

**BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN**

Joint Application of Dairyland Power Cooperative,
Northern States Power Company-Wisconsin, and Wisconsin
Public Power, Inc., for Authority to Construct and Place
In Service 345 kV Electric Transmission Lines and
Electric Substation Facilities for the CapX Twin Cities-
Rochester-La Crosse Project, Located in Buffalo, Trempealeau,
And La Crosse Counties, Wisconsin

Docket No. 05-CE-136

INITIAL BRIEF OF THE CITIZENS UTILITY BOARD

I. INTRODUCTION.

Pursuant to Wis. Stat § 196.491, Northern States Power Company of Wisconsin (NSPW), Dairyland Power Cooperative (DPC), and WPPI Energy (WPPI) (collectively “Applicants”) are seeking approval from the Public Service Commission of Wisconsin (PSC or Commission) of their application for a certificate of public convenience and necessity (CPCN) to construct the Wisconsin portion of a new 345 kilovolt (kV) transmission line from Alma, Wisconsin to a new transmission substation near Holmen, Wisconsin in the La Crosse area (“Applicants’ proposal” or “the project”). (Ex.-Applicants-Hillstrom-1, Joint Application (PSC REF #: 155042), “Joint Application,” p. 1-1) The Citizens Utility Board (CUB) hereby submits its initial brief regarding the Applicants’ proposal.

The Applicants’ proposal is contrary to the CPCN requirements. First, the Applicants’ proposal is excessive relative to the local need in the La Crosse area. Rather than providing a solution to address local need in the study area for the typical 10 to 20 year planning period, the Applicants propose a solution that would address local need for a 50 to 60 year planning period. In addition, the Applicants’ proposal cannot be justified on the basis of regional need because no

regional benefits arise from the project by itself. All purported regional benefits are dependent upon installation of another 345 kV transmission line to the east of the Applicants' proposal, the application for which has not been filed. Moreover, the cost of the project is excessive in relation to the purported benefits and as compared to viable alternatives, and the project is not in the public interest considering economic, reliability, environmental factors, alternative sources of supply, and individual hardships. Thus, the Commission should reject the Applicants' proposal.

In rejecting the Applicants' proposal, the Commission should instruct the Applicants to study the 345 kV/161 kV hybrid alternative developed by CUB witness Richard Hahn. Mr. Hahn's hybrid proposal is a viable, less costly, and less environmentally and aesthetically impactful alternative to the Applicants' proposal that also provides the option for receiving the purported regional benefits associated with the La Crosse to Madison project, if such project is later deemed warranted by the Commission.

II. THE COMMISSION SHOULD REJECT THE APPLICANTS' PROPOSAL.

A. The Applicants' Proposal Does Not Meet the Requirements for a Certificate of Public Convenience and Necessity

1. The law regarding certificates of public convenience and necessity for the construction of a high-voltage transmission line.

In order to receive approval from the PSC to construct their proposed high-voltage transmission line, the Applicants' proposal must meet certain criteria. For instance, the Commission must ensure that the proposed high-voltage transmission line satisfies the reasonable needs of the public for an adequate supply of electric energy, and that the design and route are in the public interest considering alternative sources of supply, alternative routes, individual hardships, engineering, economic, safety, reliability and environmental factors. Wis. Stat. §§ 196.491(3)(d)2. and 3. The proposed high-voltage transmission line also must not

provide facilities unreasonably in excess of probable future requirements. Wis. Stat. §§ 196.49(3)(b)2. and 196.491(3)(d)5. Moreover, the proposed high-voltage transmission line must not have an undue adverse impact on other environmental values such as, ecological balance, public health and welfare, the aesthetics of land and water, and recreational use. Wis. Stat. § 196.491(3)(d)4.

In addition, the Commission must find that the proposed high-voltage transmission line:

provides usage, service or increased regional reliability benefits to the wholesale and retail customers or members in this state and the benefits of the high-voltage transmission line are reasonable in relation to the cost of the high-voltage transmission line.

Wis. Stat. § 196.491(3)(d)3t. For a high-voltage transmission line that is proposed to increase the transmission import capability into the state, like the Applicants' proposal, the law also requires existing rights-of-way to be used to the extent practicable and the design and routing to minimize environmental impacts in a manner consistent with achieving reasonable electric rates. Wis. Stat. § 196.491(3)(d)3r; *see also* Wis. Stat. § 1.12(6).

2. The Applicants' proposal does not meet the statutory criteria for need.

The threshold criterion for examining a proposed high-voltage transmission line is need. In their Application, the Applicants assert that their proposal is needed to meet local load serving needs in the La Crosse area¹ and to provide regional benefits. (Joint Application, p. 1-1; Direct-Applicants-King-88) Each assertion is addressed in turn.

¹ In addition to meeting local load in the La Crosse area, the Application notes that the project is needed to meet local load serving needs in Winona, Minnesota and Rochester, Minnesota. (Joint Application, p. 1-1) On May 22, 2009, the Minnesota Public Utilities Commission (MPUC) approved the need for the portion of the proposal from Hampton County, Minnesota to the Mississippi River. (*Id.*) This brief focuses primarily on the remainder of the Applicants' proposal, i.e., from the river crossing at Alma to the La Crosse area.

