendix A.

These economic lives are reflected in the proposed depreciation rates as noted in Table 1 and Appendix “A”.

3.1 Physical Life

The physical life of the pipeline is continually extended through the efforts of a comprehensive program of maintenance and refurbishment. Enbridge Energy’s pipeline integrity program identifies sections of the pipeline needing repair or replacement and is designed to maintain the safe operating lifespan of the pipeline for an indefinite period of time.

Given this approach to integrity, the service life of the Lakehead system is not dependent solely upon physical forces such as deterioration but also to a great extent upon the economic exhaustion of supply and a change in the demand for crude oil.

3.2 Economic Life

The assessment of the economic life of the pipeline is as important as the estimation of the physical life in the calculation of appropriate depreciation rates given the long lived nature of pipeline assets. The remaining lives of all asset groups have been limited to a truncation date of December 31, 2045, based on an economic life review of the Lakehead system.

There are a number of factors affecting the economic viability of the Lakehead system beyond a 30-year remaining life. The amount of conventional reserves is finite and the economic feasibility of non-conventional reserves is unclear and dependent on oil prices, demand and technology. The 30-year remaining life is a reasonable point within the range of dates during which the facilities are expected to be retired.

Additionally, there is considerable uncertainty when attempting to forecast economic life beyond periods exceeding 30 years. The sensitivity of these forecasts to price, technology and changes in environmental requirements is significant. Due to these uncertainties, a truncation period of 30 years was used for the Lakehead system, consistent with the 2006 Depreciation Study. The economic life of the Lakehead system depends on both the supply and demand of the petroleum it transports.

3.3 Crude Oil Supply Capability

There is considerable uncertainty when attempting to forecast crude oil production, particularly over periods exceeding 20 years. By their very nature, forecasts of the future supply and demand for crude oil present a wide range of possible values. The sensitivity of these forecasts to price, technology and changing environmental requirements is significant. For this reason, most published oil supply and demand forecasts do not include estimates beyond the twenty-year period following the date of the forecast. However, current supply forecasts for Canada and the United States, support the conclusion that adequate crude oil supply will be available to the Lakehead system to support a 30-year economic life.

3.3.1 Canadian Supply

In terms of oil reserves, where it is proven that oil can be economically recovered, Canada ranks third globally after Saudi Arabia and Venezuela with about 172.2 billion barrels⁸. Ninety-seven percent of the current crude oil reserves are found in the oil sands formations in western Canada, with the balance located in conventional fields in western and eastern Canada.

The majority of the Lakehead system's crude oil supply comes from western Canada. While the supply of conventional crude oil from this region has been flat to decreasing, the production of crude oil from the Alberta oil sands has been increasing and, according to the National Energy Board of Canada (NEB) and CAPP, is expected to more than offset the decline of conventional crude in both western and eastern Canada. According to the NEB reference case, total oil sands production between 2015 and 2040 is estimated to increase by 1.8 million barrels per day compared to negative growth in conventional crude production of around 180 thousand barrels per day resulting in net Canadian growth of 1.6 million barrels per day⁹. Compared to the NEB's forecast, CAPP's 2016 Canadian production forecast is between the NEB low price and reference cases in 2030 (the furthest year projected)¹⁰.

