

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

In the Matter of the Application of
Minnesota Power for a Certificate of Need for
the HVDC Modernization Project in
Hermantown, Saint Louis County;

In the Matter of the Application of
Minnesota Power for a Route Permit for a
High Voltage Transmission Line for the
HVDC Modernization Project in
Hermantown, Saint Louis County.

**OAH 5-2500-39600
MPUC E-015/CN-22-607
MPUC E-015/TL-22-611**

DIRECT TESTIMONY OF AMY LEE

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, employer, title, and business address.

A. My name is Amy Lee. I am employed by ATC Management, Inc., the corporate manager of American Transmission Company LLC (collectively, ATC). My job title is Principal Environmental and Regulatory Advisor, and my office is located at 2485 Rinden Road, Cottage Grove, Wisconsin.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of ATC in support of the Arrowhead Substation Alternative that ATC has presented as a modification to the new St. Louis County Substation Minnesota Power (MP or Applicant) is proposing to construct as part of the High Voltage Direct Current (HVDC) Modernization Project (Project).

Q. Please describe your educational and professional background as it relates to this proceeding.

1 A. I received a Bachelor of Arts degree in Biology from Gustavus Adolphus College in 1996.
2 After college, I worked for the Minnesota Pollution Control Agency as a Pollution Control
3 Specialist from 1998 to 2000. In 2003, I received a Master of Science Degree in Urban and
4 Regional Planning from the University of Wisconsin-Madison. I became an ATC employee
5 in 2004 and have been an ATC employee since that time. At ATC, my primary
6 responsibilities have included evaluating environmental impacts associated with projects
7 and ensuring that environmental data is factored into project routing decisions, obtaining
8 environmental permits and approvals for transmission line projects, and ensuring that
9 construction teams understand and comply with environmental requirements.

10 **Q. What is the purpose of your testimony?**

11 A. My testimony addresses the environmental impacts associated with the Arrowhead
12 Substation Alternative. Other ATC witnesses provide information on the facilities
13 themselves, the route selection process, other potential impacts associated with the
14 Arrowhead Substation Alternative, and how the Arrowhead Substation Alternative meets
15 the purpose and need for the Project.

16 **Q. Please summarize the main points of your testimony.**

17 A. My testimony demonstrates that the Arrowhead Substation Alternative will have similar or
18 fewer impacts on the environment than would MP's proposal to interconnect the Project
19 through construction of a new St. Louis County substation and associated interconnection
20 facilities. Specifically, the Arrowhead Substation Alternative would not require
21 development of the approximately five-acre St. Louis County Substation and also requires
22 less new right-of-way, requires less permanent wetland impact, produces fewer

1 construction-related greenhouse gas emissions, and would require fewer stream crossings
2 compared to MP's proposed new transmission lines.

3 **Q. How is the remainder of your testimony organized?**

4 **A.** First, although I am not an attorney, I provide an overview of the requirements for the
5 environmental analysis of a proposed alternative as provided in Minnesota Rules. Next, I
6 compare the environmental impacts of ATC's proposed Arrowhead Substation Alternative
7 to MP's proposal to interconnect the Project to the transmission system through a new St.
8 Louis County Substation and associated facilities.

9 **Q. Do you intend to address the environmental impacts of any other portion of MP's**
10 **Project?**

11 **A.** No.

12 **II. BACKGROUND**

13 **Q. Which facilities would be involved in the Arrowhead Substation Alternative?**

14 **A.** At a high level, the Arrowhead Substation Alternative involves work within the fence line
15 of ATC's existing 345/230 kV Arrowhead Substation, as discussed by ATC witness Mr.
16 Tobin Larsen.¹ The Arrowhead Substation Alternative would also require construction of
17 an approximately one-mile double-circuit 345 kV transmission line between the new
18 HVDC converter station that MP is constructing as part of the Project and ATC's
19 Arrowhead Substation. This new line would share a portion of the existing right-of-way
20 (ROW) that is currently used for a segment of MP's 250 kV Square Butte HVDC
21 Transmission Line (HVDC Line), which runs between the new HVDC terminal that MP is

¹ As discussed in the direct testimony of ATC witness Tobin Larsen, most of this work would occur within ATC's 345/230 kV Substation, although some work would also be required within MP's 230/115 kV Substation to modify the current electrical connection between the two substations.

1 constructing as part of the Project and MP's Arrowhead 230/115 kV substation. Therefore,
2 my testimony will discuss both the impacts of the facilities that would be constructed
3 within the fence line of ATC's Arrowhead Substation, and the impacts associated with the
4 transmission facilities, as compared to the impacts of MP's proposed method of
5 interconnecting the Project.