- a. The Applicants proposal is in excess of local load serving needs in the La Crosse area.
 - i. The Applicants' load growth estimate is significantly overstated.

One of the first steps in determining local need for a transmission project is the development of a load forecast. A load forecast attempts to predict the load levels for a study area, and a power flow system analysis is then performed to determine what new facilities may be needed to address projected future load in that area. Transmission systems are designed to solve problems associated with system peaks. (Direct-Applicants-King-7) Thus, load forecasts attempt to predict the peak load a study area will achieve, and the system is then designed to meet that need.

DPC and NSPW examined historic and forecasted peak load growth at substations in or near La Crosse, Buffalo, and Trempealeau Counties as well as the City of Sparta in Wisconsin (hereinafter referred to as the "study area"). (Direct-PSC-Urban-3) DPC and NSPW used varying forecasting methods that, when combined, result in their estimate of an annual percentage load growth rate for 2010 to 2030 (the study period) of 1.4 percent. (*Id.*)

DPC's and NSPW's 1.4 percent load growth rate is unreasonable. (Direct-CUB-Hahn-12) First, it is based on non-coincident peak loads, which overstate peak load. (Direct-CUB-Hahn-9) Second, it is based on two of the hottest years over the last ten years (2006 and 2011). (Direct-PSC-Urban-3) Third, it assumes a significantly higher rate of future growth compared to historic growth with no evidence to support the significant increase. (Direct-CUB-Hahn-12, Hahn, Tr. 83; Urban, Tr. 651, 653) Fourth, it is out of line with benchmark forecasts for the broader region. (Direct-CUB-Hahn-13)

The peak load estimates the Applicants relied on in 2006 and 2011 are overstated because they were developed based on non-coincident peak load rather than coincident peak load.² (Direct-CUB-Hahn-8 to 9) As Mr. Hahn explained, there are 33 load serving substations in the study area. All loads for the 33 substations are served from three 161 kV buses which are supplied by four existing 161 kV transmission lines connected to the rest of the MISO system. The demands placed on those four lines are based upon coincident peaks, not individual substation non-coincident peaks. (*Id.*) Thus, it is not reasonable to use non-coincident peak load to calculate local reliability needs because the electric system will never be called upon to meet non-coincident peak demand in the study area. (*Id.*)

The Applicants' forecast is also unreasonable because it is based on two "cherry-picked" years, i.e., 2006 and 2011. Those two years were unusually hot and were the hottest in the last ten years. (Direct-PSC-Urban-3) It is inappropriate to base a twenty-year future projected load forecast on two "outlier" years.

Moreover, the Applicants' forecast is significantly greater than historic peaks for the study area. From 2002 to 2011, the Applicants' load in the study area grew at an average of 1.00 percent annually. (Direct-CUB-Hahn-12) From 2002 to 2010 (excluding 2011, which was an unusually hot year), load in the study area grew at an average of 0.75 percent. (Direct-PSC-Urban-5) By contrast, the Applicants assume that 2011 to 2020 growth in the study area would accelerate to 1.46 percent. (Direct-CUB-Hahn-12)

There is no information in the record supporting the Applicants' estimate that peak load growth in the study area will increase so significantly over historical averages. (Hahn, Tr. 83)

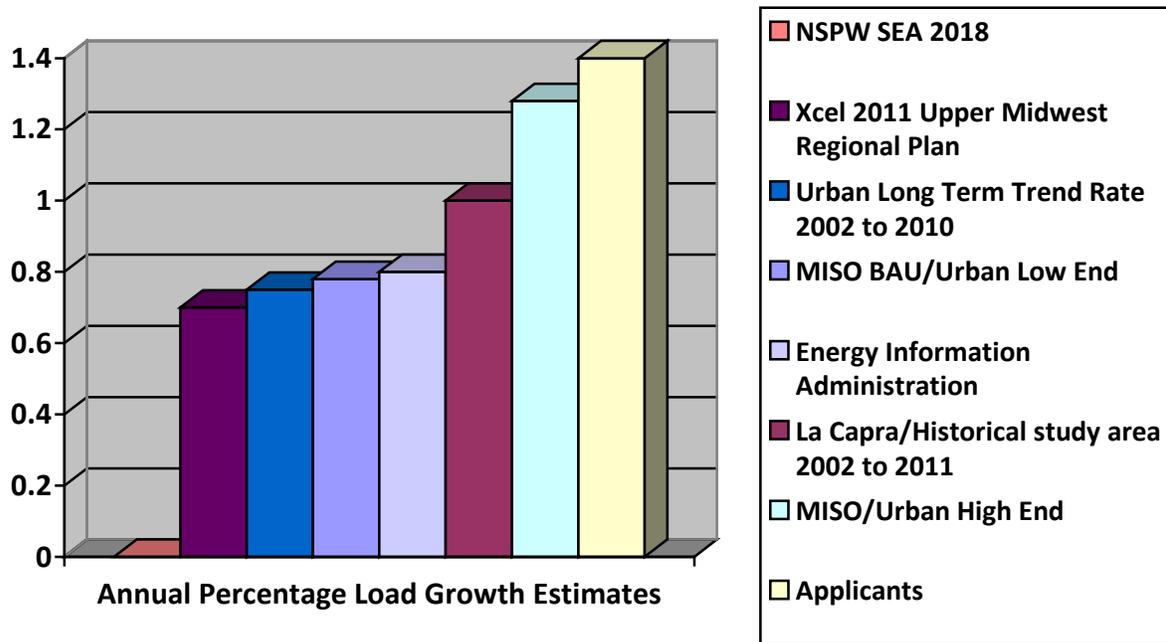
² Non-coincident peak loads are the maximum load at each individual substation regardless of the hour in which that maximum occurred. (Direct-CUB-Hahn-9) Coincident peak load, by contrast, is the maximum aggregate load across all substations within the study area at any given hour. (*Id.*) By definition, the coincident peak load can be no higher, and is often significantly lower, than the non-coincident peak load. (*Id.*)