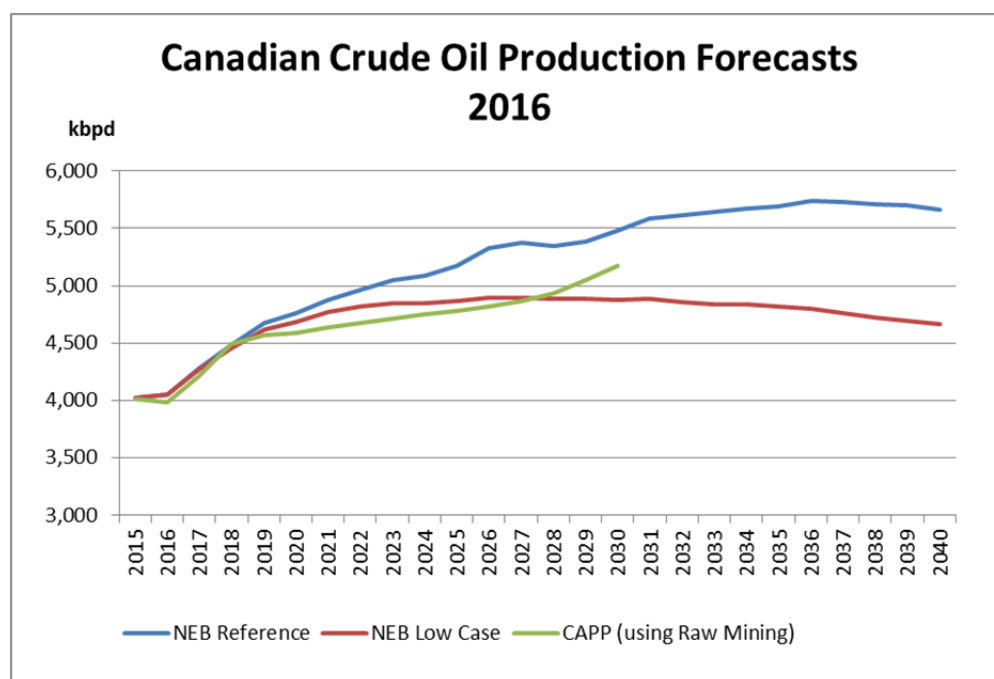
The United States Department of Energy's Energy Information Administration's (EIA) prediction for Canada is not as robust as the NEB for total Canadian production. In its Annual Energy Outlook 2016 (AEO 2016), the EIA's reference case production only forecasts growth of 1.2 million barrels per day by 2040¹¹.

⁸ BP Statistical Review 2016, at Page 6.

⁹ National Energy Board, Canada's Energy Future 2016, Update October 2016.

¹⁰ CAPP Crude Oil Forecast, Markets and Transportation, June 2016.

¹¹ EIA Annual Energy Outlook 2016, Table 21.

Table 2: Canadian Crude Oil Production Forecast from NEB and CAPP

There is a general consensus amongst forecasters that there will be growth from western Canada, however, the magnitude is driven by expectations of oil prices and market conditions which includes available pipeline capacity. Ultimately, all increases in Canadian supply are destined for the export market.

3.3.2 United States Supply

For many years, oil production in the United States was in a steady state of decline. In recent years, however, with the advances of horizontal drilling along with other technological innovations, this trend has reversed. Increased production has not come only from mature fields such as the Rockies or the Permian Basin, but from shale plays in the Bakken region of North Dakota and the Eagle Ford. As a result of weakening global oil prices, the high growth trajectory of United States production has been mitigated in the past year. There has been approximately 590,000 barrels per day of decline from 2015 to 2016 and a further drop of 290,000 barrels per day is expected into 2017. The EIA, in its AEO 2016 reference case, anticipates a recovery in production in 2018, getting back to historical highs by 2026. Production in the United States under the reference case is projected to increase from 9.4 million barrels per day to 11.3 million barrels per day by 2040.¹²

