



Public Service Commission of Wisconsin

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Public Service Commission of Wisconsin
RECEIVED: 11/21/13, 11:05:10 AM

November 21, 2013

Mr. Stephen Parker, Manager, State Regulatory Affairs
American Transmission Company
P.O. Box 47
Waukesha, WI 53187-0047

Re: Joint Application of American Transmission Company LLC
and Northern States Power Company–Wisconsin, as Electric
Public Utilities, for Authority to Construct and Operate a
New 345 kV Transmission Line from the La Crosse area, in
La Crosse County, to the Greater Madison area in Dane
County, Wisconsin. The project is Referred to as the Badger
Coulee Project.

5-CE-142

Dear Mr. Parker:

On October 22, 2013, American Transmission Company and Northern States Power Company–Wisconsin (ATC, NSPW, and together, applicants) filed an application with the Public Service Commission of Wisconsin (Commission) for authority to construct and place into operation a new high-voltage electric transmission line. The proposed project would extend from the La Crosse, Wisconsin area to the Madison, Wisconsin area, and is referred to by the applicants as the Badger-Coulee 345 kV Transmission Line Project.

The Commission and the Wisconsin Department of Natural Resources (DNR) have reviewed the application to construct the facilities described above. The Commission, under Wis. Stat. § 196.491(3)(a)2. and Wis. Admin. Code § PSC 111.53, finds the Certificate of Public Convenience and Necessity (CPCN) application to be incomplete because of items in the attached lists, which were identified as missing, incomplete, or requiring clarification. Separate lists are included for items in the areas of environmental review and project need.

While both agencies' staff devoted considerable time to reviewing the application, the attached list should not be considered final. It is possible that subsequent staff review may identify areas requiring requests for additional information or clarification in the form of a data request.

Please keep in mind that the information requirements listed in the attachment will be necessary to continue with the timely review and processing of the CPCN application. This information will be required to complete the record from which the Commission will make its decision whether to approve, modify, or deny the CPCN application under Wis. Stat. § 196.491(3)(d). Providing this information in a timely manner is imperative to avoid delays in the Commission's review of the CPCN application and the DNR review of other permit applications.

Mr. Stephen Parker
5-CE-142
Page 2

Wis. Stat. § 196.491(3)(a)2. provides that an applicant may supplement and re-file an application that the Commission deems incomplete. The Commission, however, will not consider the application complete until the applicants have met all of the CPCN application standards to the satisfaction of the Commission and DNR. Commission and DNR staff are available to meet with the applicants to clarify and discuss any of the completeness items prior to a new submission.

For items included in the attachment that require the text of the original application to be edited, please format responses in “redline” fashion. For responses to these items, organize information, data, or narrative in a way that appends or replaces the pages included in the original application. Visually, it may be beneficial to use a different color paper for any substitute printed copies of redlined pages, if appropriate.

If you have any questions regarding this letter, please contact the docket coordinator Jim Lepinski at (608) 266-0478.

Sincerely,



Robert Norcross
Administrator
Gas and Energy Division

RDN:JAL:cmk:DL:00893823

Items Identified as Missing, Incomplete, or Requiring Clarification – Environmental Review
Items Identified as Missing, Incomplete, or Requiring Clarification – Project Need

Docket 05-CE-142

Items Identified as Missing, Incomplete, or Requiring Clarification – Environmental Review

- 01.01. Provide WDNR with the Pictometry data collected for this project.
- 01.02. Provide WDNR with MS Excel and MS Word versions of the application materials; and, ArcGIS shapefiles on disc or flash drive.
- 01.03. (AFR Introduction, p. iv.) There are inconsistencies in names of feature classes between the geodatabase files, ArcReader layer names, and the GIS data listing spreadsheet that accompanied the filing. Some items are missing. Review the submittals and correct any inconsistencies.
- 01.04. (AFR Introduction, p. iv.) Provide a GIS layer showing the boundaries of WisDOT scenic easements.
- 01.05. (AFR Introduction, p. iv.) Provide a GIS layer showing the boundaries of county scenic easements.
- 01.06. (AFR Introduction, p. iv.) Provide a GIS layer showing homes under construction that do not appear on aerial photos.
- 01.07. (AFR Introduction, p. iv.) Provide a GIS layer showing the proposed ROW boundaries for the project.
- 01.08. (AFR Introduction, p. iv.) Provide GIS shapefiles showing both the fenced areas and property boundaries for the North Madison, West Middleton, and Cardinal Substations.
- 01.09. (AFR Introduction, p. iv.) Several GIS layers contain abbreviations in their attributes that are not defined. Provide a legend for the abbreviations used in the feature classes, E_Floodplain, E_Land_Cover_MASTER_Clip, E_Habitat_Types_MASTER, and T_Airports_Point.
- 01.10. (AFR Introduction, p. iv.) Pictometry Local layer does not work in ArcMap.
- 01.11. (AFR Introduction, p. iv.) If possible, provide supporting software and files showing the oblique views of route for use by PSCW and WDNR staff.
- 01.12. (AFR Introduction, p. iv.) ArcReader Figures 3 and 4, should include sub-segment, sub-segment nodes, EMF segments, and EMF sub-segment nodes layers.
- 01.13. (AFR Introduction, p. iv.) For ArcReader Figure 4, symbolize the field delineated wetlands differently so that the proposed routes are not obscured by the field-delineated

wetlands symbology. It may be useful to use a pattern symbol with a transparent background.