At the technical hearing, the Applicants witness Ms. King testified that unnamed planners for the Applicants based their 1.46 estimate on unspecified knowledge of what was or could be happening in the study area. (King, Tr. 145-46) That is not a sufficient basis to support the nearly fifty percent increase from the 1.0 percent ten-year historical average peak load to the Applicants' 1.46 percent ten-year projected load for the study area. (Urban, Tr. 651, 653)

In addition, the Applicants 1.4 percent load growth estimate is higher than other load forecast benchmarks that include the study area. For instance, MISO's most recent transmission expansion plan forecasted 0.78 percent load growth across the MISO footprint in its Business as Usual (BAU) case with a high growth rate of 1.28 percent as a sensitivity. (Direct-CUB-Hahn-12 to 13; Direct-PSC-Urban-6) Xcel Energy, NSPW's parent company, recently filed an update to its 2010 Upper Midwest Resource plan revising the expected peak demand growth rate for the integrated NSPW and NSP-Minnesota system downward from 1.1 percent to 0.7 percent. (Direct-CUB-Hahn-13, citing the report from December 2011) The Energy Information Administration predicts a 0.8 percent annual growth rate in electricity use from 2010 to 2035 for the nation. (Direct-PSC-Urban-6 to 7) And in its recent Strategic Energy Assessment filing before this Commission, NSPW indicated that it expects zero growth in Wisconsin peak electric demand between 2011 and 2018. (Direct-CUB-Hahn-13, citing PSC REF #: 153305)

CUB witness Mr. Hahn analyzed the Applicants historic actual coincident peak load growth (from 2002 to 2011) and the benchmark forecasts identified for the region and determined that a reasonable annual percentage load growth rate for the study area over the study period is 1.0 percent. (Direct-CUB-Hahn-13) Dr. Urban estimated a reasonable load growth range for the study area to be between 0.78 percent and 1.28 percent. (Urban, Tr. 647) As shown in the chart below, Mr. Hahn's load growth estimate compares favorably to the

benchmarks for the region and Dr. Urban’s estimates, while the Applicants’ load forecast is significantly higher than historical growth and the regional benchmarks. (Direct-CUB-Hahn-13)



Dr. Urban testified that Mr. Hahn’s 1.0 percent load growth estimate was more reasonable than the Applicants and was more in line with her estimation. (Rebuttal-PSC-Urban-

4) The Commission should likewise conclude that a reasonable load growth estimate for the study area over the study period is 1.0 percent.

- ii. The Applicants critical load level relies on overly cautious assumptions.

Once a reasonable load growth estimate has been established, the next step is determining a critical load level for the study area. A critical load is the maximum load level that an area can reliably be served under the assumed occurrence of certain system contingencies. (Direct-CUB-Hahn-14) For example, an “N-1” system contingency assumes normal system operations with the outage of one significant system element, like a generator or a transmission line. In evaluating this project, the Applicants applied an “N-2” system contingency. That assumes

normal system operations with two significant system elements simultaneously going out of service. (*Id.*) The two simultaneous outage contingencies the Applicants assumed were (1) outage of the JP Madgett (Madgett) generating unit (387 MW) and (2) outage of the Genoa-Coulee 161 kV transmission line.³ Using a power flow analysis with these contingencies assumed, the Applicants identified a critical load level for the study area of 430 MW. (*Id.*) That means that if load in the study area exceeds 430 MW and Madgett and the Genoa-Coulee 161 kV line simultaneously go out of service, the study area could experience reliability problems if no other action (e.g., direct load control) is taken. An N-2 system contingency meets National Electric Reliability Council (NERC) standards for transmission planning. (Direct-CUB-Hahn-16)