¹² EIA Annual Energy Outlook 2016, Table 11

3.4 Crude Oil Demand Outlook

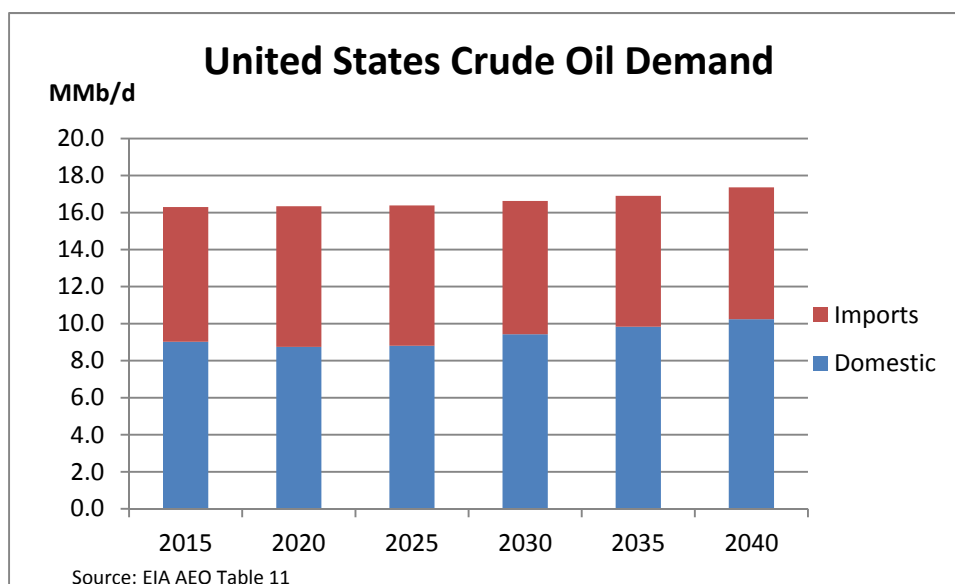
Market demand for crude oil transported by the Lakehead system comes primarily from refineries in the midwest United States and eastern Canada. Enbridge Energy expects that demand for western Canadian and Bakken crude oil production will continue to increase slowly in PADD II (the area that includes the Great Lakes and Midwest regions of the United States). PADD II refinery configurations and crude oil requirements continue to be an attractive market for western Canadian supply.

Enbridge Energy's expectation that increases in the supply of western Canadian and / or Bakken crude oil will result in increased deliveries on the Lakehead system is supported by:

- the proximity of western Canadian and Bakken crude oil to PADD II refining centers;
- the ability of both western Canadian and Bakken crude oil to access eastern Canadian refineries;
- the available capacity on the Lakehead system and the Lakehead's system ability, in conjunction with affiliated connected pipelines, to reach the Gulf Coast; and
- the increasing potential of the Gulf Coast as a refining market for western Canadian crude oil.

The NEB does not project further increases in Canadian refining demand beyond a small refinery under construction in Alberta. Canadian domestic demand for crude oil, which includes natural gas liquids, is projected to remain relatively flat with an increase of five percent between 2015 and 2040 based on energy content.

In its AEO 2016 reference case, the EIA forecasts that United States consumption of petroleum and other liquids, which include biofuels, will remain basically flat between 2015 and 2040, with an annual average increase 0.10%. Overall consumption is expected to grow from 19.4 million barrels per day to 20.1 million barrels per day over the same timeframe. Its projection for Canada, between 2015 and 2040, is only slightly higher at 0.2%, or 2.4 - 2.5 million barrels per day.

Table 3: United States Crude Oil Demand Forecast to 2040

3.5 Conclusion

Based on these assessments for Canadian and United States crude oil supply and demand and for the physical life of the Lakehead system, Enbridge Energy believes that a reasonable life span assumption is 30 years, resulting in a truncation date of 2045. Changes in the assessment of the factors in future years could result in upward or downward estimates of economic life and truncation date in future depreciation study submissions.

Even though the long-range prospects are positive for western Canadian crude oil supply, the Lakehead system competes for this supply with other pipelines and with western Canadian refineries. Although the Enbridge Mainline transported an estimated 51 percent of this crude supply in 2015, this percentage is subject to the changing nature of the market. Given that the majority of Lakehead volumes are supplied by crude oil produced in western Canada, increases or decreases in United States supply, particularly from the Bakken region, are not expected to significantly impact the Lakehead system.

As markets for Canadian crude oil mature or are created in areas other than those the Lakehead system currently serves, the portion of available Canadian crude oil that the Lakehead system carries can either increase or decrease, depending on the ability to expand the system into these regions. An increase in the demand for crude oil by new and maturing markets in the Rocky Mountains, West Coast, East Coast or other regions in the United States not serviced by the Lakehead system, could negatively affect the long-term supply available for the Lakehead system.

