

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Complaint by
PKM Electric Cooperative, Inc. Alleging that
Otter Tail Power Company
Has Violated the Exclusive Service Area Provisions
of Minn. Stat. §§ 216B.37 to 216.43

OAH Docket No. 5-2500-32357
MPUC Docket No. E131, 017/C-15-176

SURREBUTTAL TESTIMONY AND SCHEDULES OF

JASON J. WEIERS

Exhibit____

September 11, 2015

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ATTACHED SCHEDULES

Schedule 1 – Map of Current Transmission System

Schedule 2 – Map of Joint Transmission System

Schedule 3 – Map of Transmission System when OTP begins serving Donaldson Facility

Schedule 4 – Map of Transmission System after 1971

Schedule 5 – Map of Transmission System after 1999

Schedule 6 – 1960 Electric Service Agreement

1 **I. INTRODUCTION AND SUMMARY**

2
3 Q. PLEASE STATE YOUR NAME AND POSITION.

4 A. My name is Jason J. Weiers. I am the Manager of Delivery Planning for Otter Tail
5 Power Company (“Otter Tail” or “OTP”).
6

7 Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY IN THIS PROCEEDING?

8 A. Yes. I filed Direct Testimony on behalf of OTP concerning whether OTP or PKM
9 Electric Cooperative, Inc. (“PKM”) should provide high voltage service for additional
10 equipment installed by Enbridge Energy, Limited Partnership (“Enbridge”) at its
11 pumping facility near Donaldson, Minnesota (the “Donaldson Facility”). I will refer to
12 that additional equipment as the “Additional Enbridge Equipment” as I did in my Direct
13 Testimony.
14

15 Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

16 A. The purpose of my Surrebuttal Testimony is to respond to parts of the Rebuttal
17 Testimony of Mr. Michael Hennes, on behalf of PKM Electric Cooperative, Inc.
18 (“PKM”).
19

20 Q. WERE THIS SURREBUTTAL TESTIMONY AND THE ATTACHED SCHEDULES
21 PREPARED BY YOU OR UNDER YOUR SUPERVISION?

22 A. Yes they were.
23

24 Q. PLEASE SUMMARIZE YOUR SURREBUTTAL TESTIMONY.

25 A. My Surrebuttal Testimony will show that the power flows across networked facilities are
26 not an indication of what transmission owner is “serving” a substation. That assertion is
27 incorrect from an engineering and operational perspective. I will also provide additional
28 explanation of how OTP and Minnkota have made investments on the transmission
29 system in proportion to their respective load ratio share within the overlapping service
30 territory. I will explain why it is not appropriate to conclude from the ownership and
31 location of specific facilities alone, which party is “providing service” at any point on the

1 interconnected transmission system. Instead, one needs to focus on the evolution of the
2 transmission system to accurately ascertain why ownership arrangements are what they
3 are today. I have provided a history of that evolution for the Donaldson facilities in my
4 Direct Testimony.

5
6 **II. POWER FLOWS**
7

8 Q. DOES MR. HENNES DISCUSS POWER FLOWS IN HIS REBUTTAL TESTIMONY?

9 A. Yes. Mr. Hennes asserts that power flows show that “the predominant source of power to
10 the Donaldson Substation supplying Enbridge’s facility is actually the Drayton-Donaldson
11 line owned by Minnkota, not the Warsaw-Donaldson transmission line owned by OTP.”
12 (Hennes Rebuttal at 10.) He also suggests that these power flows are significant to the issue
13 of whether OTP should have service rights for the Additional Enbridge Equipment.
14

15 Q. WHAT IS YOUR RESPONSE TO MR. HENNES’ TESTIMONY REGARDING
16 POWER FLOWS?

17 A. I disagree with his characterizations of the significance of those power flows and his
18 suggestion that they are significant in determining who should have service rights to the
19 Additional Enbridge Equipment.
20

21 Q. PLEASE SUMMARIZE YOUR POSITION REGARDING POWER FLOWS.

22 A. In my Direct Testimony, I responded to a claim made in PKM’s response to IR MN-
23 DOC-05 that Minnkota “owns the 115kV transmission line serving the OTP
24 substation.” (See PKM’s response to IR MN-DOC-05, and Weiers’ Direct Testimony at
25 page 19-23). Mr. Hennes’ claims with respect to the power flows on the Drayton-
26 Donaldson line and on surrounding facilities seem to be a reassertion of that claim that
27 Minnkota “owns the transmission line serving the OTP substation.” I strongly disagree
28 with that claim. The power flows across networked facilities are not an indication of
29 what transmission owner is “serving” a substation. That assertion is incorrect from an
30 engineering and operational perspective.
31

1
2 Q. WHAT ASPECTS OF MR. HENNES' REBUTTAL TESTIMONY ON POWER
3 FLOWS DO YOU DISAGREE WITH AND WHY DO YOU DISAGREE?

4 A. There are several aspects of his Rebuttal testimony that I disagree with. For one, his use
5 of the phrase "...predominate source of power to the Donaldson Substation" in reference
6 to the Drayton to Donaldson 115 kV line incorrectly suggests that a certain transmission
7 owner in a set of networked facilities is serving as the "service provider" to a specific
8 substation.

9 Further, the "source of power" referenced by Mr. Hennes also seems to infer that
10 the power flowing along the Drayton-Donaldson line is generated by Minnkota
11 generating units or supplied on some kind of point-to-point service basis, but that is not
12 the case. To the contrary, all generators injecting power into, and all loads being served
13 from the networked facilities are causing flows across the entire network. It would be a
14 misinterpretation to conclude from the flows data cited by Mr. Hennes that those flows
15 somehow indicate Minnkota or the Donaldson-Drayton line is solely serving the OTP
16 Substation.

17
18 Q. WHAT IS A CORRECT CHARACTERIZATION OF THE POWER FLOW DATA
19 PROVIDED BY MR. HENNES?

20 A. A correct characterization regarding flows at this point on the system would be as
21 follows:

22 "...the predominate direction of flow in the Donaldson area is generally from the
23 230 kV facilities, west of Donaldson, which are interconnected to the 115 kV
24 facilities near Donaldson by the Drayton-Donaldson line, which was constructed
25 and installed by Minnkota as part of a large and coordinated 230 kV and 115 kV
26 transmission build out project that occurred in 1971 which was intended to
27 improve the operation of the entire transmission network in the larger region for
28 the benefit of all loads served by all of the involved entities--including Minnkota,
29 OTP, Northern States Power Company and Manitoba Hydro Electric Board..."

1 That larger transmission project is described in my Direct Testimony. (Weiers Direct
2 Testimony at Page 13-20 and Schedule 6). I will also provide some additional details on
3 that project a bit later in this Surrebuttal Testimony.
4

5 Q. IF THE FLOWS ACROSS THE DRAYTON-DONALDSON LINE AND THE OTHER
6 115 KV FACILITIES IN THE AREA ARE NOT ATTRIBUTABLE TO MINNKOTA,
7 TO WHAT ARE THEY ATTRIBUTABLE?