However, the Applicants' critical load level analysis is overly cautious because it did not take into account French Island Units 3 and 4. (Direct-CUB-Hahn-16) French Island Units 3 and 4 are two 70 MW oil-fired peaking units in the study area that are owned and operated by NSPW. (Direct-CUB-Hahn-15) French Island Unit 3 has been mothballed, but French Island Unit 4 is currently operational. (Ex.-PSC-Rineer-1, Part 4 of 78, p. 17) The Applicants performed their critical load level analysis with both French Island units "turned off" in the power flow model. (Direct-CUB-Hahn-15) As Mr. Hahn explained, all actually available system elements in the study area should be assumed to be available in the power flow model analyzing the critical load level except those elements identified to meet the N-2 criteria. (Direct-CUB-Hahn-16 to 17) Depriving the power flow model of additional system elements beyond the outages assumed for the N-2 criteria is akin to planning for an N-3 contingency, which is above and beyond NERC requirements. (*Id.*) If French Island Unit 4 is assumed to be

³ The Applicants also analyzed another N-2 contingency that involved outage of the Genoa generating station and the Alma-Marshland 161 kV transmission line. That contingency yielded similar results. (Direct-CUB-Hahn-17)

available on the system during the N-2 system contingency, the critical load level for the study area increases from 430 MW to 500 MW. If French Island Unit 3 is reactivated from mothball status and assumed to be available during the N-2 system contingency,⁴ the critical load level increases to 570 MW. (Direct-CUB-Hahn-17) Thus, as Mr. Hahn explained, there is a range of reasonable critical load levels for the study area (i.e., between 430 MW and 570 MW) depending on the assumed availability of the French Island Units (Direct-CUB-Hahn-17).

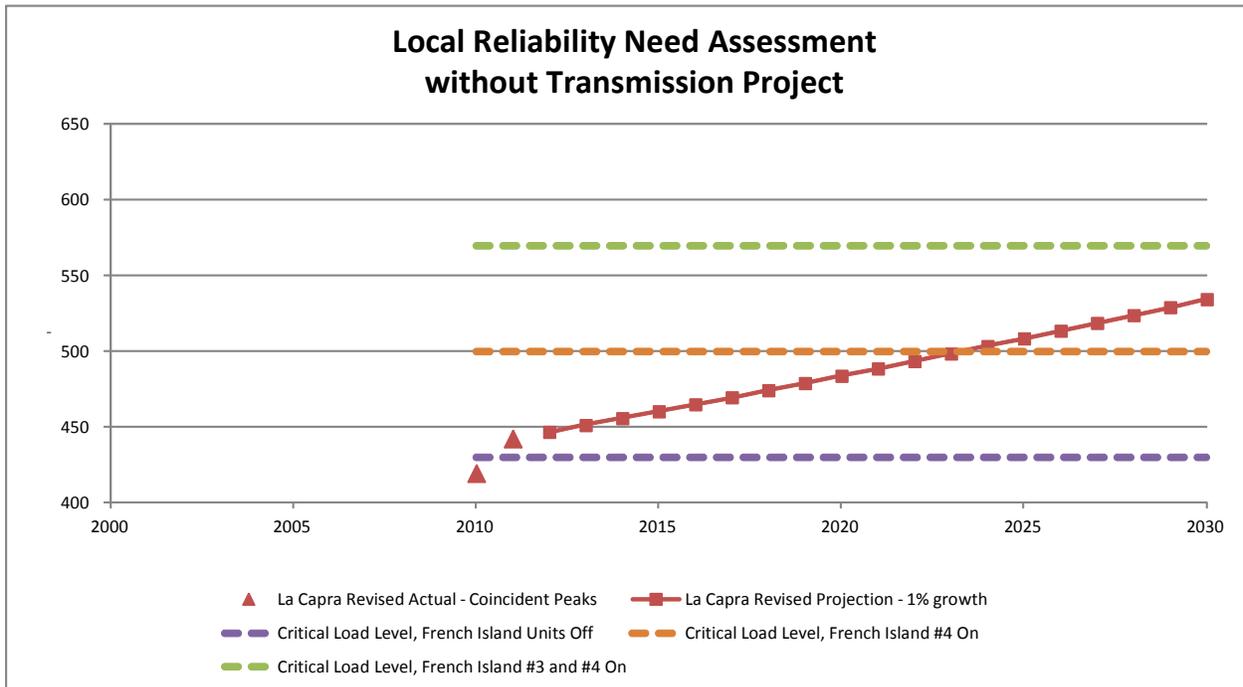
- iii. The Applicants' proposal exceeds reasonable reliability requirements for the study area.

Once a reasonable load growth estimate and critical load level have been established, the next step is to examine whether actual and projected load in the study area will exceed the critical load level and, if so, whether a transmission solution is needed to address the problem. (Direct-Applicants-King-7) In 2011, actual coincident peak load in the study area was 442.4 MW.⁵ (Ex.-CUB-Hahn-2) As noted above, the Applicants identified a 430 MW critical load level assuming the unavailability of Madgett, the Genoa-Coulee line, and both French Island units. Thus, for that hour in which the 442.4 MW summer peak occurred, if Madgett tripped offline at the same time the Genoa-Coulee line was out of service and French Island Unit 4 was not brought on line, the study area could have experienced reliability problems. By contrast, if Madgett tripped offline at the same time the Genoa-Coulee line was rendered unavailable, but French Island Unit 4 was brought on line, the study area should not have experienced reliability problems.