- 01.14. (AFR Introduction, p. iv.) Route Segment layers (S_Proposed_Routes, S_Proposed_Routes_Subsegments, and S_CPCN_EMF_CL) and their respective node layers indicate an overlap of Segment P and N. Nodes between the two segments are not located in the same place. Provide corrected layers.
- 01.15. (Application p. 15; AFR Section 1.6.1.) Provide documentation that WDNR has no substantial objections to the project crossing WDNR-owned state properties.
- 01.16. (Application p. 15; AFR Section 1.6.1.) Discuss the procedure and timeline for acquiring easements across properties purchased with WDNR Knowles-Stewardship Program funds.
- 01.17. (Application p. 15; AFR Section 1.6.1.) Provide documentation that USFWS has no substantial objections to the project crossing USFWS-owned properties.
- 01.18. (Application p. 15; AFR Section 1.6.1.) Provide documentation that the WDNR and the National Park Service have no substantial objections to the construction of the proposed project on lands that were in part purchased with federal grants (LAWCON funds).
- 01.19. (Application p. 15; AFR Section 1.6.1.) Discuss the procedure and timeline for acquiring easements across properties purchased with LAWCON funding.
- 01.20. (Application p. 18; AFR Sections 1.6.4 and 1.6.4.3.) Identify any abandoned railroad ROWs that are crossed or shared by route segments.
- 01.21. (Application p. 19; AFR Section 1.6.5.3.) Provide documentation from Northern Natural Gas Company that the proposed ROW sharing of the ROW is acceptable to the company.
- 01.22. (Application p. 20; AFR Section 1.6.6.) Provide documentation from WisDOT showing that it has agreed with the applicants preferred option of overlapping scenic easements.
- 01.23. (Application, p. 21; AFR Section 1.6.6.2.) Provide copies of any WisDOT comments regarding the preliminary constructability report as they become available. Also, provide any updated preliminary constructability report resulting from WisDOT comments.
- 01.24. (Application p. 22; AFR Section 1.7.1. and Section 6.6.3.) Verify that the applicants will avoid construction activities during BNHC exclusion dates for all listed species.

- 01.25. (Application p. 22; AFR Section 1.7.1. and Section 6.6.3) Verify that the applicants will avoid construction/disturbance during grassland bird breeding season at the Mississippi Valley Conservancy properties.
- 01.26. (Application p. 22; AFR Section 1.7.1.) Verify that the applicants will avoid construction schedule conflicts with seasonal recreational activities (e.g., hunting, etc.) on WDNR properties.
- 01.27. (Application p. 22; AFR Section 1.10.) Provide a mailing list of organizations that have expressed interest in the project but may not own property within 300 feet of the proposed routes (e.g., Sand County Foundation, Aldo Leopold Foundation, etc.).
- 01.28. (Application p. 32; AFR Section 3.) In Section 3 (Magnetic Fields) of the application, the references to items within Appendix G is confusing in that it refers to Appendices and Exhibits without including the location of Appendix G. For purposes of public understanding, clarify the references in Section 3.
- 01.29. (Application p. 34; AFR Section 4.1.) Provide a cost estimate for constructing on properties with WisDOT scenic easements.
- 01.30. (Application p. 41; AFR Section 5.2.) The text in Sections 5.2.1, 5.2.2., and 5.2.3 seems contradictory. Clarify or explain how existing easements that are overlapped by the proposed ROW would be handled at the time of easement acquisition. Clarify whether the existing easements would or would not be re-negotiated.
- 01.31. (Application p. 41; AFR Sections 5.2.1.) The AFR requires information about changes to existing easements so that affected landowners and Commission staff can evaluate the extent of potential land use changes and restrictions on properties. Table 2 provides some information about ROW width requirements, but the application does not specify the direction existing utility ROWs would be expanded for areas where the proposed ROW would overlap an existing ROW. Provide information that details the direction and width of all proposed existing ROW expansions.
- 01.32. (Application pp. 41 and 117; AFR Sections 5.2.2 and 7.2.) The AFR's require information about changes to existing easements so that affected landowners and Commission staff can analyze the potential impacts to existing land uses and property owners. The application does not indicate the locations where there is an existing utility ROW adjacent to but not overlapping the proposed ROW. In these locations the addition of a 345 kV transmission line would compound the impacts of the existing utility ROW. Indicate the locations where there is an existing utility ROW adjacent but not overlapping the proposed 345 kV ROW. Describe the potential impacts as they relate to issues of aesthetics, construction, and future land use.