8 A. The flows are a consequence of all of the complex relationships occurring between all of
9 the generation facilities and all of the loads and all of the transmission facility paths that
10 may be available on the system. Power flows on a large complex interconnected
11 transmission network function something like wind in a weather system that will
12 generally move from points of high pressure to points of low pressure while taking the
13 path of least resistance in its effort to achieve an equilibrium.
14

15 By isolating a specific segment in a complex networked system, one cannot conclude that
16 the flows are being caused only by some relationship between the two end points of that
17 segment. Flows across any given segment are being caused by the myriad of
18 relationships that are occurring between numerous points on the network, many of which
19 are distant from the two points of that segment (in this instance, points that include
20 generators in the Dakotas and Canada and loads to the south and east of Donaldson and
21 the numerous networked facilities between all the points at which generation is injected
22 and loads are served, many of which are not owned by either OTP or Minnkota).
23

24 Q. DOES MR. HENNES' REBUTTAL SEEM TO RECOGNIZE THAT AN
25 INTERCONNECTED NETWORK WILL BENEFIT ALL POINTS ON THE
26 NETWORK?

27 A. Yes. Mr. Hennes makes some clarifications in his Rebuttal Testimony regarding the
28 planning and operation of interconnected transmission facilities that seem to be in
29 agreement with what I explained in my Direct Testimony—specifically, that when
30 transmission facilities evolve into a set of networked facilities, all additions to the
31 network have a beneficial impact on all points on the network. My Direct Testimony,

1 starting on page 12, includes a discussion of how joint planning and investments have
2 been made by OTP and Minnkota under an Integrated Transmission Agreement (“ITA”)
3 and how those investments have evolved into a complex set of integrated networked
4 facilities.

5
6 Q. MR. HENNES’ ALSO DISCUSSED THE RELATIVE AMOUNT OF TIME THAT
7 THE FLOWS ARE MOVING IN DIFFERENT DIRECTIONS. WHAT IS THE
8 SIGNIFICANCE OF THAT RELATIONSHIP?

9 A. That relationship has no significance in determining which transmission facilities are
10 “serving” any particular point on the system, but it does help to further illustrate my
11 point. In his Rebuttal Testimony, Mr. Hennes states that the direction of flow on the OTP
12 owned line from Warsaw to Donaldson has occurred 5% to 10% of the time during 2015
13 which further illustrates the networked nature of the transmission facilities within the
14 Donaldson area, and it reflects that the flows on this line and all other networked lines are
15 a consequence of many things occurring on the entire networked system, including the
16 various generators that may be operating at all points on the network and all of the loads
17 that may be consuming power at all points on the network. If Mr. Hennes is implying
18 that this data suggests that Minnkota is serving the substation most of the time and OTP
19 is serving it just part of the time, that would be a gross inaccuracy and
20 mischaracterization of the power flows data.

21
22 Q. PLEASE SUMMARIZE YOUR RESPONSE TO MR. HENNES’ REBUTTAL
23 TESTIMONY REGARDING THE SIGNIFICANCE OF POWER FLOWS.

24 A. The power flow information included in Mr. Hennes’ Rebuttal Testimony is neither
25 significant in the evaluation of which transmission facilities are “serving” the Donaldson
26 Substation, nor is it surprising given that these facilities are part of the larger networked
27 system and given the fact that there is a 230 kV transmission connection at Drayton. As
28 explained above, the flows across networked facilities are not an indication of what
29 transmission owner is “serving” a substation that is part of a large complex transmission
30 network. That would be an incorrect assertion from an engineering and operational
31 perspective. To the extent that Mr. Hennes’ Rebuttal Testimony claims (with respect to

1 the flows on the Drayton-Donaldson line and on surrounding facilities) are a reassertion
2 of PKM's prior claim that it "owns the transmission line serving the OTP substation," I
3 strongly disagree with that claim.
4

5 **III. THE 1962 INTEGRATED TRANSMISSION AGREEMENT**
6

7 Q. DID MR. HENNES DISCUSS THE INTEGRATED TRANSMISSION AGREEMENT
8 FIRST ENTERED IN 1962 BETWEEN OTP AND MINNKOTA ("1962 ITA")?

9 A. Yes. Mr. Hennes Rebuttal Testimony includes an extended discussion of the 1962 ITA
10 and makes a number of claims with which I disagree. (Hennes Rebuttal at 5-14). I will
11 explain OTP's position on a number of these issues in this section of my Surrebuttal
12 Testimony.
13

14 Q. WHAT ARE THE KEY POINTS TO UNDERSTANDING THE DIFFERENCES
15 BETWEEN MR. HENNES' POSITIONS AND OTTER TAIL'S POSITIONS.

16 A. The 1962 ITA was an agreement to coordinate investments and to share the costs of those
17 investments based on the relative loads served by OTP and Minnkota. Those relative
18 loads are sometimes referred to as "load shares" or "relative load shares." The 1962 ITA
19 did not reflect any intention that investments would expand retail service rights beyond
20 otherwise existing rights.
21

22 **A. Operation of the ITA**

23 Q. DOES IT APPEAR YOU AND MR. HENNES ARE GENERALLY IN AGREEMENT
24 ON THE NATURE OF THE BENEFIT OF THE 1962 ITA BETWEEN MINNKOTA
25 AND OTTER TAIL?

26 A. Yes, we appear to be generally in agreement on benefit. As I explained in my Direct
27 Testimony (Page 13, lines 21-23), the original 1962 ITA (and subsequent amendments)
28 have provided a contractual vehicle for OTP and Minnkota to develop a comprehensive
29 framework of transmission facilities for the efficient and economic development of their
30 respective systems. Mr. Hennes agreed with this description of the 1962 ITA on Page 5,
31 Lines 3-8 of his Rebuttal Testimony.

1
2 Q. HAVE OTP AND MINNKOTA ACHIEVED THE BENEFITS FROM THE 1962 ITA
3 THAT WERE ANTICIPATED?

4 A. Yes. OTP and Minnkota have collaborated on the efficient and economic development of
5 the transmission system within their overlapping service territories based on the
6 guidelines in the ITA. As a result, OTP and Minnkota have made investments on the
7 transmission system in proportion to their respective load ratio share within their
8 overlapping service territories. Through the last 50+ years, a jointly developed
9 transmission system with discrete ownership is now in place throughout the overlapping
10 service territories. If an ITA had not been in place, I expect there would have been
11 significant duplication of facilities and investments in this area. Avoiding this
12 duplication of investment has greatly reduced transmission costs for both OTP and
13 Minnkota.
14

15 Q. YOU DESCRIBE THE SYSTEM “JOINTLY DEVELOPED WITH DISCRETE
16 OWNERSHIP.” WHAT DOES THAT MEAN?

17 A. The description “jointly developed with discrete ownership” means that OTP and
18 Minnkota plan the system jointly, but we don’t own the facilities we construct in a joint
19 ownership arrangement. Instead, we own various segments of line and other facilities
20 discretely, meaning we have 100 percent ownership of specific facilities, rather than a
21 partial interest in all of the facilities.
22

23 Q. IN YOUR DIRECT TESTIMONY, YOU SAID THAT THE ITA USES A LOAD-
24 RATIO-SHARE APPROACH TO ALLOCATING COSTS OF ITA FACILITIES.
25 HOW DOES THAT WORK WITH DISCRETE, 100 PERCENT OWNERSHIP IN
26 SPECIFIC FACILITIES?