⁴ The Applicants' witness Mr. Beuning testified that French Island Unit 3 is under consideration for repair and that it may not be mothballed indefinitely. (Beuning, Tr. 138)

⁵ The 442.4 MW represents a coincident peak load level for 2011 based on actual data provided by the Applicants. (Hahn, Tr. 30-31) The Applicants peak load level of 465 MW for 2011 is based on non-coincident peak load data. (*Id.*; Ex.-Applicants-King-6)

The reasonable critical load levels in conjunction with the actual load and reasonable load forecast for the study area is not indicative of an urgent or severe need, but it is indicative of a need. (Direct-CUB-Hahn-17; Hahn, Tr. 29) The issue then becomes what solution is necessary and cost effective to address the need. Adding a new transmission line to the study area will increase the critical load level for the area. A reasonable planning period for a solution to a local reliability need is 20 years. (Direct-PSC-Sirohi-9) Below is a figure excerpted from Figure 9 in Mr. Hahn’s direct testimony that shows the three reasonable critical load levels (i.e., the 430 MW level based on the N-2 contingency without French Island Units 3 or 4; the 500 MW level based on the N-2 contingency with French Island Unit 4 available; and the 570 MW level based on the N-2 contingency with both French Island units available) compared to Mr. Hahn’s load growth estimate without any new transmission project installed in the area.



(Direct-CUB-Hahn-18) This graph shows that, assuming no reliance on either of the French Island units and assuming Mr. Hahn’s load growth forecast is reasonable, a transmission solution

would reliably serve the study area for a 20-year planning period provided that it increased the critical load level to 550 MW.

The Applicants' proposal, however, would increase the critical load level for the study area from the Applicants' 430 MW estimate to an unreasonably high 750 MW, nearly double the 430 MW estimate. (Direct-CUB-Hahn-18) Using Mr. Hahn's load growth estimate, the 750 MW critical load level would not be reached for 50 to 60 years into the future, well outside the generally accepted transmission planning horizon. (Direct-CUB-Hahn-19; Direct-PSC-Sirohi-9) It is not reasonable to design a system based on such an extensive planning horizon. (Direct-CUB-Hahn-19) As Mr. Hahn explained, the Applicants solution provides reliability relief in excess of the local reliability needs it is intended to address and unreasonably exceeds the Applicants' probable future local need requirements. (Direct-CUB-Hahn-10 and 19; Hahn, Tr. 33-34) In short, it is reliability overkill.

A more reasonable solution would be to address the need for the generally accepted planning period of 10 to 20 years. (Direct-CUB-Hahn-19; Direct-PSC-Sirohi-9) The Applicants proposal unreasonably exceeds the Applicants' probable future local need requirements and is contrary to the CPCN statute criteria in Wis. Stat. §§ 196.49(3)(b)2. and 196.491(3)(d)5.

- b. The Applicants' proposal is not necessary to provide any regional benefits.

In addition to being excessive for local reliability needs, the Applicants proposal is also not necessary to provide any regional benefits. The Applicants assert that their proposal is needed to increase transfer capability between Minnesota and Wisconsin, and to provide greater system efficiency leading to reduced resistive losses, congestion relief, lower production costs, and facilitation of a regional market with better access to more economic wind and other generation resources. (Direct-CUB-Hahn-24) However, all of the Applicants' analyses

regarding regional benefits are based on the assumption that other transmission lines will also be built. (Direct-CUB-Hahn-25; Hahn, Tr. 74-75, 77) That is, the Applicants’ asserted regional benefits only materialize if the proposed multi-value projects (MVP)⁶ identified in MISO’s most recent transmission expansion plan are also placed into service. (*Id.*; Beuning, Tr. 114) More specifically, the Applicants’ claimed benefits only manifest if the MVP lines to the west of the Applicants’ proposal and the La Crosse to Madison MVP line to the east are placed in service. (*Id.*, *see also* Direct-CUB-Hahn-26, Figure 14 for a map depicting the location of the Applicants’ proposal relative to the surrounding proposed MVP projects)

Construction of the MVP projects to the west of the Applicants’ proposal has recently been approved, but no utility has even filed an application with the Wisconsin Commission for the La Crosse to Madison MVP project. There is nothing inherent in the Applicants’ proposal, by itself, that allows for any of the claimed regional benefits to be achieved without the La Crosse to Madison line. The purported regional benefits, if they are to be realized at all, could be achieved by any 345 kV line that “connects the dots” between the proposed west and east MVP projects. (Hahn, Tr. 67; Beuning, Tr. 114) As American Transmission Company (ATC) witness Dale Burmester testified, the regional benefits associated with a continuous 345 kV circuit from Minnesota to Wisconsin can be achieved irrespective of the solution the Commission selects for resolving the study area’s local reliability need. (Surrebuttal-ATC-Burmester-2 to 3) Thus, the Applicants proposal is not needed to provide any regional benefits.