6 **Q. Please explain what environmental impacts must be considered with respect to the**
7 **proposed Arrowhead Substation Alternative.**

8 A. ATC contends that the Arrowhead Substation Alternative presents a more reasonable and
9 prudent alternative when compared to MP's proposal to interconnect the Project to the
10 transmission system, which would involve building an entirely new substation and
11 associated transmission facilities. While I am not an attorney, on advice of counsel, I
12 understand that Minnesota Rule 7849.0120(B) guides the Minnesota Public Utilities
13 Commission's (Commission) analysis of whether a more reasonable and prudent
14 alternative to a proposed facility exists when considering an application for a certificate of
15 need. My testimony focuses on the considerations set forth in Minnesota Rule
16 7849.0120(B)(3), which requires an evaluation of the effects of the proposed facility on the
17 natural and socioeconomic environment as compared to the effects of alternatives.

18 Two additional rules inform this analysis. Minnesota Rule 7849.0330(G) requires a
19 description of the major environmental and socioeconomic features between the endpoints
20 of any proposed transmission facility, and Minnesota Rule 7850.1900, subpart 3 requires
21 similar environmental and socioeconomic information with respect to the issuance of a site
22 or route permit.

23 **III. ENVIRONMENTAL ANALYSIS OF PROPOSED ALTERNATIVE**

1 **Q. What is the purpose of this section of your testimony?**

2 A. In this section, I describe the Arrowhead Substation Alternative's effects on the natural
3 environment, as compared to MP's proposed project. This analysis demonstrates that the
4 Arrowhead Substation Alternative results in similar or fewer environmental impacts as
5 compared to MP's proposal to construct a new St. Louis County Substation and associated
6 transmission facilities.

7 **A. Environmental Setting**

8 **Q. Are there any significant differences in the study area developed by MP as part of its**
9 **application and the area in which ATC's Arrowhead Substation Alternative would**
10 **be located?**

11 A. No. The Arrowhead Substation Alternative falls entirely within MP's Project Study Area,
12 as delineated in MP's Certificate of Need and Route Permit Application for the Project
13 (Application). I have reviewed the environmental setting analysis provided by MP with
14 respect to the Project Study Area and do not dispute the accuracy of this information.
15 Therefore, the environmental setting for the Arrowhead Substation Alternative would be
16 consistent with the environmental setting for the Project, as described in MP's Application.

17 **B. Impacts on Human Settlement**

18 **Q. Do you address all of the impacts on human settlement from the Arrowhead**
19 **Substation Alternative?**

20 A. No. ATC witness Mr. Bradley addresses the impact to residences and aesthetics from the
21 Arrowhead Substation Alternative, as compared to MP's proposal for interconnecting
22 Project. ATC witness Mr. Johanek addresses the impact to noise, public health and safety,
23 public services, and transportation. I address the impacts of the Arrowhead Substation

Alternative on certain socioeconomic factors, archaeological and historic resources, and recreation, as compared to MP's proposal for interconnecting the Project.

Q. Would ATC's Arrowhead Substation Alternative result in fewer or the same impacts related to socioeconomic factors?

A. The Arrowhead Substation Alternative is wholly within the Project Study Area established in MP's Application. Thus, the analysis and conclusions in MP's Application are applicable to the Arrowhead Substation Alternative, including the conclusion that there are no environmental justice communities in the Project Study Area.

Q. Please describe the impacts to recreation of ATC's Arrowhead Substation Alternative as compared to MP's Project.

A. The Arrowhead Substation Alternative is wholly within the Project Study Area established in MP's Application. The impacts to recreation would be substantially similar between the Arrowhead Substation Alternative and MP's Project, if not identical.

C. Impacts to Land-Based Economies

Q. Please describe any impacts to land-based economies from ATC's Arrowhead Substation Alternative to the extent those impacts differ from those included in MP's Project.

A. Generally, "land-based economies" refers to agriculture, forestry, tourism, and mining. The Arrowhead Substation Alternative will have substantially similar impacts to land-based economies as MP's proposal for interconnecting the Project, such that the analysis in MP's Application would also apply to the Arrowhead Substation Alternative.

D. Impacts to Archaeological and Historic Resources

1 **Q. Please describe any impacts to archaeological and historic resources from ATC's**
2 **Arrowhead Substation Alternative to the extent those impacts differ from those**
3 **included in MP's Project.**

4 A. ATC is aware of one archaeological resource located near its proposed route area. The
5 route alignment in the Arrowhead Substation Alternative avoids this feature and includes
6 a 100-meter buffer from that resource.