27 A. Coordinating these two concepts results in the OTP and Minnkota making determinations
28 of which particular facilities each will own based upon a balancing of the investments,
29 not based on specific delivery points or paths that each party is trying to establish. This
30 has resulted in something of a patchwork of ownership across the system. This
31 patchwork doesn’t only involve OTP and Minnkota, as we each have made other similar

1 arrangements for ownership of facilities in this region with several other entities.

2
3 Q. DO YOU HAVE AN EXAMPLE OF HOW THIS DISCRETE OWNERSHIP APPEARS
4 IN NORTHWEST MINNESOTA AND THE AREA OF THE OTP SUBSTATION
5 THAT SERVES THE DONALDSON FACILITY?

6 A. Yes. Exhibit _(JJW-3), Schedule 1 illustrates several aspects of the current transmission
7 system in northwest Minnesota, including the voltage level of the transmission facilities
8 along with the corresponding ownership of facilities. As can be seen on this schedule,
9 the transmission system is a patchwork of transmission facilities operating together in a
10 coordinated fashion to deliver energy to all customers on the system with non-
11 contiguous, discrete ownership.

12
13 **B. Limitations of the ITA**

14 Q. DOES OWNERSHIP OF A TRANSMISSION FACILITY DICTATE WHO PROVIDES
15 RETAIL SERVICE TO A PARTICULAR LOAD OR AREA?

16 A. No, the 1962 ITA allows for joint usage rights on the OTP and Minnkota owned facilities
17 thereby not making it necessary for a retail service provider to own the transmission line
18 that connects to any given substation that serves load.

19
20 Q. DOES THE OWNERSHIP ARRANGEMENT OF THE TRANSMISSION SYSTEM
21 UNDER THE ITA GIVE EACH PARTY A RIGHT TO SERVE ALL CUSTOMERS IN
22 THE REGION OR ENGAGE IN SOME FORM OF RETAIL COMPETITION?

23 A. No. If the ITA was to be used to facilitate a competitive bidding approach to serving
24 retail customers, it would have a serious detrimental effect on the parties' willingness to
25 cooperatively plan and develop joint projects under the ITA. The ITA makes specific
26 reference that the purpose of the ITA is to facilitate service to each party's respective
27 loads at the lowest overall cost. Also, the 1962 ITA was executed very close in time to
28 the 1960 Statements that OTP signed with Minnkota's distribution cooperatives,
29 including PKM. These facts indicate that the parties had an expectation that the joint
30 nature of their ITA projects would not be used to create confusion as to who would serve
31 retail customers. Without that expectation, I believe that the ITA and its approach to

1 joint planning and development of transmission projects would not have been acceptable
2 to the two parties.

3
4 Q. HOW LARGE IS THE GEOGRAPHIC AREA ENCOMPASSED BY THE 1962 ITA?

5 A. The geographic area encompassed by the 1962 ITA is reflective of the overlapping
6 service territory between OTP and Minnkota and spans an area of nearly 750 square
7 miles in northeastern North Dakota and northwestern Minnesota, as shown in Exhibit _-
8 (JJW-3), Schedule 2.

9
10 Q. ARE OWNERSHIP ARRANGEMENTS THROUGH OTHER AREAS OF
11 OVERLAPPING SERVICE TERRITORY COMMON IN NORTHWESTERN
12 MINNESOTA?

13 A. Yes. Discrete, non-contiguous ownership of transmission facilities between OTP and
14 Minnkota is common throughout the entire area of the overlapping service territory
15 encompassed by the 1962 ITA.

16
17 Q. DOES OWNERSHIP OF TRANSMISSION FACILITIES INDICATE THE SERVICE
18 PROVIDER TO ANY GIVEN LOCATION IN OTHER PARTS OF THE
19 OVERLAPPING SERVICE TERRITORY?

20 A. No. Similar to the Donaldson Substation, one needs to focus on the evolution of the
21 transmission system to accurately ascertain why ownership arrangements are what they
22 are today. I provide a history of that evolution for the Donaldson facilities in my Direct
23 Testimony.

24
25 **C. History of Transmission Investments.**

26 Q. WHAT WAS THE INITIAL CONFIGURATION OF THE TRANSMISSION SYSTEM
27 WHEN OTP BEGAN 115 KV SERVICE TO ENBRIDGE AT DONALDSON?

28 A. The transmission system at that time included a transmission line from the Winger
29 Substation to the Donaldson substation with both OTP and Minnkota ownership along
30 this radial transmission path. I have included an Exhibit _-(JJW-3), Schedule 3 showing a
31 map of the facilities that existed at that time.

1
2 Q. WHAT WAS THE NEXT WAVE OF SIGNIFICANT TRANSMISSION
3 INVESTMENT IN NORTHWEST MINNESOTA THAT SUPPORTED THE
4 MINNKOTA AND OTP LOAD IN NORTHWESTERN MINNESOTA?

5 A. Although there appears to be other transmission facilities constructed between 1962 and
6 1966, the next wave of significant transmission investments in Northwestern Minnesota
7 occurred between 1969 and 1971. Based on historical records researched within Otter
8 Tail, the 230 kV transmission system around the southwestern edge of northwest
9 Minnesota was constructed during this time with new 230 kV interconnections
10 introduced at Winger, Grand Forks (Prairie), and Drayton.

11
12 The 230 kV interconnection and transmission project that interconnected at Drayton was
13 referenced in my direct testimony on Page 19 and was accompanied by a new 115 kV
14 line from Drayton to Donaldson. This project involved significant 230 kV facilities in
15 collaboration between OTP, Minnkota, Northern States Power Company, and the
16 Manitoba Hydro Electric Board, with Minnkota also assigned the obligation to construct
17 a 115 kV line from Drayton to Donaldson. Exhibit _-(JJW-3), Schedule 4 illustrates the
18 230 kV and 115 kV facilities as they existed after 1971.

19
20 Q. PLEASE EXPLAIN THE SIGNIFICANCE OF EACH PARTIES' OWNERSHIP IN
21 SPECIFIC LINE SEGMENTS OF THAT PROJECT, AND WHETHER THAT
22 OWNERSHIP INDICATES ANYTHING ABOUT ITS RETAIL SERVICE RIGHTS
23 OR OBLIGATIONS?