⁶ The MISO Board of Directors recently approved a portfolio of 17 MVP projects that purport to provide multiple kinds of benefits, including reliability, public policy, and economic benefits to the MISO region. (Direct-CUB-Hahn-25 to 26) Because MVP projects purport to provide benefits for the entire MISO region, costs of MVP projects are shared across the MISO region on a load ratio share basis. (Direct-CUB-Hahn-22 and 27)

3. The costs for the Applicants' proposal have risen while need for a transmission solution has decreased.

As explained above, the Applicants proposal is excessive for meeting local reliability needs and is not necessary for the provision of any regional benefits. The cost of the Applicants proposal also exceeds the benefits. The Applicants estimate the cost for the portion of the line that is to be located in Wisconsin to be between approximately \$195 million and \$234 million depending on the route. (Ex.-PSC-Rineer-1, part 6 of 78, p. 47; Ex.-Applicants-Stevenson-11) The fully loaded cost estimate for the Applicants entire Hampton to Brookings to La Crosse project ranges from approximately \$504 million to \$544 million, again depending on the route. (*Id.*) However, those cost estimates do not reflect the amount Wisconsin ratepayers would pay for the Applicants' proposal.

The Applicants' proposal has been classified by MISO as a Baseline Reliability Project (BRP). That means the cost of the project subject to BRP cost allocation⁷ would be allocated as follows: 20 percent would be allocated to MISO transmission pricing zones in relationship to their peak loads, while the remaining 80 percent of costs are allocated based upon a Line Outage Distribution Factor (LODF) methodology. In brief, the LODF methodology attempts to allocate costs to those transmission owners whose expected line loadings are affected by the project. This means that Wisconsin ratepayers will not only pay for those facilities physically located in Wisconsin, but may pay for portions of those located in Minnesota as well. (Direct-CUB-Hahn-23)

⁷ Because some of the Applicants were not members of MISO when the BRP cost allocation was assigned to the project and because portions of the Minnesota part of the project were classified as "Other" rather than BRP, some costs will be paid by some of the Applicants directly outside of the BRP cost allocation process. (Rebuttal-Applicants-Lehman-4 to 5; Direct-CUB-Hahn-23) Thus, not all of the costs of the Project will be shared according to the BRP cost allocation methodology. However, the Applicants have not identified the exact relationship of the costs to be paid directly by certain owners and the costs to be shared under the BRP cost allocation methodology. Nor have the Applicants identified the costs to Wisconsin ratepayers under the BRP methodology. (*See* Lehman rebuttal testimony and Hahn surrebuttal testimony)

The Applicants have not identified the amount Wisconsin ratepayers would have to pay under either the direct allocation of costs method or the BRP cost allocation method. Nor have the Applicants determined exact ownership estimates for the Project. In response to Mr. Hahn's efforts to estimate the cost to Wisconsin ratepayers, the Applicants submitted rough estimates of their own (*see* Rebuttal-Applicants-Lehman testimony and Ex.-Applicants-Lehman-2 and 3). However, the Applicants' BRP cost allocation estimate relied on the application of projected ownership shares and not the LODF methodology required under the MISO tariff. (Surrebuttal-CUB-Hahn-10) Thus, although total construction costs are known, the cost to Wisconsin ratepayers to construct the project is still not known. Applicants seeking approval from the Commission to construct transmission lines should be required to identify the costs to Wisconsin ratepayers of constructing the proposed line. Evaluating the costs of a project to Wisconsin ratepayers in comparison to the benefits of a project to Wisconsin ratepayers is difficult without knowing the costs of the project to Wisconsin ratepayers. (Surrebuttal-CUB-Hahn-10)

What we do know is that the overall construction cost of the project has been steadily increasing since cost estimates were announced in MTEP 2008 while projected load for the study area has been steadily decreasing. (Direct-CUB-Hahn-28) In other words, the estimated cost for the project has increased while need for the project has decreased. (Direct-CUB-Hahn-27) In addition, as discussed in more detail below, the cost of the project exceeds the cost of viable lower voltage alternatives. (Direct-CUB-Hahn-32 to 33; Surrebuttal-PSC-Sirohi-7) Thus, costs of the project are disproportionate to the project's benefits to Wisconsin ratepayers. (*Id.*; Wis. Stat. § 196.491(3)(d)3t)

4. The Applicants' proposal is not in the public interest.
 - a. The Applicants' proposal is not in the public interest considering economic, reliability and environmental and aesthetic factors and individual hardships.

In addition to being excessive for the study area's reliability needs and to not being cost effective for Wisconsin ratepayers, the Applicants' proposal also faces significant environmental and aesthetic hurdles along each of the proposed routes. The shortest and least costly route that the Applicants identified is the Q1-Highway (Hwy) 35 route. (Ex.-PSC-Rineer-1, part 6 of 78, p. 48) This route would use existing right-of-way and would be in the same corridor as an existing DPC 161 kV transmission line from Alma to North La Crosse. (Joint Application, pp. 2-3 to 2-7) This is significant because DPC must rebuild its Q1 line regardless of whether or not the Applicants' proposal is approved. (Direct-Applicants-Thompson-7) Thus, there will be fewer costs overall and fewer environmental impacts if the DPC rebuild can occur at the same time and in the same location as a new line being installed. (Direct-Applicants-Thompson-4 to 8)