- 01.33. (Application p. 44-60; AFR Section 5.3.) To adequately understand line and ROW configurations, revise all application text and tables in Section 5.3 (where appropriate) to include sub-segment references, rather than segment ID or mileage.
- 01.34. (Application p. 46-48; AFR Section 5.3.5.) Identify in GIS and/or by additional maps, those distribution lines listed in Tables 5.3.5-1 and 5.3.5-2 that would be relocated.
- 01.35. (Application p. 60, AFR Section 5.4.) Provide an index map showing route sub-segments.
- 01.36. (Application p. 68; AFR Sections 5.4 and 7.4.2.) Identify the sub-segment location of residences listed in Appendix B, Table 3 that would be located in close proximity to the centerline of the proposed transmission routes. Identify those residences, if any, that would be located entirely or partially within the proposed ROW. If any residences are located partially or entirely within the ROW, explain how the applicants intend to handle these properties with respect to easement acquisition. Include information regarding whether any property buy-outs are anticipated to be necessary.
- 01.37. (Application. pp. 69-70; AFR Section 5.4.5.2.) Provide additional details regarding the potential impact, approval process, and timing associated with work on WDNR property.
- 01.38. (Application. pp. 69-70; AFR Section 5.4.5.2.) Specify the “other state owned land(s),” crossed by the Northern Route, located along Segments N6 and G2.
- 01.39. (Application p. 71; AFR Section 5.5.) Describe in detail the proposed construction methods for Segment I3 involved with crossing the Wisconsin River in close proximity to the dam.
- 01.40. (Application pp, 72, 103; AFR Sections 5.5.1 and 6.4.3.) Construction matting placement and use must not promote the spread of invasive species. Revise the narrative describing mat use to include language to this effect.
- 01.41. (Application p. 80, AFR Section 5.6.) Describe typical time periods during which each helicopter landing pad would be used.
- 01.42. (Application p. 80, AFR Section 5.6.) Discuss whether construction laydown areas could also be used as helicopter landing pads.
- 01.43. (Application p. 81; AFR Section 5.6.1.) Describe whether the wire pulling/handling areas would avoid wooded wetland impacts that are otherwise avoided for transmission line work. If not, provide additional details that document why avoidance of wooded wetlands is not practicable.

- 01.44. (Application p. 85; AFR Section 6.1.2.) Identify the location of farm parcels located along the proposed routes that use pivot irrigation.
- 01.45. (Application p. 85; AFR Section 6.1.2.) Identify the location of specific farm parcels in the vicinity of the proposed project that make use of aerial seeding and/or spraying.
- 01.46. (Application p. 85; AFR Section 6.1.2.) Identify the location of specific farm parcels of any certified organic farms or farms that utilize organic management practices.
- 01.47. (Application p. 85, AFR Section 6.1.2.) Summarize the total length of windbreaks that would be impacted for each sub-segment.
- 01.48. (Application p. 86, AFR Section 6.1.3.) Discuss why the DATCP database of Farmland Preservation Plan filers may not be comprehensive.
- 01.49. (Application p. 88, AFR Section 6.1.4.) Discuss whether poles would generally be located directly on field edges or offset from them.
- 01.50. (Application p. 89; AFR Section 6.1.5.) Provide documentation from DATCP indicating that an AIS is not required for this project.
- 01.51. (Application p. 89; AFR Section 6.1.5.) Provide copies of any correspondence with DATCP regarding the project.
- 01.52. (Application p. 91; AFR Section 6.) Discuss the concerns raised by the Leopold-Pine Island Important Bird Area partnership regarding the two proposed Segments H and I and the proximity of these natural resource properties to the proposed routes. Discuss any potential mitigation of their concerns including the different impacts associated with Segments H versus I, the pros and cons of using different structure types (including those not proposed in the application), the timing of the proposed construction, and how any or all of this might likely impact habitats, bird flight patterns, and bird use of the resource.
- 01.53. (Application p. 91; AFR Section 6.2.) Discuss the potential natural resource impacts and concerns raised with constructing through and adjacent to the New Amsterdam Grassland property.
- 01.54. (Application p. 91, AFR Section 6.2.2.) Discuss the conditions of conservation easements crossed by proposed routes, whether easement holder approvals are necessary, describe potential landowner impacts, and if the proposed project is consistent with easement goals for each easement.
- 01.55. (Application p. 93, AFR Section 6.3.) Clarify the meaning of the 3rd sentence in the first paragraph of Section 6.3. Explain the significance of prior cleared forested ROW between agricultural areas. Should “agricultural areas” have been “forested areas?”