24 A. Based on my understanding of this project, it appears each party was allocated
25 accountability for a segment based upon its financial responsibilities determined through
26 project agreements and not based on any particular retail service rights or obligations.
27 The result of this allocation of ownership was that Minnkota and OTP's particular
28 segments were assigned more or less arbitrarily from a geographic stand point, and
29 instead the purpose of the allocations was to arrive at a proportionate share of investment
30 for each party for the entire project.

1 Q. DOES THIS PROJECT ALLOCATION RELATE TO MR. HENNES' CLAIMS
2 ABOUT FLOWS ON THE DRAYTON TO DONALDSON LINE?

3 A. Yes. Mr. Hennes makes the claim that the flows across that line suggest that Minnkota is
4 "the predominant source of power" to the OTP Substation at Donaldson based upon his
5 power flows research. I have discussed earlier in this Surrebuttal Testimony why that
6 power flow research doesn't support his statement, at least if it is meant to suggest that
7 Minnkota is "serving" OTP's Donaldson substation. This project allocation shows that
8 Minnkota came to own the Drayton to Donaldson line segment as its allocated share of
9 this larger 230/115 kV project—not because of some particular need or desire to invest in
10 a specific path for its own energy deliveries to Donaldson. This further shows that
11 Minnkota's ownership of the Drayton to Donaldson line doesn't indicate that PKM
12 should have some kind of superior claim of right to serve the Additional Donaldson
13 Equipment.
14

15 Q. WHEN WERE THE REST OF THE TRANSMISSION FACILITIES IN NORTHWEST
16 MINNESOTA CONSTRUCTED AND WHAT IS THE CONFIGURATION OF THE
17 EXISTING TRANSMISSION SYSTEM IN NORTHWEST MINNESOTA?

18 A. Again, based on historical records researched within OTP, it appears that the existing
19 115 kV system between Thief River Falls and Donaldson was connected with an easterly
20 115 kV transmission path between 1972 and 1975 with Minnkota and OTP taking
21 ownership responsibilities for different portions of the overall transmission path. By
22 1975, the entire transmission system within Northwest Minnesota was networked
23 together with the regional transmission system. Lastly, the Oslo – Thief River Falls 115
24 kV line was constructed around 1999 creating a new east-west transmission path between
25 the western side and eastern side of the overall 115 kV loop in northwest Minnesota.
26 Exhibit _-(JJW-3), Schedule 5 illustrates the 230 kV and 115 kV facilities as they existed
27 after 1999.
28

29 Q. WHY DID MINNKOTA CONSTRUCT A SECOND AND THIRD TRANSMISSION
30 LINE FROM THE DONALDSON SUBSTATION?

31 A. These lines were constructed by Minnkota for different reasons, as explained at pages

1 19-20 of my Direct Testimony. The western line from the Donaldson Substation was
2 built as part of a larger 230 kV construction and interconnection project between four
3 electric providers: OTP, Minnkota, Northern States Power, and the Manitoba Hydro
4 Electric Board. As part of this larger 230 kV project, the overall project was intended to
5 improve the operation of the entire transmission network in the larger region for the
6 benefit of all loads served by all of the involved entities. The eastern line from the
7 Donaldson Substation was constructed to improve Minnkota's power supply to areas
8 approximately 20 miles east of the OTP Substation. Neither of these facility
9 interconnections were driven by a 115 kV retail service need by PKM out of OTP's 115
10 kV Donaldson Substation.

11
12 Q. WHAT WAS THE SIGNIFICANCE OF THESE TWO LATER TRANSMISSION
13 LINES CONSTRUCTED BY MINNKOTA?

14 A. The construction of these two later transmission lines created a networked transmission
15 system by establishing a connection at OTP's Donaldson Substation of three separate
16 transmission lines. Once these transmission lines were networked, flows on the
17 transmission system become subject to several external factors and variables of the
18 overall transmission system as explained in further detail earlier in this Surrebuttal
19 Testimony.

20
21 Q. WOULD THE OTP SUBSTATION AT DONALDSON HAVE BEEN BUILT AT THIS
22 LOCATION IT WAS IF IT WASN'T FOR ENBRIDGE?

23 A. Contrary to what Mr. Hennes states on page 11 of this Rebuttal Testimony, Enbridge was
24 the first retail customer in the area that required a service extension from the 115 kV
25 transmission system. As a result, OTP extended a transmission facility to Donaldson in
26 order to serve the Enbridge load in 1962. OTP was required to extent a transmission
27 facility under the 1960 Electric Service Agreement, a copy of which is attached as
28 Exhibit _-(JJW-3), Schedule 6. After 1962, when future retail service needs drove the
29 need for future facilities, these needs in the area were met by extending new transmission
30 facilities from the existing Donaldson Substation since it was much cheaper to build new
31 transmission lines to individual load delivery points rather than build new high voltage

1 substation, such as the one located at Donaldson. Therefore, OTP's 115 kV Donaldson
2 Substation was initially installed at its current location due to the needs of Enbridge's
3 Donaldson Facility and further as further needs for retail service had grown. If it wasn't
4 for Enbridge's needs back in 1962, based upon my experience and expertise, it is my
5 opinion that the OTP Substation at Donaldson would not have been built in its current
6 location.

7
8 **D. Effect of ITA on Overall Economic Impact**

9 Q. DO YOU AGREE THAT THE 1962 ITA WOULD RESULT IN BALANCED
10 INVESTMENTS BETWEEN OTP AND MINNKOTA OVER TIME IF PKM WAS
11 CHOSEN TO SERVE THE ADDITIONAL ENBRIDGE EQUIPMENT?

12 A. I agree that the ITA mechanism would balance the levels of transmission system
13 investments between OTP and Minnkota, but I disagree with his suggestion that this
14 would somehow neutralize the total economic impact, or leave OTP customers
15 unharmed. Mr. Prazak and Mr. Brause explain in greater detail the economic
16 consequences on OTP customers of such an outcome, which involves far more than
17 investment levels.

18 From the ITA perspective, however, I can say that such a "rebalancing" as Mr. Hennes
19 suggests would be an inappropriate outcome, given that OTP has made investments and
20 evolved with this customer for over 50 years.

21
22 **E. Facilities Needed to Serve the Additional Enbridge Equipment**

23 Q. DOES THE INSTALLATION OF A SECOND SUBSTATION AND TRANSMISSION
24 LINE CHANGE MAKE THE ADDITIONAL ENBRIDGE EQUIPEMENT A
25 SEPARATE FACILITY?