However, the Department of Transportation has expressed concern with constructing a 345 kV project on the Q1-Hwy 35 route. (*See, e.g.*, Direct-WisDOT-Fasick-8) The poles for the Applicants 345 kV proposal are significantly taller and wider than the existing poles along the Q1 route for DPC's 161 kV line (poles for the proposed 345 kV line would be approximately 150 feet tall as compared to the approximately 90 feet tall poles for a 161 kV line and would require a right-of-way width of approximately 150 feet as opposed to the current right-of-way width ranging between 70 and 80 feet). (Joint Application, pp. 2-25 to 2-26⁸; Ex.-PSC-Rineer-1, part 6 of 78, pp. 40-41) Thus, the aesthetic and environmental impact is significantly altered by adding a 345 kV line on the Q1-Hwy 35 route.

⁸ Pole height estimates are approximations based on the average range of heights identified for varying structures.

But other entities have expressed similar concerns regarding the other routes. For instance, the Department of Agriculture, Trade and Consumer Protection submitted comments noting that each of the non-Q1-Hwy 35 routes negatively impacts farmland significantly greater than the Q1-Hwy 35 route. (Ex.-PSC-Rineer-2, part 2 of 9, pdf pp. 71-72) Numerous landowners in the study area also testified or submitted comments for and against each of the proposed 345 kV routes. (See Ex.-PSC-Rineer-2, Transcript Volumes 5 through 8)

A 345 kV transmission line through the study area is excessive from a reliability and cost perspective and negatively impacts environmental and aesthetic factors in addition to creating significant individual hardships. Thus, the Applicants' proposal is not in the public interest considering economic, reliability and environmental and aesthetic factors in addition to individual hardships. Wis. Stat. §§ 196.491(3)(d)3. and 4.

- b. The Applicants' proposal is not in the public interest considering alternative sources of supply.

In addition to not being in the public interest for the reasons identified above, the Applicants' proposal is not in the public interest considering alternative sources of supply. As noted, the Applicants' proposal would nearly double the critical load level for the study area from the Applicants' estimate of 430 MW to 750 MW and would nearly triple the planning period typically used for transmission projects (i.e., from 20 years to 60 years). (See *infra*, p. 10) On the other hand, a proposal designed to meet an acceptable 20-year planning period would only need to increase the critical load level from the Applicants' estimate of 430 MW to 550 MW. (*Id.*)

There are several such proposals in this record. For instance, the Applicants identified a 161 kV alternative that would increase the critical load level, without considering either of the French Island Units, from 430 MW to 550 MW (the Rochester to North Briggs 161 kV

Alternative). (Direct-CUB-Hahn-28) That alternative costs \$176 million less than the Applicants' proposal on a fully loaded cost basis. (Ex.-Applicants-Stevenson-11) The Applicants also identified a reconductor-only option which would involve reconductoring some of the existing 161 kV and 69 kV facilities in the study area and would increase the critical load level in the study area to 600 MW. (Direct-PSC-Sirohi-8) This option is even less expensive and would cost \$207 million less than the Applicants proposal on a fully loaded cost basis. (Ex.-Applicants-Stevenson-11) These options would meet the load needs in the study area for an acceptable and reasonable planning period and would better match the costs and benefits to Wisconsin. (Surrebuttal-CUB-Hahn-3; *see also* Surrebuttal-PSC-Sirohi-7) The next section of the brief discusses an additional alternative that provides the same benefits of the Rochester to North Briggs 161 kV Alternative and the reconductor alternative with the addition of an option to connect the two proposed MVPs in the future if the Commission determined such connection was warranted.

B. Mr. Hahn's Proposed 345 kV/161 kV Hybrid Is a Viable, Less Costly, and Less Environmentally and Aesthetically Impactful Alternative to the Applicants' Proposal.

For the reasons explained above, the Commission should reject the Applicants' proposal. In rejecting the proposal, the Commission should also direct the Applicants to study the 345 kV/161 kV hybrid alternative that Mr. Hahn identified in this proceeding. The primary problems with the Applicants' proposal are that it is excessive in relation to the need in the study area, it is more costly than alternatives, and it has significant environmental and aesthetic impacts. Mr. Hahn identified an alternative proposal that meets the need in the study area with a lower voltage solution that costs less than the Applicants' proposal and has fewer environmental and aesthetic impacts. It also provides the option for receiving the purported regional benefits associated with

connecting the two proposed MVP lines if those benefits are later deemed warranted by this Commission.