- 01.56. (Application pp. 96-97, AFR Section 6.3.1.) Describe the uses of the municipally-owned forest parcels.
- 01.57. (Application p. 98, AFR Section 6.3.2.1.) Provide a GIS shapefile and a layer in the ArcReader projects identifying parcels enrolled in the MFL or FCL programs.
- 01.58. (Application p. 98, AFR Section 6.3.3.) Provide more detail on the clearing method of “cut and scatter.” Discuss if it would involve the chipping of trees.
- 01.59. (Application p. 99, AFR Section 6.3.3.) Clarify whether chipping would be used in wetlands. If so, explain why this technique would be used.
- 01.60. (Application p. 103; AFR Section 6.4.4.) The application states that Table 6.4.4 lists only high-quality wetlands that were accessible. Discuss the percentage of each segment or sub-segment (as appropriate) that was not accessible and where no evaluation for high-quality wetlands was conducted. Identify the sub-segments for which the majority of the sub-segment was deemed inaccessible for this purpose.
- 01.61. (Application p. 105; AFR Section 6.4.4.3.) Provide additional details regarding how applicants plan to address state and federal wetland compensatory mitigation requirements.
- 01.62. (Application p. 105; AFR Section 6.5.) All waterways that are shown on the WDNR 24k Hydro layer that were not easily observable in the field and/or aerial photo review should be included in Table 8 (Appendix F) until a navigability determination is completed by the WDNR.
- 01.63. (Application pp. 106, 131; AFR Sections 6.5.2 and 8.0.) Verify that application materials, including plans, have been provided to the riparians where the applicants are proposing the placement of structures below the ordinary high water mark.
- 01.64. (Application pp. 107, 132; AFR Sections 6.5.3 and 8.0.) Proposed obstruction to navigation may require the placement of waterway markers. Verify whether such markers are required. (Forms and guidelines can be found at: <http://dnr.wi.gov/topic/boat/ordinances.html>.)
- 01.65. (Application p. 113, AFR Section 6.7.1.) Discuss the prevalence of annosum root rot in the project area. Identify locations of the disease, concentrations of pine trees along the routes, and potential management/mitigation strategies to prevent the spread of the disease.
- 01.66. (Application p. 115; AFR Section 6.8.) Describe how the proposed transmission poles on Segment H would affect the view shed from the National Historic Landmark, the Aldo Leopold Shack property. Suggest methods to mitigate the impacts.

- 01.67. (Application p. 115; AFR Section 6.9.) Verify whether the proposed restoration of disturbed areas would comply with WDNR approved Technical Standards/Best Management Practices for erosion control.
- 01.68. (Application p. 116; AFR Section 6.9.3.) Discuss the monitoring plan for identifying the spread of invasive species after the construction of the project is completed. Discuss the criteria that the applicant would use to determine the source and cause of invasive species that are observed beyond pre-construction conditions.
- 01.69. (Application p. 116; AFR Section 6.9.3.) If it is determined that invasive species have been spread due to the construction of the proposed project, discuss the scope and type of additional monitoring, management, and or mitigation that the applicants would conduct.
- 01.70. (Application p. 117; AFR Section 7.2.) Discuss in detail the potential impacts of the proposed route Segments P3 and P4 through the town of Holland. In specific, discuss how the project would affect areas platted for residential development such as the August Prairie Development, parcels where home construction is planned or has already started (construction visible on aerial photos and residential construction started after the photos were taken), and any planned future developments by the township or property owners. Discuss potential mitigation strategies of the identified impacts.
- 01.71. (Application p. 118; AFR Section 7.4.) Provide additional details regarding the potential impacts of constructing Segment I3 through the Wisconsin Dells business district and how the line would affect a commemorative flag pole and parking lot(s) that provide overlooks to the dam. Discuss potential mitigation strategies of the identified impacts and whether any discussions have been held with the city of Wisconsin Dells.
- 01.72. (Application p. 118; AFR Section 7.5.1.) Provide photo simulations that depict the areas of concern for the following areas: Segment P3 along Pedretti Street; Segment I3 in front of the Wisconsin Dells Dam; Segment I4/I5 where the structures and line would be visible to recreation users of the Wisconsin River; the view shed from the Aldo Leopold Shack and property toward Segment H for single pole and H-frame structures; and, the view shed of Mirror Lake State Park crossing.
- 01.73. (Application p. 118, AFR Section 7.3.) Provide land use plans for the town of Hillsboro in Vernon County.
- 01.74. (Application pp. 122-6; AFR Section 7.7.) Provide a GIS shapefile in line format showing runway length and orientation for the airstrips listed in Section 7.7.2 of the application. This shapefile may be prepared from aerial photography.
- 01.75. (Application pp. 122-6; AFR Section 7.7.) Provide a GIS shapefile showing the FAA surfaces used in the Section 7.7.2 analysis, if this analysis was done using GIS.