26 A. No. Enbridge needed to increase its transformer capacity to accommodate the load
27 associated with the New Enbridge Equipment. That additional transformer capacity
28 could take the form of an upgrade to existing transformers or the installation of new
29 transformers. Further, the additional transformer capacity needed to be located in close
30 proximity to the Additional New Enbridge Equipment to address voltage drop and other
31 issues. There was no location within the existing Donaldson Facility where Enbridge

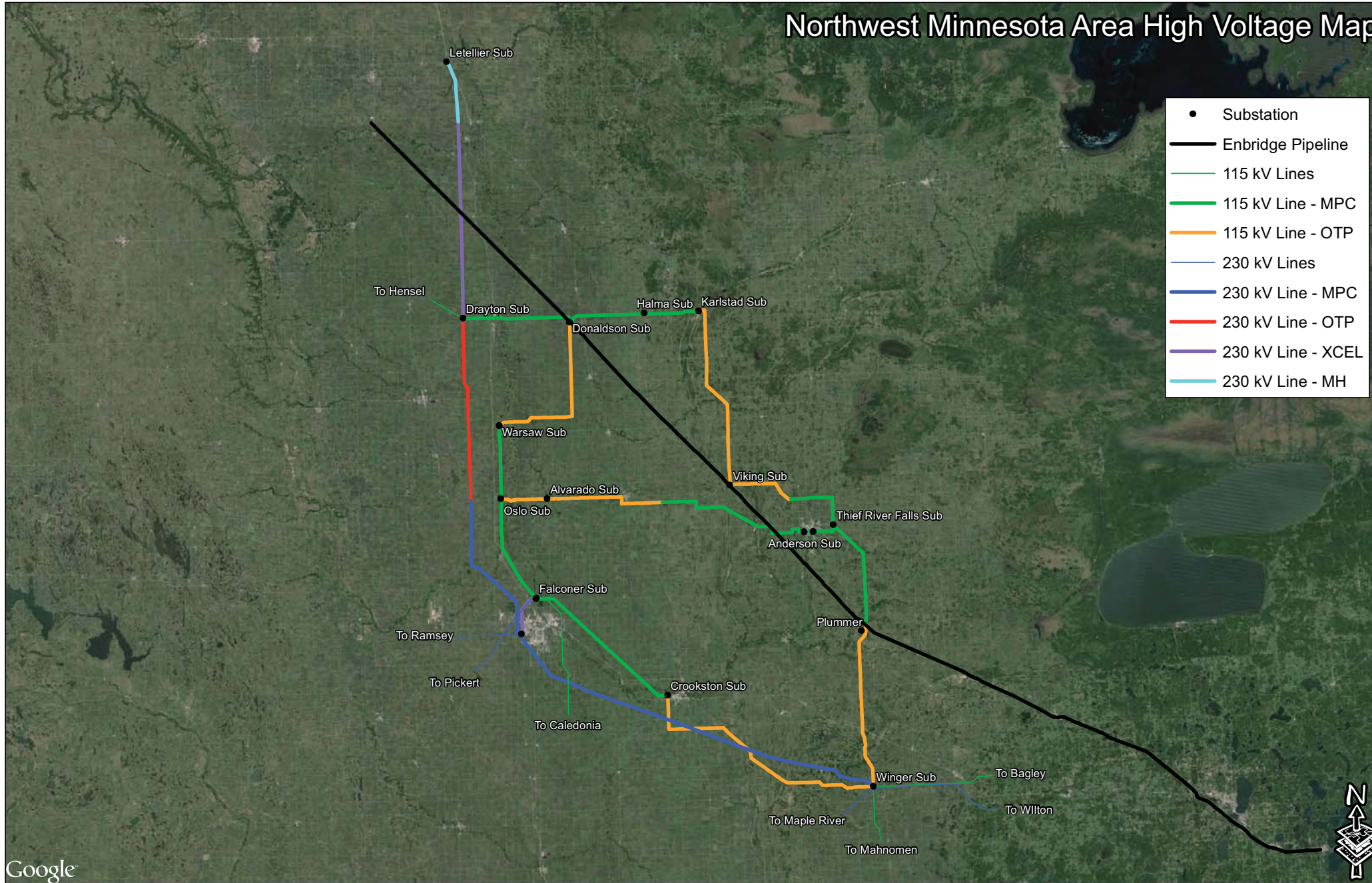
1 could locate additional transformer capacity in close enough proximity to the New
2 Enbridge Equipment. Therefore, the New Enbridge Equipment required the addition of a
3 second substation. That substation needed to be served at 115 kV, meaning a second line
4 was required. If the existing portion of the Donaldson Facility had been more expansive,
5 or the Enbridge Substation had been located in a different part of the Donaldson Facility,
6 then it is possible Enbridge could have increased the transformer capacity to serve the
7 Additional Enbridge Equipment without installing a second substation or a second
8 transmission line.

