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 DUSTIN JOHANEK

I. INTRODUCTION AND QUALIFICATIONS

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

A. My name is Dustin Johanek. I am employed by ATC Management, Inc., the corporate manager of American Transmission Company LLC (collectively, ATC). My job title is Consultant Project Manager and my business address is 801 O'Keefe Road, De Pere, WI 54115.

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 HVDC Modernization Project (Project) proposed by Minnesota Power (MP or Applicant).

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

A. I have 21 years of construction experience, with over 15 of those years in the utility industry, all at ATC. After beginning my career at ATC as a project controls scheduler,

for the past 13 ½ years, I have worked as a project manager, leading multiple project teams in executing capital substation, transmission line and submarine cable projects at ATC, some of which require filing and obtaining Certificates of Authority and Certificates of Public Convenience and Necessity with the Public Service Commission of Wisconsin. I am a 2002 graduate of the University of Wisconsin – Platteville with Bachelor of Science in Industrial Technologies Management – Emphasis in Building Construction Management.

Q. What are your current responsibilities at ATC?

A. As a Project Manager, I manage the scope, schedule, and budget on ATC capital transmission projects, leading project teams from preliminary engineering through detailed design, construction, and close out. At this time, I have been identified as the Project Manager for the Arrowhead Substation Alternative and would manage these aspects of ATC's work and coordination of the ATC work with MP's work.

Q. What is the purpose of your testimony?

A. My testimony addresses: (1) ATC's current estimated cost of the Arrowhead Substation Alternative, as compared to the costs of MP's proposal, including the building of an entirely new substation; and (2) certain issues related to construction of the Arrowhead Substation Alternative and the ability to meet the necessary in-service date (ISD)

Q. Are you sponsoring any exhibits in support of your testimony?

A. Yes. I am sponsoring the following exhibits:

Schedule 1: ATC Response to Department of Commerce Information Request 9

Schedule 2: Arrowhead Substation Alternative Timeline Through In-Service Date

Schedule 3: Estimated GHG Emissions Associated with Construction of the Arrowhead Substation Alternative

II. ESTIMATED COST OF THE ARROWHEAD SUBSTATION ALTERNATIVE

Q. How does the Arrowhead Substation Alternative modify MP's proposal in this proceeding?

A. Other ATC witnesses will discuss this in greater detail, but at a high level, MP's proposal includes construction of: (1) a new HVDC converter station (terminal) at the eastern end of the Square Butte 550 MW HVDC line (HVDC Line); (2) a 345 kV transmission line connecting this new terminal to a proposed new St. Louis County Substation, requiring new right-of-way; (3) the new substation; (4) two parallel 230kV transmission lines connecting the new substation to MP's existing 230kV Arrowhead Substation, requiring new right-of-way, and (5) complete modifications to that 230kV Arrowhead Substation.

By contrast, the Arrowhead Substation Alternative utilizes ATC's existing 345/230 kV Arrowhead Substation to interconnect the Project, rather than requiring building the new St. Louis County Substation, (item (3), above). This alternative would also replace MP's proposed new transmission lines (items (2) and (4), above), with a double-circuited 345 kV line to connect the new converter station to ATC's existing substation, which would utilize part of the existing HVDC Line right-of-way.

Q. What work would be involved to implement the Arrowhead Substation Alternative?

A. As mentioned, the Arrowhead Substation Alternative would mean construction of an approximately one mile long double circuited 345 kV transmission line, running from MP's new converter station to ATC's 345/230 kV Arrowhead Substation. ATC witness Mike Bradley discusses the transmission facilities involved in this alternative. The Arrowhead

Substation Alternative also would involve work at ATC's Arrowhead Substation, as discussed by ATC witness Tobin Larsen.

Q. What is ATC's current cost estimate for the Arrowhead Substation Alternative?

A. ATC's current estimate for the cost of the Arrowhead Substation Alternative is approximately $39.5 million, with a range of $34.9 million to $47.5 million (all in 2022 dollars), including both the transmission related work and the work at the Arrowhead Substation.

Q. How did ATC develop this cost estimate?

A. As explained in ATC's Response to Department of Commerce Information Request 9, attached as Schedule 1, in order to present as representative and accurate an estimate as possible, ATC developed its cost estimate based on consultations with its suppliers and contractors.