- 01.76. (Application p. 122, AFR Section 7.7.2.) Identify the type of use of each airport/airstrip and identify those that are open for public use.
- 01.77. (Application p. 126, AFR Section 7.8.2.) Discuss the degree of potential interference with the function of communication towers. Describe any mitigation measures that would be used.
- 01.78. (Application p. 132; Section 8.0.) For any underground electric distribution work that involves wetland and/or waterway impacts, provide detailed application information including an Alternatives Analysis.
- 01.79. (Application p. 137; AFR Section 9.0) Provide the WDNR-approved Rare Bird Survey plan, documentation that the survey was approved by WDNR, and the likely submittal date for the results.
- 01.80. (Application p.137; AFR Section 9.1.) Submit the WDNR, Bureau of Natural Heritage Conservation (BNHC)-approved ER review and supporting documents.
- 01.81. (Application Appendix A; AFR Section 1.8.) Figures 3 and 4 contain a number of pages with connecting map page labels that are incorrect. For example the "See Page" label reference on pages 148 to 156 are on the incorrect sides of the page and should be reversed for accuracy. Additionally, for those pages where the route continues off of the top or bottom of the page, the labels on the sides of the page seem confusing and potentially incorrect. Review all connecting page references for accuracy.
- 01.82. (Application Appendix A; AFR Section 1.8.) Add sub-segment labels to Figure 3.
- 01.83. (Application Appendix A; AFR Section 1.8.) Figure 4 has pages with no sub-segment ID labels. For example, Segment G is not labeled. Verify that all pages have at least one sub-segment ID.
- 01.84. (Application Appendix B, Table 3; AFR Section 5.4.) Use sub-segment ID, for purposes of clarity.
- 01.85. (Application Appendix B, Table 4; AFR Section 5.4.) Use sub-segment ID, for purposes of clarity.
- 01.86. (Application Appendix G; AFR Section 3.) In Appendix G Exhibit 1, EMF Figures, figures on the same page are drawn to different relative scales. For example, Figure 336, uses different scales for the CapX 161 kV double-circuit structure versus the proposed Badger-Coulee 345 kV structure. Review the appendix and correct all figures so that they are internally consistent.

Docket 05-CE-142

Items Identified as Missing, Incomplete, or Requiring Clarification – Project Need

- 01.87. (Application p. 7; AFR Section 1.0.) Identify the owners and investors of the proposed project and percent of ownership of each (Wis. Admin. Code § PSC 111.55(6)).
- 01.88. (Application p. 7; AFR Section 1.0.) Discuss how DPC, WPPI, and/or SMMPA as investors of the proposed project would change the ownership for ATC and NSPW.
- 01.89. (Application, p. 22, AFR Section 1.7.) Provide the date by which Badger-Coulee must be completed and in-service, and explain what factors determine this time frame.
- 01.90. (Application pp. 24-30; AFR Section 2.0.) This section of the application discusses the need for and alternatives to the proposed project. The discussion refers to various sections of Appendix D, but does not provide a comprehensive summary of the results of the analysis. In order to allow for the public to better understand the need for the proposed project, revise and expand Section 2.0 of the application to include a comprehensive discussion of the need for and alternatives to the proposed project. Include in the revised section a quantitative summary of the costs and benefits of the proposed project for both Wisconsin and the MISO footprint, with a clear indication of each in supporting tables and data files. In this expanded summary, specifically address areas of need and alternatives including: local and regional load serving capability; regional benefits; alternatives including energy efficiency and other alternative sources of supply; and, other areas as appropriate. Include in this revised and expanded summary information included in any responses regarding questions relating to Application Appendix D.
- 01.91. (Application p. 28, Section 2.7; AFR Section 2.7.) Discuss whether and how any increased operation and maintenance costs for this project are considered in the analysis for the proposed project.
- 01.92. (Application p. 28; AFR Section 2.7.) Discuss whether and how one-time environmental impact fees and annual impact fees for the proposed project are considered in the analysis for the proposed project.
- 01.93. (Application p. 28; AFR Section 2.8.) Provide an updated reliability study to determine the base case reliability projects required. The study should reflect: lower currently projected peak and energy requirements; reliability projects that have already been completed or will be completed regardless of any 345 kV alternatives; announced retirements such as Nelson Dewey Units 1 and 2, and Alma Units 1 through 5 and any transmission upgrades required; the latest MISO generation interconnection requests, and the latest transmission interconnections. Discuss any differences in assumptions to those used in the PROMOD analysis.