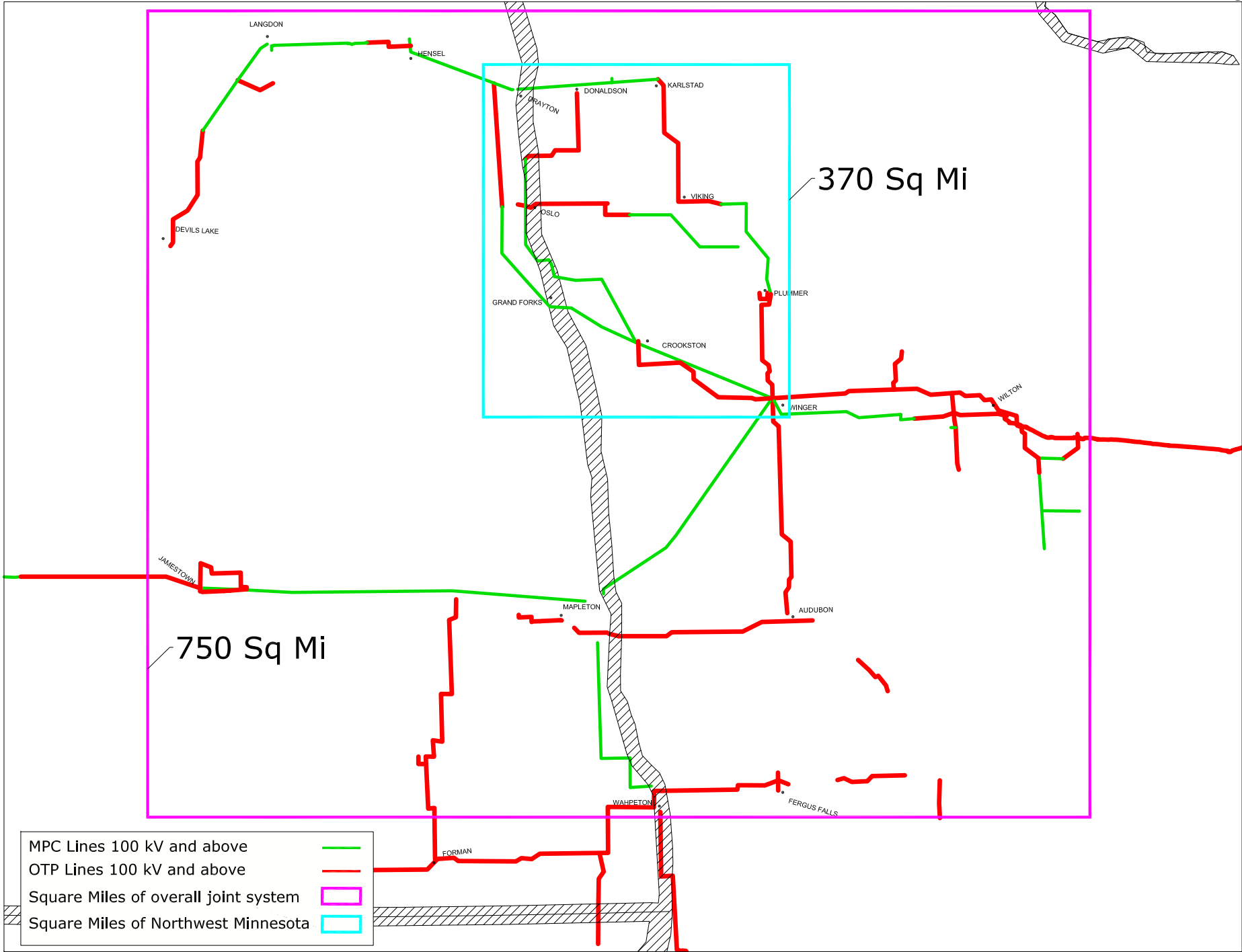
9
10 **IV. CONCLUSION**

11
12 Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

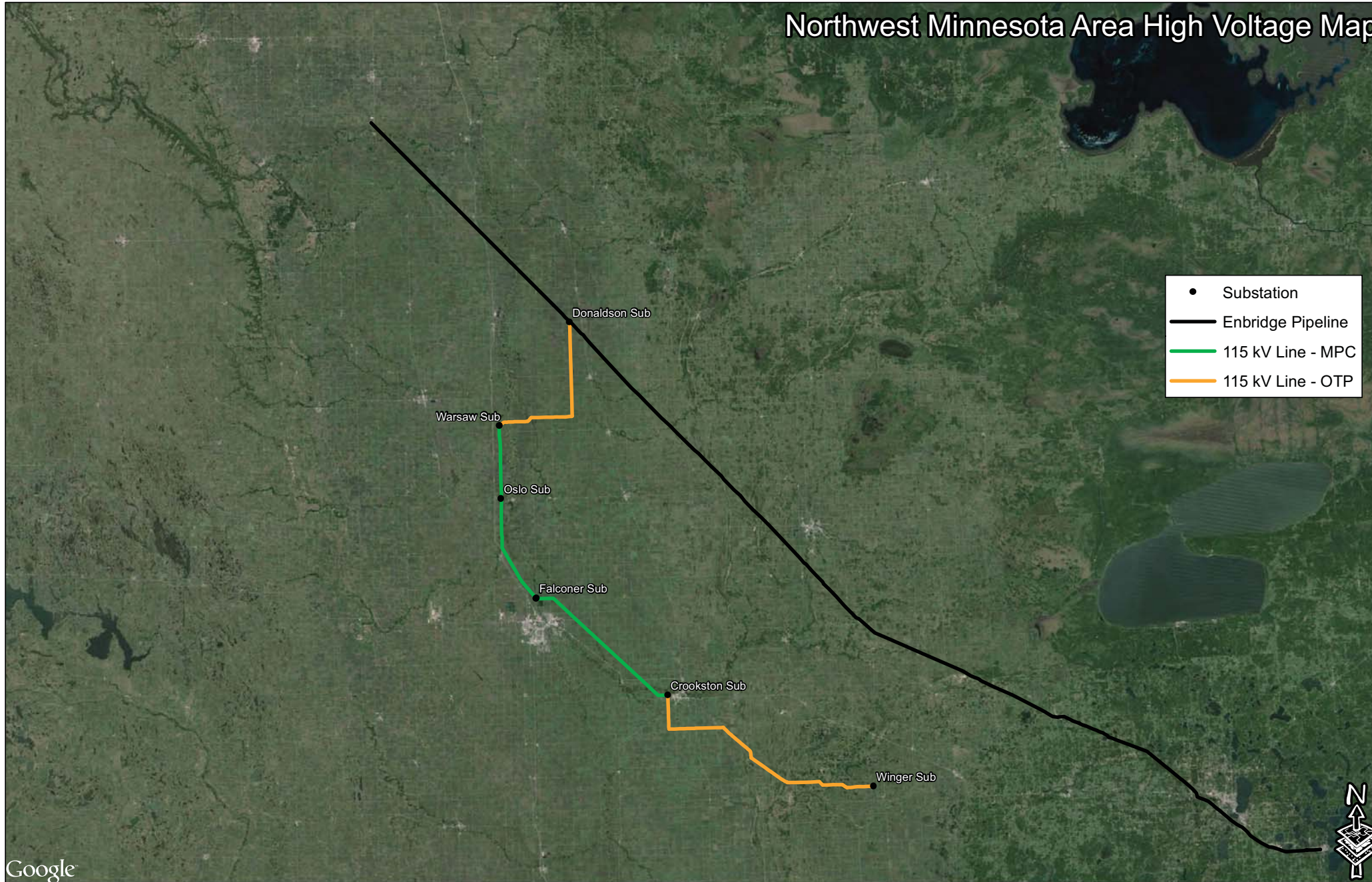
13 A. Yes, it does.