7 **E. Impacts to the Natural Environment**

8 **Q. How does ATC's Arrowhead Substation Alternative compare to MP's Project as it**
9 **relates to effects on the natural environment?**

10 A. In general, the Arrowhead Substation Alternative will have similar or fewer impacts to the
11 natural environment, which I define as water, air, flora, fauna, and other natural resources.
12 As compared to MP's proposal for interconnecting the Project, the Arrowhead Substation
13 Alternative requires less land disturbance, fewer impacts to surface waters, less permanent
14 wetland impact, and will result in lower greenhouse gas (GHG) emissions and fewer
15 overall impacts to air quality due to more limited construction activity. **Q. Why would**
16 **ATC's alternative result in less of an impact to air quality and GHG emissions than**
17 **MP's proposed project?**

18 A. Because the Arrowhead Substation Alternative does not require the construction of a new
19 substation, no major earth moving equipment is required; this significantly reduces the
20 Arrowhead Substation Alternative's GHG emissions as compared to MP's proposal for
21 interconnecting the Project. Although the Arrowhead Substation Alternative will require
22 construction of a new transmission line, construction of this transmission line will utilize
23 the same types of construction equipment as would be involved with MP's proposal for

1 interconnecting the Project, such as drill rigs, bucket trucks, backhoes, cranes, and manlifts.

2 As such, the Arrowhead Substation Alternative overall requires less construction than the
3 interconnection facilities that MP is proposing to construct as part of the Project. This
4 results in less impact to air quality and GHG emissions as compared to MP's proposal for
5 interconnecting the Project to the transmission system. ATC witness Mr. Dustin Johanek
6 also discusses the projected GHG emissions associated with the construction.

7 **Q. Would ATC's Arrowhead Substation Alternative result in fewer impacts to water**
8 **resources than MP's Project?**

9 A. Yes. The Arrowhead Substation Alternative would result in fewer impacts to wetlands and
10 surface waters and would have similar impacts to floodplains.

11 Wetlands

12 As explained in the direct testimony of ATC witness Mike Bradley, the Arrowhead
13 Substation Alternative was designed to share some of the existing ROW associated with
14 that portion of MP's existing HVDC Line located between the new converter station and
15 MP's existing 230/115 kV Arrowhead Substation. This alignment means that the
16 Arrowhead Substation Alternative would only require the conversion of 2.96 acres of
17 forested wetland.² ATC cannot discern from MP's Application the extent of wetland
18 conversion that would be caused by the MP Project. The only permanent wetland fill that
19 may occur due to the Arrowhead Substation Alternative would be a result of the placement
20 of one transmission structure, resulting in approximately 70 square feet of permanent

² Wetland conversion is distinct from permanent wetland fill. Whereas permanent wetland fill eliminates the wetland, conversion is simply a process where the wetland changes from one wetland type to another. The wetland itself is not eliminated.

1 impact, as compared to the 0.75 acres of permanent wetland impact associated with
2 construction of the new St. Louis County substation required by MP's project.

3 ATC proposes that the following standard techniques be utilized to minimize impact to
4 wetlands, including:

- 5 • factoring wetland boundaries into final engineering to avoid locating structures in
6 wetlands, to the extent practical;
- 7 • developing access routes to minimize crossing wetlands, where possible;
- 8 • installing sediment and erosion control measures, as needed; and
- 9 • after construction, promptly restoring areas where ground disturbance occurs and
10 revegetate where needed with a seed mix comparable to surrounding vegetation and
11 free of noxious or invasive species.

12 Floodplains

13 Similar to the MP Project, the Arrowhead Substation Alternative also crosses a 100-year
14 floodplain adjacent to West Rocky Run Creek. ATC anticipates temporary construction-
15 related impacts within the 0.84 acres of ROW that overlap with this floodplain, but these
16 temporary impacts are not expected to alter the flood storage capacity.

17 Surface Waters

18 ATC's route alignment would cross the West Rocky Run Creek one time with a new 150-
19 foot wide ROW. There are no other rivers, streams, or waterbodies located within ATC's
20 proposed route. ATC does not anticipate any in-water work within the West Rocky Run
21 Creek and anticipates that, where practicable, a buffer of low-growing vegetation could be
22 left adjacent to the waterway to provide shade in support of the trout population in the
23 creek. Erosion and sediment control measures would be used during construction and

1 rootstock of woody vegetation could be left intact to minimize ground disturbance along
2 the creek.