Q. And did ATC break this overall estimate down by project component?

A. Yes. As shown in Schedule 1 and Table 1, below, ATC has presented its cost estimate by project component.

Table 1: ATC Arrowhead Alternative Cost Estimate (2022$)

Line	Project Component	Low	Mid	High	Owner
1	Minnesota Land Acquisition	-	-	-	MP
2	HVDC Line Entrance	-	-	-	MP
3	HVDC 345 kV Line Entrance for Ckt #2	2.2	3.1	4.0	MP
4	Arrowhead 345 kV Double Ckt	7.8	8.7	10.4	MP
5	Arrowhead 345 kV Line Reconfiguration	Included in Line 4			ATC
6	Arrowhead 345/230 kV Substation Expansion	24.9	27.7	33.2	ATC
7	Arrowhead 230 kV Phase Shifting Transformer	0	0	0	-
8	Arrowhead 230 kV Bus Reconfigurations	Included in Line 6			MP
9	**Total**	34.9	39.5	47.6	

I note that ATC anticipates MP owning the double-circuit 345 kV interconnection line between the new HVDC converter station and ATC's Arrowhead 345/230 kV Substation, whereas ATC would own the upgrades within its 345/230 kV Arrowhead Substation.

ATC's cost estimate for the new double-circuit transmission line is based on discussions with and information from ATC's suppliers and contractors. If the Commission selects the Arrowhead Substation Alternative to achieve the HVDC Modernization Project, MP will need to determine who constructs that interconnection line. I do not believe this should materially change the overall cost, however, given the relatively short line length and the fact that the cost of the transmission line is estimated to be less than a quarter of the overall cost of the Arrowhead Substation Alternative.

Q. How did ATC determine the low and high ends of its estimated cost range?

A. The low end of the range reflects a -10% contingency from ATC's primary cost estimate ($39.5 million) and the upper end of the range reflects a +20% contingency. I view these as reasonable contingencies because ATC has created this estimate with contractor and supplier input. In addition, based on the information gathered and overall stage of project maturity, this contingency falls within the range prescribed in MISO's Transmission Cost Estimate Guide (MTEP22) at this stage of the project development (Planning Cost Estimate – Desktop Analysis), as that guide calls for a 20% upper range contingency and 20% low range contingency.

Q. How does the estimated cost of the Arrowhead Substation Alternative compare to the cost of MP's proposal, which includes constructing the new St. Louis County Substation?

A. To obtain an accurate cost comparison, we need to identify the costs MP included in its overall Project cost estimate that would be avoided by modifying the MP proposal to reflect the Arrowhead Substation Alternative. That means identifying the costs that would be incurred for:

- MP's proposed new St. Louis County Substation,
- MP's proposed 345kV transmission line that would connect the new HVDC converter station to this new substation; and
- MP's proposed two parallel 230 kV transmission lines that would connect the new St. Louis County Substation to MP's Arrowhead Substation.

Minnesota Power refers to these as the "Minnesota Interconnection Facilities" in its certificate of need application. At page 12 of the application, Minnesota Power estimated the cost of these facilities at $40 million to $70 million (in 2022 dollars), with a mid-range estimate of $55 million.

Q. How was Minnesota Power's cost estimate developed?

A. At page 13 of its application, MP states: "The cost of Minnesota Interconnection Facilities is generally based on the 2022 MISO Transmission Expansion Planning Cost Estimating Guide."

Q. Why did ATC not develop its cost estimate in this same manner?

A. I believe developing the cost estimate through direct consultation with our suppliers and contractors provides a more representative and accurate picture of the likely costs of this work, as compared to basing the estimate on a general cost estimating guide.

Q. What is your conclusion regarding the likely cost of the Arrowhead Substation Alternative, compared to the likely cost of MP's proposed new St. Louis County Substation and associated facilities?

A. The Arrowhead Substation Alternative is likely to have significantly lower cost than MP's proposal. ATC estimates the cost of the Arrowhead Substation Alternative to be $39.5

million, compared to MP's mid-range estimate of $55 million—nearly 40% higher than the ATC alternative.

II. PROJECT CONSTRUCTION ISSUES

Q. If the Commission selects the Arrowhead Substation Alternative, who would construct the necessary facilities?

A. As I noted above, MP would own the transmission facilities associated with the Arrowhead Substation Alternative and would decide who would construct those facilities. Regarding the work at ATC's Arrowhead Substation, ATC would work with its alliance partners to complete design, procurement, construction, and closeout of the project. Currently, MP Systems has been identified as the construction firm to complete construction at the Arrowhead substation if the Commission approves implementation of the Arrowhead Substation Alternative as part of this proceeding.

Q. How large a work force is anticipated for the Arrowhead Substation Alternative?

A. Construction crew sizes will vary at different stages during the project and for various workgroups. However, the following field crew sizes are expected for the construction of the double circuit 345kV line and substation modifications at ATC's Arrowhead Substation to support the Arrowhead Substation Alternative: (1) a 4 person crew for the substation construction within the substation fence, and (2) a 4-6 person crew for the construction of the transmission line facilities. Additional workforce will be required to provide site, safety, and environmental supervision and other offsite support. Trucking for delivery of new materials or removal of existing materials would be in addition to the identified site crew size.