Northwest Minnesota Area High Voltage Map

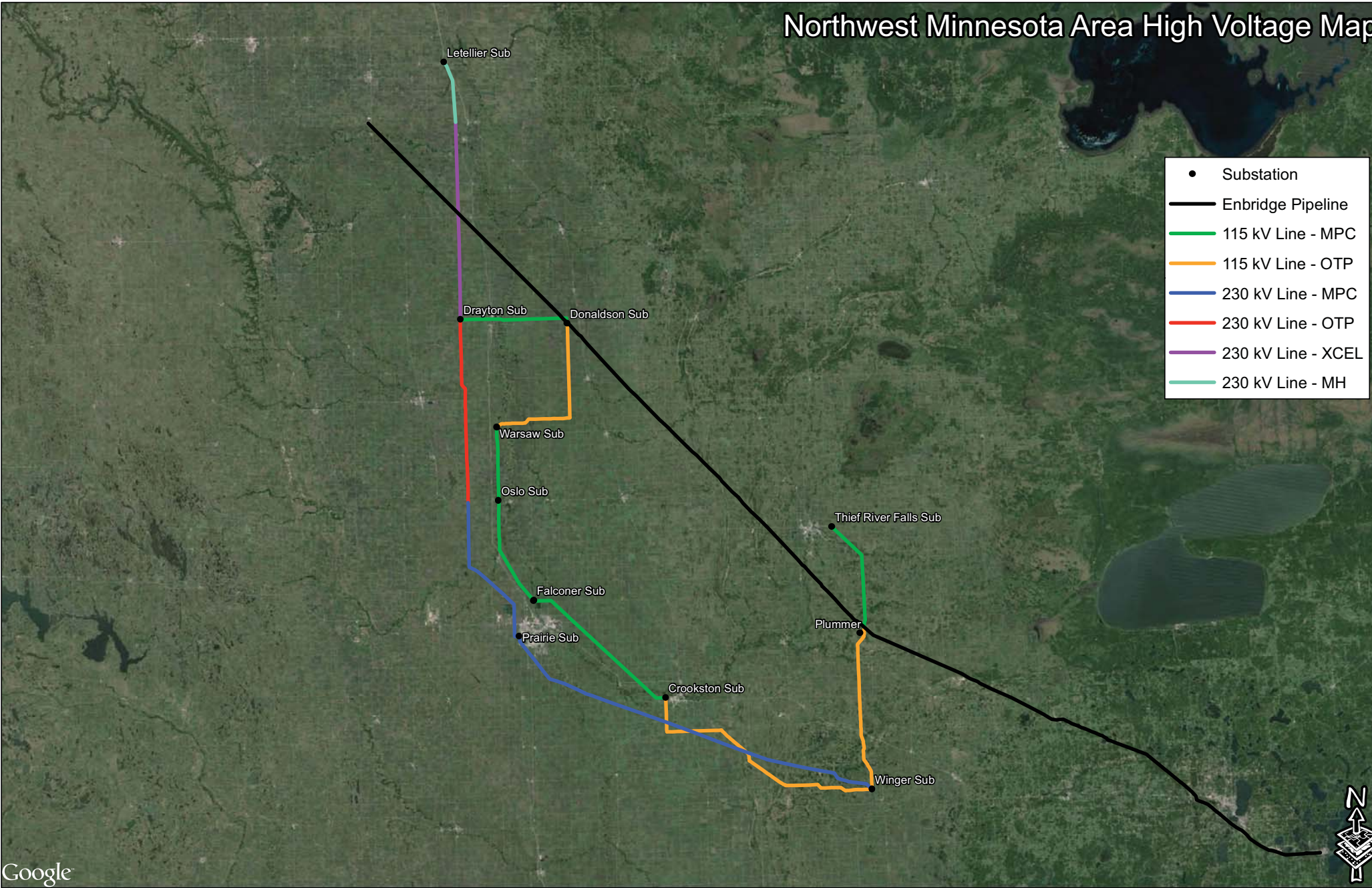




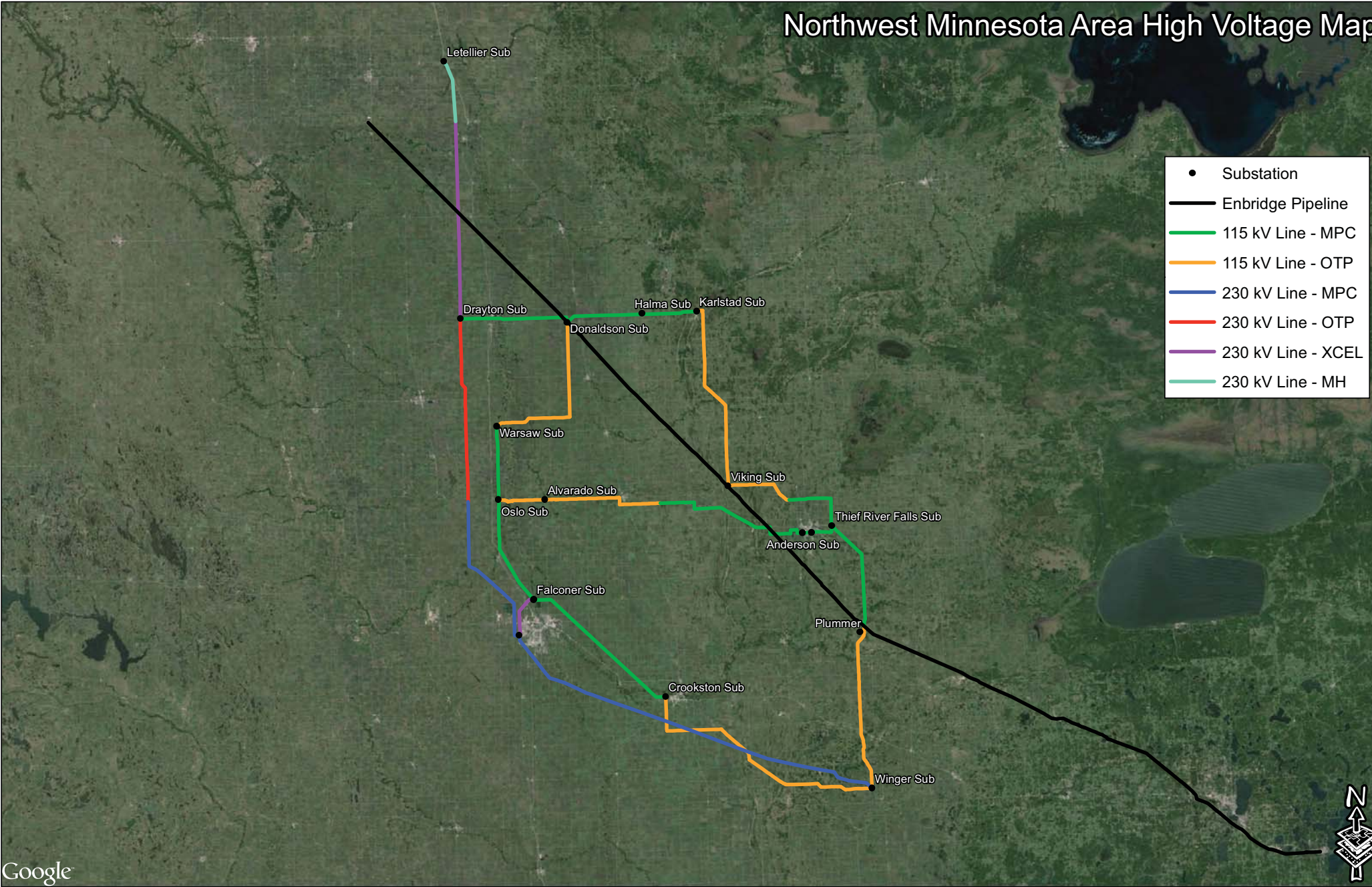
Northwest Minnesota Area High Voltage Map



Northwest Minnesota Area High Voltage Map



Northwest Minnesota Area High Voltage Map



Box 34116

SERVICE AGREEMENT

#41441

1. This Agreement made this 9th day of March, 1960, by and between OTTER TAIL POWER COMPANY, a Minnesota corporation, whose post office address is Fergus Falls, Minnesota, hereinafter called "Otter Tail" and Lake Head Pipe Line Company, Inc., whose post office address is Superior, Wisconsin, hereinafter called the "Purchaser," Witnesseth:

2. In consideration of the covenants and agreements to be kept and performed and the charges to be paid by the Purchaser as hereinafter set forth and subject to the conditions contained in this Agreement, Otter Tail agrees to furnish and the Purchaser agrees to take and pay for all electric energy required by the Purchaser for use at its Donaldson pumping station located in Section 23, Township 159 N., Range 49 W., in Kittson County, Minnesota.