Enbridge Energy feels that the optimism of the long-term supply potential of western Canadian crude oil supply should be tempered by the uncertainties inherent in its prediction. Accordingly,

Enbridge Energy contends that it is difficult at this point to justify an estimated life of over 30 years and therefore recommends a 30-year estimated life for depreciation purposes.

4. Proposed Depreciation Rates CFR § 347.1 (e) (3)

A table of the proposed depreciation rates by account.

Please see Appendix “A” which sets forth the proposed depreciation rates for Lakehead’s Index and the Facilities Surcharge assets. The proposed changes reflect an overall increase in the economic lives of the Lakehead system assets due to an extension of the truncation date from 2035 to 2045. Gross plant balances and accrued depreciation balances are as of December 31, 2015.

5. System Maps CFR § 347.1 (e) (5) (i)

Up-to-date engineering maps of the pipeline including the location of all gathering facilities, trunkline facilities, terminals, interconnections with other pipeline systems, and interconnections with refineries/plants. Maps must indicate the direction of flow.

Please see Appendix “B”.

6. Operations Summary CFR § 347.1 (e) (5) (ii)

A brief description of the carrier's operations and an estimate of any major near-term additions or retirements including the estimated costs, location, reason, and probable year of transaction.

For a description of the Lakehead system operations, please refer to information provided in response to CFR §347.1 (e) (2) and CFR §347.1 (e) (5) (i).

Significant near-term additions include the Line 3 Replacement Project. The Line 3 Replacement Project provides for a new 36” diameter pipeline from the United States border to Superior, Wisconsin, except for approximately 16 miles downstream of the United States border which is 34” pipeline diameter. It includes eight new pump stations and terminal connectivity at the Clearbrook, Minnesota and Superior, Wisconsin terminals.

The maintenance driven Line 3 Replacement Project will reduce future repair activities and resulting disruptions to landowners and the environment, restore the historical operating capabilities of Line 3, and promote energy efficiency of Enbridge’s Mainline.

Subject to regulatory and other approvals, the estimated in-service date for the Line 3 Replacement Project is 2019. The total estimated cost for the United States portion of the Line 3 Replacement Project is \$2.6 billion.

7. Current Depreciation Rates CFR § 347.1 (e) (5) (iii)

The present depreciation rates being used by account.

Please see Appendix “A”.

8. Volume Information CFR § 347.1 (e) (5) (iv) and (vi)

For the most current year available and for the two prior years, a breakdown of the throughput received with source at each receipt point and throughput delivered at each delivery point. A list of shipments and their associated receipt points, delivery points, and volumes by type of product for the most current year.

Please see Appendix “C”.

9. Capacity Information CFR § 347.1 (e) (5) (v)

The daily average capacity (in barrels per day) and the actual average capacity (in barrels per day) for the most current year, by line section.

Please see Appendix “D”.

10. Plant and Reserve Balances CFR § 347.1 (e) (5) (vii)

For each primary carrier account, the latest month's book balances for gross plant and for accumulated reserve for depreciation.

Please refer to information provided in response to CFR §347.1 (e) (4).

11. Remaining Life Estimate CFR § 347.1 (e) (5) (viii)

An estimate of the remaining life of the system including the basis for the estimate.

Please refer to information provided in response to CFR §347.1 (e) (4).

12. List of Crude Oil Areas CFR § 347.1 (e) (5) (ix)

For crude oil, a list of the fields or areas from which crude oil is obtained.

Please see Appendix “E”. For additional background please refer to information provided in response to CFR §347.1 (e) (4).

13. Service Life Data Form CFR § 347.1 (e) (5) (x)

If the proposed depreciation rate adjustment is based on the remaining physical life of the properties, a complete, or updated, if applicable, Service Life Data Form (FERC Form No. 73) through the most current year.

As the proposed depreciation rates are based primarily on economic life, updated Service Life Data Forms (FERC Form No. 73) are not required.

14. Estimated Salvage Value CFR § 347.1 (e) (5) (xi)

Estimated salvage value of properties by account.

For purposes of this depreciation study, Enbridge Energy estimates the salvage value to be zero.