3 By contrast, MP's proposal for interconnecting the Project would involve constructing two
4 230 kV transmission lines from the new St. Louis County Substation to MP's existing
5 230/115 kV Arrowhead Substations. According to the Application, each transmission line
6 would have a 130-foot right-of-way and would need to cross West Rocky Run Creek before
7 entering MP's Arrowhead Substation. In this way, MP's proposal requires more stream
8 crossings than the Arrowhead Substation Alternative, and those lines would occupy a larger
9 ROW along the stream bank (260 feet total) compared to ATC's proposal (150 feet total).

10 **Q. Please describe the impacts to flora and fauna of ATC's Arrowhead Substation**
11 **Alternative as compared to MP's Project.**

12 A. The Arrowhead Substation Alternative will have similar impacts to flora and fauna as
13 MP's Project. The information that MP provided in its Application is also applicable to
14 ATC's proposed route.

15 **Q. How would land cover impacts of ATC's Arrowhead Substation Alternative compare**
16 **to MP's Project?**

17 A. As discussed, the Arrowhead Substation Alternative would not require the construction of
18 a new St. Louis County Substation. Instead, all required substation modifications or
19 upgrades required take place entirely within the fence line of the existing Arrowhead
20 Substation.

21 Construction of the new double-circuited 345 kV transmission line that will be built as part
22 of the Arrowhead Substation Alternative would only require approximately 16.5 acres of

new ROW, and would share an additional 2.15 acres of existing ROW. This compares to MP's project which would result in approximately 17.4 acres of transmission line ROW. The following table calculates the estimated total overlap of existing land cover from the Arrowhead Substation Alternative:

Table 1. Land Cover Categories Within ROW.

	New ROW	Shared ROW	Total
Land Cover Type	Acres	Acres	Acres
Crop Land	0.00	0.00	0.00
Specialty Ag	0.00	0.00	0.00
Grassland	1.58	0.42	2.00
Shrubland	0.83	1.45	2.28
Non-Forested Wetland	0.16	0.00	0.16
Forested Wetland	2.96	0.19	3.15
Upland Forest	10.71	0.05	10.76
Developed/Urban	0.17	0.03	0.20
Open Water	0.13	0.00	0.13
Total	16.53	2.15	18.68

Q. Please describe the impacts to zoning of ATC's Arrowhead Substation Alternative as compared to MP's Project.

A. Similar to MP, it is my understanding that construction and operation of the route selected for the Arrowhead Substation Alternative will not require a zoning change due to the preemption of local land use laws that is granted with the issuance of a route permit.

F. Impacts to Rare and Unique Resources

Q. How does ATC's Arrowhead Substation Alternative compare to MP's Project as it relates to effects on rare and unique resources?

1 A. The Arrowhead Substation Alternative will have substantially similar impacts on rare and
2 unique resources as MP's Project. The information that MP provided in its application is
3 also applicable to ATC's proposed route. MP provided confirmation from the Minnesota
4 Department of Natural Resources (MnDNR) that there have been no state-listed
5 endangered or threatened species documented within MP's Project Study Area. Since the
6 Arrowhead Substation Alternative is entirely within the MP Project Study Area, the
7 MnDNR's conclusions with respect to state-listed endangered or threatened species applies
8 equally to the Arrowhead Substation Alternative. Similarly, the federally-listed and
9 candidate species that MP documented within the Project Study Area would also apply to
10 the Arrowhead Substation Alternative. Finally, the same avoidance and minimization
11 measures that MP has committed to concerning the Northern Long-Eared Bat, the Canada
12 Lynx, the Gray Wolf, the Tri-Colored Bat, and Monarch Butterfly would apply to the
13 Arrowhead Substation Alternative.

14 Similarly, MP did not identify any natural resource sites within the Project Study Area. As
15 the Arrowhead Substation Alternative is wholly within this study area, there will be no
16 natural resource sites impacted by the Arrowhead Substation Alternative.

17 IV. CONCLUSION

18 **Q. Can you please summarize the key points of your testimony?**

19 A. My testimony addressed the environmental impacts of the Arrowhead Substation
20 Alternative, as compared to MP's proposal for interconnecting the Project. I explained how
21 the Arrowhead Substation Alternative results in similar or fewer environmental impacts
22 than MP's Project with respect to the criteria that must be evaluated under Minnesota
23 Rules. I also identify those criteria for which the Arrowhead Substation Alternative and

1 MP's proposal for interconnecting the Project would have substantially similar, if not the
2 same, impacts. For these criteria, the information in MP's Application provides the
3 relevant analysis and conclusions to evaluate the Arrowhead Substation Alternative.

4 **Q. Does this conclude your pre-filed direct testimony?**

5 A. Yes.