Q. Would the workers be paid prevailing wages?

A. Yes. ATC's alliance construction contractors would hold the labor agreements for this project. As stated in ATC's response to MP Information Request 012, ATC does not have project labor agreements in place with Wisconsin and Minnesota labor unions. ATC's contractors are the entities that would hold such agreements. Our alliance construction contractors perform work in Minnesota for other utilities and, to the extent preexisting agreements are not in already in place to provide for payment of prevailing wages, ATC anticipates that its contractors would enter into such agreements prior to construction.

Q. Has ATC analyzed the ability of the Arrowhead Substation Alternative to be constructed in time to meet the ISD for the overall Project?

A. Yes. ATC has prepared a high-level schedule for construction of the Arrowhead Substation Alternative, attached as Schedule 2, to confirm that it can meet the April 2030 ISD for the Project. This schedule is contingent upon Commission approval of the Arrowhead Substation Alternative by July 31, 2024 and is based on equipment and material lead times as of January 10, 2024. Certainly, procurement for substation materials has been identified as the critical path long lead time item. ATC approved vendors have been contacted and the lead times communicated are listed in the attached Schedule 2. The substation construction work is shown to start 10 months prior to the anticipated delivery of the long lead equipment and material. ATC built twelve (12) weeks of construction contingency into the construction timeline following the receipt of the poles and substation equipment to allow for any unforeseen material delays. With the longest lead time items being within the substation, the timing for transmission line construction would be flexible for all work leading up to the point that an outage will be required on the existing HVDC Line to connect that line to MP's new converter station; this allows for flexibility in completing

the work prior to the critical path items and to allow for coordination with MP. Schedule 2 also includes an indicative schedule for the new double circuit 345 kV line to meet the April 2030 in-service date.

Q. Have you also analyzed whether construction of the Arrowhead Substation Alternative would require an extended outage of the HVDC line?

A. ATC has looked at that issue and there would not be a need for such an outage. ATC proposes that the transmission line in the Arrowhead Substation Alternative be sited and constructed such that the centerline for the new, approximately one mile long double-circuited 345 kV line would be offset from the existing HVDC Line by approximately 110 feet. This would allow for safe operation of the HVDC Line during construction of the new double-circuit 345 kV line. The new double-circuit 345 kV line would likely require one crossing of the existing HVDC Line, so construction of the new line would require a temporary outage to the HVDC Line. This outage would be coordinated to occur during the five days of outage time to the HVDC Line that Minnesota Power has already indicated will be necessary for the Project. In other words, the required outage duration for the existing HVDC Line would be the same for the Arrowhead Substation Alternative as it would be for Minnesota Power's proposal.

Q. What other construction-related impacts has ATC considered?

A. ATC has also considered potential construction-related impacts with respect to noise, public health and safety, public services and transportation. The Arrowhead Substation Alternative is expected to have less overall impact than the MP proposal with respect to each of these factors. For example, there will be less vehicular traffic and no earth-moving equipment, due to no need to expand or build a new substation site. Activities required for

the MP project, but not for the Arrowhead Substation Alternative, include substation site tree clearing, site grading, site security, ground grid installation and control house construction. In addition, all new subgrade and finish grade gravel material will need to be hauled into the new St. Louis Substation, increasing the amount of vehicular truck traffic for the surrounding area. **Q. Will additional easements be required as a result of the Arrowhead Substation Alternative Project?**

A. Based on information provided by MP during discovery, ATC understands that MP has acquired ownership of all parcels required for the scope of its iteration of the Project. This includes ownership of land on which the transmission component of the Arrowhead Substation Alternative would be constructed. Therefore, additional easements will not be required for the Arrowhead Substation Alternative project because MP has already purchased all land needed for this alternative.

Q. Has ATC also examined the applicable permitting requirements for the Arrowhead Substation Alternative and its ability to assure compliance with all such requirements?

A. Yes. ATC witness Amy Lee discusses the permits that may be required for the Arrowhead Substation Alternative. ATC understands its obligation to obtain all necessary permits and to comply with all relevant policies, rules and regulations.

Q. Has ATC estimated the greenhouse gas emissions that may be associated with the Arrowhead Substation Alternative?

A. Yes. As would be the case with MP's proposal, greenhouse gases (GHGs) would be temporarily generated during construction of the Arrowhead Substation Alternative facilities. As shown in Schedule 3, ATC anticipates that 10,740 gallons of Distillate Fuel

Oil No. 1 would be consumed to construct the Arrowhead Substation Alternative, producing 121 tons of carbon dioxide equivalent (CO2e) emissions, per the EPA Emission Factors for Greenhouse Gas Inventories worksheet. I am not aware of MP developing a breakout of the GHG emissions related strictly to construction of its proposed new St. Louis County Substation and associated new transmission lines. Therefore, I cannot provide a direct comparison of the GHG impacts of the two alternatives. However, due to the reduced overall equipment needed to construct the Arrowhead Substation Alternative, less fuel will be consumed, reducing the amount of GHGs produced, compared to the MP proposal.

Q. Does this conclude your direct testimony?

A. Yes, it does.