- 01.94. (Application p. 30; AFR Section 2.10.1.) If DPC, WPPI, or SMMPA become investors of the proposed project, describe how the costs and benefits for ATC and NSPW change.
- 01.95. (Application p. 30; AFR Section 2.10.1.) Explain how the customer benefit savings was used as the basis of measurement of benefit to ATC and NSPW customers. Describe the origin and history of this metric, including a list of projects that it has previously been utilized for. List and describe its major cost components including production costs, congestion costs, FTR revenues, etc.
- 01.96. (Application p. 34; AFR Section 4.0.) Provide the annual amounts anticipated to be spent on the proposed project. List AFUDC or current return on CWIP separately.
- 01.97. (Application pp. 34 and 126-7; AFR Sections 4.1 and 7.9.) Provide a detailed breakdown of the costs included as the basis for the environmental impact fee calculations.
- 01.98. (Application pp. 34-6; AFR Section 4.0.) Update the estimated project costs to 2014 dollars.
- 01.99. (Application pp. 34-6; AFR p. vi.) Provide Tables 4.1-1, 4.1-2, 4.2-1, and 4.3-1 in MS Excel format.
- 01.100. (Application pp. 127-9; AFR p. vi.) Provide Tables 7.9-1, 7.10-1, 7.10-2, and 7.10-3 in MS Excel format.
- 01.101. (Application Appendix D generally; AFR Section 2.0.) For MS Excel files and MS Version of tables related to the need for the proposed project, provide sufficient information to identify the table from the application that the file pertains to (such as naming the MS Excel file for Table 1 as “Table 1.xls,” for instance). Also, document links to other worksheets within the same MS Excel file and other MS Excel files. The intent of this request is to ensure that Commission staff can efficiently locate MS Excel versions of tables, and can also locate supporting files in electronic materials provided by the applicants.
- 01.102. (Application Appendix D generally; AFR Section 2.4.) Provide definitions for the terms “No-Build,” “Base Case,” “Business as Usual,” “BAU,” “Reference,” and other variations used in the application. For example, “No-Build” appears only once in the application while the term “Base Case” appears in the application several times. “Business as Usual” or “BAU Reference” may refer to PROMOD, power flow, or P-V voltage stability analysis. “Reference case” for PROMOD appears to be interchangeable with “Reference Plan.”
- 01.103. (Application Appendix D, p. 7 of 263; AFR Sections 2.7 and 2.10.) Regarding Tables 1, pp. 15, 19, and Table 53, provide the capital cost allocation for the Badger-Coulee

345 kV MISO Multi-Value Project (MVP) for ATC load balancing authorities (LBA) and each of the other MISO LBA.

- 01.104. (Application Appendix D, p. 7 of 263; AFR Sections 2.7 and 2.10.) Provide a map and project list of all the MTEP11 approved MVPs.
- 01.105. (Application Appendix D, p. 7 of 263; AFR Sections 2.7 and 2.10.) Summarize the ATC cost allocations from all the other MISO MVPs.
- 01.106. (Application Appendix D, p. 7 of 263; AFR Sections 2.7 and 2.10.) Summarize the MTEP11 MVPs costs and benefits to the MISO regional footprint and the local resource zones as documented in MTEP11.
- 01.107. (Application Appendix D, p. 9 of 263; AFR Section 2.4.) Expand and clarify the discussion regarding how the project is being compared to the low voltage alternative versus a no-build option with negative reliability and electrical supply impacts.
- 01.108. (Application Appendix D, p. 9 of 263; AFR Section 2.7.) Explain how the \$550.21 million Badger-Coulee project equates to a 2012 PVRR of only \$4.25 million.
- 01.109. (Application Appendix D, pp. 9, 17 of 263; AFR Section 2.7.) Explain how the term Loss Savings is different than what is provided in the Customer Benefit Metric Section 2.4.2 for Losses.
- 01.110. (Application Appendix D, p. 9, 103 of 263; AFR Section 2.7.) Explain how the Insurance Value can be the same for all options except the Low Voltage option where it is zero.
- 01.111. (Application Appendix D, pp. 9, 103 of 263, AFR Section 2.3.) In Tables 1 and 53 of Appendix D, the avoided cost of potential projects is zero for the low voltage option. Explain why there is no avoided cost for this option. It appears that if the low voltage option is chosen, reliability needs would be met and the need for any high voltage alternative would be delayed, resulting in avoided/delayed costs.
- 01.112. (Application Appendix D, p. 10 of 263, Table 1; AFR Section 2.7.) Provide the ratepayer impacts to ATC and NSPW customers based on the applicable tariffs for the proposed project.
- 01.113. (Application Appendix D, p. 17 of 263; AFR Section 2.7.) Explain whether and how the terms “System-Failure Insurance Value,” “Insurance Value,” and what is included in the “Customer Benefit Metric” differ.
- 01.114. (Application Appendix D, pp. 20-1 of 263; AFR Section 2.3.) Explain whether the proposed Badger-Coulee project delays the need for the 345-kV Madison to Iowa project.