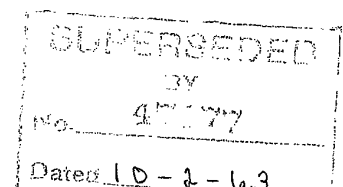
3. Otter Tail has reviewed the general plans and specifications of the proposed motor load and electrical installation and agrees thereto. Purchaser agrees to review future changes in the electrical motors with Otter Tail before changes are made.

4. The electrical energy supplied by Otter Tail shall be three phase, nominally 4160 volts between conductors and 60 cycles. It shall be measured at this voltage. Recording kva demand and kwh meters furnished by Otter Tail shall be installed on Purchaser's metal clad switchgear on space provided by Purchaser. ~~The electrical energy shall be delivered by Otter Tail to the Purchaser at the 4160 volt terminals of Otter Tail's step down substation.~~

5. In case of failure of the meters to properly record the kva demand or energy used, an estimated charge shall be made for kva demand and energy used during the period in question, which shall be based on a comparison of kva demand or energy used during other similar periods or from the best information available.

6. Otter Tail will make its billings and the Purchaser agrees to pay for electric energy on the basis of the following rates:

Rate Schedule No. 6776, and the General Rules and



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Regulations which are a part thereof, which are included in, are attached hereto, and become a part of the Agreement, except for revisions as follows:

RATE: \$1.50 per kva per month of billing demand.

PLUS: First 5,000 kwh used per month at 3 ¢ per kwh.
Next 5,000 kwh used per month at 2.5¢ per kwh.
Next 190,000 kwh used per month at 1.6¢ per kwh.
All over 200,000 kwh used per month at 1.2¢ per kwh.

The load factor, primary metering and primary service discounts apply as specified under said Rate No. 6776.

A special credit of \$.15 per kva of billing demand will apply if service is taken at transmission line voltage and Purchaser owns the step-down transformer and substation.

7. Payments--Meters will be read by Otter Tail during the last five days of each calendar month. It shall be the option of the Purchaser to have a representative present for check readings. Otter Tail will at Purchaser's request, furnish copies of kva demand and kwh recordings used for billing purposes.

Bills will be rendered to the Purchaser at its Superior, Wisconsin, offices within five days after the meters are read. Bills will become delinquent ten days after the bill is rendered.

8. ~~Otter Tail agrees to construct, own, maintain and operate a transformer substation to reduce the voltage from its transmission line voltage to approximately 4160 volts. This transformer substation shall contain transformers of an aggregate of 3750 kva capacity and necessary associated equipment. It shall be constructed at a point near the pumping station as mutually agreed between the parties hereto.~~

9. The Purchaser hereby grants to Otter Tail permission to construct, operate and maintain a substation, transmission lines and other appurtenances, in a manner and location mutually agreed upon, upon the Purchaser's premises as referred to above. If, during the term hereof, the Purchaser's use of said premises makes necessary the removal of Otter Tail's facilities from the site originally furnished to another site on the said premises,

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Otter Tail shall remove and relocate the same at the Purchase's request and the Purchaser shall reimburse Otter Tail for the cost thereby incurred.

Upon termination of this contract, subject to any extensions thereof as provided for in Clause 13, Otter Tail shall, within 90 days after such date of termination, remove all of its facilities from the premises of the Purchaser at Otter Tail's sole cost and expense and shall leave the subject premises in as good condition, ordinary wear and tear excepted, as they were prior to the construction or installation of such facilities.

Otter Tail, its agents and employees, shall have full right and authority of ingress and egress at all times on and across said premises of the Purchaser for the purpose of constructing, operating, maintaining, replacing, repairing, moving and removing its said facilities. Said right of ingress and egress, however, shall not unreasonably interfere with the use of the Purchaser's said premises.

10. (a) Otter Tail shall not be held responsible for any damage, injury, fatality or loss occasioned by interruption or of diminutions in the supply of electric power.

(b) Each party hereto shall indemnify and save harmless the other party from and against any and all claims for injuries and damages in favor of any person, persons or corporations founded upon or arising from the negligence of the indemnitor or its employees, agents or others acting in its behalf.

Should an action be brought against either of the parties hereto and such party shall claim that the other party shall indemnify and save it harmless therefrom by reason of the provisions of this article contained, the party making such claim shall notify the other party in writing of such action and claim, and the party so notified shall thereupon have the right, at its own cost and expense, to appear in and defend such action in the name of the party against whom it is brought or compromise the same.

(c) It is understood and agreed that both parties shall erect and maintain their respective facilities in accordance with good engineering

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practice and in full accordance with the laws of the State of Minnesota.

11. Bills for electric service shall be payable within ten days of the specified billing date. In the event that payment is not made at the time specified, Otter Tail reserves the right to discontinue service for non-payment of the bill, after fifteen days after giving written notice to the Purchaser of its intention to discontinue service.

12. Otter Tail shall not be liable to the Purchaser nor shall the Purchaser be liable to Otter Tail hereunder, by reason of the failure of Otter Tail to deliver, or the Purchaser to receive, electric energy as the result of fire, strike, riot, explosion, flood, accident, breakdown or acts of God, or the public enemy, or other acts beyond the control of the party affected, it being the intention of each party to relieve the other of the obligation to supply energy or to receive and pay for energy when, as a result of the above mentioned causes or any of them, either party may be unable to deliver or use in whole or in part the electrical energy herein contracted for, both parties shall be prompt and diligent in removing and overcoming the cause or causes of such interruption.

In case of a deficiency of electric service supplied by Otter Tail due to any cause beyond its control, the Purchaser shall be entitled to share alike with other customers of Otter Tail.

13. This Agreement shall go into effect as and from either (i) the first day of normal operation of the main electric pump units, or (ii) the ~~1st day of January, 1961~~ whichever is the earlier, and shall remain in full force and effect from such date for five years and thereafter shall remain in effect from year to year until cancelled by either party by notice in writing at least twelve months prior to the date of termination specified in such notice.

14. This Agreement may be revised by mutual agreement of the parties hereto on any anniversary of the effective date.

15. Any notices addressed to the Purchaser shall be mailed to the

Lakehead Pipe Line Company, Superior, Wisconsin.

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16. This Agreement shall be subject to all present and future applicable Regulatory Laws.

In Witness Whereof, on the day and year first above written, the Parties hereto have caused their names to be subscribed by their officers, thereunto duly authorized.

In the Presence of

Leila J. Carque
Jean E. Bjoelgo

A. C. Hoffman
W. C. Cochran

OTTER TAIL POWER COMPANY

By Albert V. Smith
Executive Vice President

LAKEHEAD PIPE LINE COMPANY, INC.

By R. E. Drammell
Title General Manager

By W. H. Place
Title Assistant Secretary