Under Mr. Hahn's hybrid proposal, the Applicants would construct a 345 kV line across the Mississippi River at Alma and build a new 345 kV/161 kV substation at Alma. (Direct-CUB-Hahn-31; Surrebuttal-CUB-Hahn-5) The 345 kV line would terminate at the new substation and a new 161 kV line would be constructed as a double-circuit along the existing Q1 161 kV line. (*Id.*) The Applicants studied a modification to Mr. Hahn's proposal that included a 345 kV line across the Mississippi River terminating at Alma, but ran the 161 kV line from Alma to north La Crosse along the Arcadia route instead of the Q1 route. (Second Supplemental Direct-Applicants-Stevenson-2) The Applicants power flow analysis of that option yielded a critical load level of 600 MW. (Ex.-Applicants-King-11, p. 11) Given that Mr. Hahn's hybrid alternative uses a shorter route for the 161 kV (the Q1 instead of Arcadia), the critical load level for Mr. Hahn's proposal would be at least 600 MW. (Surrebuttal-CUB-Hahn-5) Under Mr. Hahn's load forecast, the 600 MW level would be met in the year 2042. (*Id.*)

Mr. Hahn's hybrid option is less costly than the Applicants' proposal. (Direct-CUB-Hahn-32 and 33; Hahn, Tr. 43) It has less visual and aesthetic impact because it maintains the voltage level, pole structure, and right-of-way akin to the existing Q1 161 kV facilities. By allowing the 345 kV to cross the Mississippi River into Wisconsin, it also provides an option for future connection of the La Crosse to Madison MVP project, if the Commission later finds that proposed project warrants approval. (Direct-CUB-Hahn-32 to 33; Hahn, Tr. 37) As ATC witness Mr. Burmester explained, the La Crosse to Madison project could interconnect at any point in the study area, including Alma:

This continuity would be achieved by establishing the interconnection point of the Badger Coulee Project at any point between Alma and the expanded study area for the Badger Coulee Project north and east of La Crosse. A continuous 345 kV circuit from Minnesota to Wisconsin can be achieved irrespective of the solution the Commission selects for resolving the La Crosse area reliability need.

(Surrebuttal-ATC-Burmester-2) In other words, the La Crosse to Madison project could become the Alma to Madison project and have the same purported regional benefits as the Applicants' proposal. MVP cost sharing could also be had for the Alma to Madison project. (Surrebuttal-CUB-Hahn-6 to 7)

Mr. Hahn's hybrid alternative would also solve a paradox that has arisen in this proceeding. The Applicants argue that their proposal is necessary to meet the reliability needs in the study area. However, when it is pointed out that their proposal is significantly more than is needed to meet the reliability needs in the study area, the Applicants shift their argument to a need for regional benefits. But when it is pointed out that the costs of their proposal would largely be borne on a local basis and no regional benefits are achieved solely by construction of the Applicants' proposal, the Applicants shift their argument back to the local need in the study area. The Applicants cannot have it both ways.

If the Applicants' proposal is needed for reliability in the study area, it is excessive and not cost effective for that purpose and should be rejected. If the Applicants' proposal is needed for regional benefits, the costs outweigh the benefits because there are no regional benefits associated with only the Applicants' proposal (since the purported regional benefits are dependent on installation of the La Crosse to Madison MVP to the east). Moreover, if the Applicants' proposal is needed for regional benefits, then the region should pay for the line, not local load. (Direct-CUB-Hahn-27)

The Applicants' proposal is not classified as an MVP project. It was classified as a BRP, that is, a project designed primarily to meet local reliability needs. (Direct-CUB-Hahn-26 to 27) Thus, it should be treated as a project that is designed to meet local reliability needs. Rather than attempting an analysis of the regional benefits that may be provided by the Applicants' proposal in conjunction with the La Crosse to Madison project, the analysis of regional benefits should occur in the context of the analysis of the La Crosse (or Alma) to Madison project. In the meantime, the need in the study area can be addressed, at lower cost and with less environmental and aesthetic impacts, by Mr. Hahn's hybrid alternative.

In sum, there is no sound basis on which to approve the Applicants' proposal when the local need can be met through a less expensive and less environmentally intrusive alternative that provides flexibility for regional benefits to be received, if warranted, at a later date. Thus, the Commission should reject the Applicants' proposal and direct the Applicants to study Mr. Hahn's proposed hybrid alternative in order to solve the study area's reliability need and DPC's need to rebuild the Q1 line.

III. CONCLUSION.

For the reasons stated above and in the record in this proceeding, the Commission should reject the Applicants' proposal as contrary to the CPCN requirements. The Applicants' proposal is excessive relative to the local need in the La Crosse area, contrary to Wis. Stat. §§ 196.49(3)(b)2. and 196.491(3)(d)5., and cannot be justified on the basis of regional need because no regional benefits arise from the project by itself, contrary to Wis. Stat. § 196.491(3)(d)3t. The cost of the project is excessive in relation to the purported benefits and as compared to viable alternatives, and the project is not in the public interest considering economic, reliability,

environmental factors, alternative sources of supply, and individual hardships. Wis. Stat. §§ 196.491(3)(d)3t and 196.491(3)(d)3.

In rejecting the Applicants' proposal, the Commission should instruct the Applicants to study the 345 kV/161 kV hybrid alternative developed by Mr. Hahn. Mr. Hahn's hybrid proposal is a viable, less costly, and less environmentally and aesthetically impactful alternative to the Applicants' proposal that also provides flexibility for receiving the purported regional benefits associated with the La Crosse to Madison project, if such project is later deemed warranted by the Commission.

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Respectfully submitted,

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