- 01.115. (Application Appendix D, pp. 20-1 of 263; AFR Section 2.3.) Explain whether the 345-kV Madison to Iowa project would delay the need for the proposed Badger-Coulee project.
- 01.116. (Application Appendix D, pp 20-1 of 263; AFR Section 2.3.) Explain, list, and provide cost breakdowns of any low-voltage projects already constructed or that must be constructed to address the announced retirements of the Nelson Dewey and Alma generating plants.
- 01.117. (Application Appendix D, pp. 20-1 of 263; AFR Section 2.3.) For all low voltage reliability projects, describe the mechanism by which the project costs would be recovered. For each project, include in the response a summary of which customers the individual project costs would be recovered from.
- 01.118. (Application Appendix D, pp. 20-1; AFR Section 2.3.) List any low voltage reliability projects that would be avoided if only the North Madison-Cardinal 345 kV portion of the project is constructed.
- 01.119. (Application Appendix D, p. 20-1 of 263, AFR Section 2.3.) In Tables 3 through 8, the projects included in the low voltage alternative are set out. For each of the high voltage alternatives, describe, list, and provide a cost breakdown showing which low voltage projects must be built and which low voltage projects are avoided.
- 01.120. (Application p. 27; AFR Section 2.6.1 and 2.6.2.) Provide a summary table by type and area for all hydro, wind, solar, and biomass resources in the ATC, DPC, NSPW, and MISO areas as assumed in PROMOD analysis for the years 2012, 2020 and 2026.
- 01.121. (Application Appendix D, pp. 30-75 of 263; AFR Section 2.1.) Provide a summary table comparing the actual 2012 peak (adjusted) and energy requirements for ATC, DPC, NSPW, and MISO to the peak and energy as requirements assumed in the PROMOD analysis for the 2011 MTEP study for the years 2012, 2020 and 2026.
- 01.122. (Application Appendix D, p. 32 of 263; AFR Section 2.6.) Provide a list of added and retired generation capacity for the ATC, DPC, NSPW, and MISO areas, as assumed in the PROMOD analysis for the years 2012, 2020 and 2026.
- 01.123. (Application Appendix D, p. 37 of 263; AFR Section 2.6.) Discuss specifically the potential changes in wind generation for the various futures analyzed in the six futures and the MTEP 2011 study. Provide a summary table of the actual and assumed changes of 2012 wind capacity. Include summaries for each state in the Western MISO region (Iowa, Minnesota, North Dakota, South Dakota, and Wisconsin).
- 01.124. (Application Appendix D, p. 40 of 263; AFR Section 2.3.) Provide a net PVRR analysis using a discount rate at 8.2 percent for the Badger-Coulee, Low Voltage, and 345-kV Madison to Iowa alternatives for the Slow Growth future.

- 01.125. (Application Appendix D, p. 41 of 263; AFR Section 2.3.) Provide lists of FTRs that the Customer Benefit Metrics are based upon.
- 01.126. (Application Appendix D, p. 41 of 263; AFR Section 2.3.) Provide an expanded discussion defining FTRs, how they are obtained, and traded. Discuss whether any new FTRs will be available with Badger-Coulee constructed. If so, quantify these new FTRs. Discuss whether the RIB calculation is based on FTRs available from source to sink.
- 01.127. (Application Appendix D, p. 41 of 263; AFR Section 2.3.) Within the calculation of RIB, explain whether and how additional losses from generators located further away from the load are considered.
- 01.128. (Application Appendix D, p. 47 of 263; AFR Section 2.7.) Regarding Table 17, provide the estimated revenue requirements associated with the Customer Benefit Impacts in 2020 for each of the six futures.
- 01.129. (Application Appendix D, p. 47 of 263; AFR Section 2.7.) Explain whether the estimated revenue requirements associated with the Customer Benefit Impacts in 2020 for each of the six futures include the construction cost for any required new generation facilities.
- 01.130. (Application Appendix D, p. 52 of 263; AFR Section 2.6.) Provide the current and projected PRMUCAP for the ATC, DPC, NSPW, and MISO areas as provided in the PROMOD analysis for the 2011 MTEP study for the 2012, 2020 and 2026 study years.
- 01.131. (Application Appendix D, pp. 87, 101 of 263, AFR Section 2.3.) Appendix D states that the proposed project will provide added reliability to the La Crosse area because there will be a second 345 kV line into the Briggs Road Substation. Explain if this added reliability is necessary to address a potential NERC violation.
- 01.132. (Application Appendix D, p. 97 of 263; AFR Section 2.7.) Explain why the applicants decided to pursue the Badger-Coulee project before the 345-kV Madison to Iowa project when the latter alternative appears more economical. In the response, explain the statement “In many of these analysis results, Badger Coulee is not the highest performing alternative from an ATC perspective.”
- 01.133. (Application Appendix D, p. 97 of 263; AFR Section 2.7.) Explain what is meant by “even moderate regional wind development to the west of Wisconsin.”
- 01.134. (Application Appendix D, p. 97 of 263; AFR Section 2.7.) Provide an estimate of how CO2 emissions would increase or decrease if the proposed project is constructed, across all 6 futures.

- 01.135. (Application Appendix D, p. 97 of 263; AFR Section 2.7.) Provide an explanation for what is “best” as opposed to “adequate” for the following statement: “As determined in the WWTRS, the Combination 345-kV also provides the most local reliability benefits to the western Wisconsin transmission system by providing the best voltage support, system stability and significant thermal loading relief.”
- 01.136. (Application Appendix D, p. 98 of 263; AFR Section 2.6.) Provide a summary table of the projected generation mix by type for the ATC, DPC, NSPW, and MISO areas, as assumed in the PROMOD analysis for the 2011 MTEP study for the 2012, 2020 and 2026 study years. Include a summary of energy efficiency, demand side management, renewables, natural gas, coal, nuclear, and other appropriate resources.
- 01.137. (Application Appendix D, p. 98 of 263; AFR Section 2.6.3.) Provide a summary table by type and area for all natural gas CT, natural gas CC, coal, and nuclear resources in the ATC, DPC, NSPW, and MISO areas as assumed in PROMOD analysis for the years 2012, 2020 and 2026.
- 01.138. (Application Appendix D, pp. 99-100 of 263; AFR Section 2.5.) Provide a summary table listing the estimated energy efficiency and DSM reductions for peak load and energy requirements beyond those efforts already included in the 2012 actual peak load and energy needs. Include the load growth assumptions and information provided in Section 2.1. Include in the table the additional estimated reductions for ATC, DPC, NSPW, and MISO areas as provided in PROMOD analysis for the years 2012, 2020, and 2026.
- 01.139. (Application Appendix D, p. 100 of 263; AFR Section 2.8.2.) Appendix D states: “First, it avoids the need for several lower-voltage reliability projects in Wisconsin and improves the regional reliability of the transmission system.” Provide a list of all outages over the past 10 years in Western Wisconsin that were transmission related.
- 01.140. (Application Appendix D, p. 100 of 263; AFR Section 2.8.2.) Discuss wind curtailment across MISO and how Badger-Coulee will change that curtailment. Provide separate total annual curtailments for both economic and manual curtailments for the last five years.
- 01.141. (Application Appendix D, p. 101-2 of 263; AFR Sections 2.3, 2.7, 2.10.) Regarding Table 53, provide the capital cost allocation assumptions to ATC and NSPW customers for each alternative. Also, supply the annual revenue requirements and benefits present value spreadsheet.
- 01.142. (Application Appendix D, p. 103 of 263; AFR Section 2.3 and 2.7.) Provide an MS Excel file with the same worksheets as found in the CONFIDENTIAL_Badger Coulee_Economic Evaluation_All Projects MS Excel file (which provides details for

Table 53 on p.103 of Appendix D) including a PVRR column, for each alternative, for Wisconsin, not just ATC customers.

- 01.143. (Application Appendix D, p. 103 of 263; AFR Section 2.3.) Provide a summary table listing the net project cost/benefits for the six alternatives from the Slow Growth future as shown in Table 53 of Appendix D.
- 01.144. (Application Appendix D, p.103 of 263; AFR Section 2.7.) In Table 53, update the Base Case, which is used to calculate all of the benefits of each of the alternatives for all the futures, to include the MTEP11 MVPs.
- 01.145. (Application Appendix D, p. 121 of 263; AFR Section 2.1) Provide an MS Excel spreadsheet of coincident peak load for Wisconsin for the years 2001-2013.
- 01.146. (Application Appendix D, p. 124 of 263; AFR Section 2.1) Provide an MS Excel spreadsheet listing the Wisconsin Substation loads used in power flow models. If the sum of these substation loads differ from the coincident peak load for Wisconsin for a model year, list the difference and reasons for the difference.
- 01.147. (Application Appendix D, p. 128 of 263, AFR Section 2.3.) The footnote on page 128 of 263 states that the Big Stone II generating unit was not removed from the database as it is geographically distant from western Wisconsin and therefore would not have much impact on the modeling results. Explain why this unit would have little impact while transfer of wind energy from approximately the same geographic area is one of the reasons the project is being proposed.
- 01.148. (Application Appendix D, p. 129 of 263, AFR Section 2.3.) The fuel costs in MTEP09 are distinctly different from current costs. Explain why using more current fuel costs and their effects on plant dispatch would not impact the economics of the project. Explain whether the MTEP11 sensitivity adequately addresses this issue.
- 01.149. (Application Appendix D, p. 175 of 263; AFR Section 2.8.2.) Explain why a DC solution would not be more favorable than the proposed project. In the response, list the advantages and disadvantages associated with DC lines. Describe whether there are any DC lines as part of Appendix B or C in MTEP 13.
- 01.150. (Application Appendix D, pp. 232-3 of 263; AFR Section 2.1.) For each alternative, update Tables E1, E2, and E3 for the most recently available load data.
- 01.151. (Application Appendix D, pp. 232-3 of 263; AFR Section 2.1.) Provide MISO's annual peak demand and energy sales since 2006. In the response to this item, note changes in MW and MWh by year due to exits and additions to the MISO footprint.

- 01.152. (Application Appendix D, p. 250 of 263; AFR Section 2.3.) Provide an MS Excel spreadsheet (which details Table G1) that includes annualized detail of both benefits and revenue requirements for each alternative considered.
- 01.153. (Application Appendix D, p. 253 of 263; AFR Section 2.3.) Provide an MS Excel spreadsheet of Table G3.

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