UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Citizens Energy Task Force and Save Our Unique Lands,	)	
Complainants	)	
v.	)	Docket No. EL13-49-000
Midwest Reliability Organization, Midwest Independent Transmission System Operator, Inc., Xcel Energy Inc., Great River Energy, Dairyland Power Power Cooperative, and Wisconsin Public Power Inc.	)	
Respondents	)	

ANSWER OF
THE MIDWEST INDEPENDENT TRANSMISSION
SYSTEM OPERATOR, INC.

Pursuant to Rules 206(f) and 213 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission ("FERC" or "Commission"), 18 C.F.R. §§ 385.206(f) and 385.213 (2012), the Midwest Independent Transmission System Operator, Inc. ("MISO") submits this Answer to the Complaint filed in the above-captioned docket on March 1, 2013 ("Complaint"), by Citizens Energy Task Force and Save Our Unique Lands ("CETF/SOUL" or "Complainants") against MISO, the Midwest Reliability Organization ("MRO") and several MISO Transmission Owners.[1] CETF/SOUL are seeking an order from the Commission

[1] When capitalized, the term "Transmission Owners" refers to transmission-owning members of MISO. The Transmission Owners listed as respondents in the Complaint are: Xcel Energy, Inc. , including its public utility subsidiaries Northern States Power Company-Minnesota ("NSPM") and Northern States Power Company-Wisconsin ("NSPW") (collectively, "Xcel"); Great River Energy ("GRE"); Dairyland Power Cooperative

"prohibiting" a MISO-approved 345 kilovolt ("kV") transmission project, known as the Twin Cities – La Crosse Project,[2] because, according to the Complainants, "it contributes to and/or causes electrical system instability."[3] CETF/SOUL further request that the Commission issue an Order to Show Cause requiring MISO to demonstrate why its 2008 approval of the Twin Cities – La Crosse Project should not be revoked.[4] The Complaint is without merit and should be summarily dismissed.

I. OVERVIEW

The Complaint seeks to stop the Twin Cities – La Crosse Project, in part by claiming that it was improperly approved in the 2008 MISO Transmission Expansion Planning ("MTEP")[5] process. No evidence is provided to support these allegations. The Complaint lacks specificity and fails to identify the allegedly violated statutory and regulatory requirements and explain in necessary detail MISO's actions or inactions that caused these claimed violations.

The Twin Cities – La Crosse Project was properly approved in MTEP08. The project represents a critical transmission upgrade needed to ensure that the serious grid reliability issues identified in the area are addressed in a timely fashion. These issues were well documented and analyzed in MTEP08 pursuant to MISO's FERC-approved, open and transparent transmission planning process. In addition, the validity of MISO's MTEP08 analysis was confirmed in subsequent planning cycles. As detailed herein, extensive evidence supports MISO's

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("DPC"); and Wisconsin Public Power, Inc. ("WPPI"). Unless otherwise defined herein, all capitalized terms shall be as set forth in MISO's Open Access Transmission, Energy and Operating Reserve Markets Tariff ("Tariff" or "MISO Tariff") and/or the Agreement of Transmission Facilities Owners to Organize the Midwest Independent Transmission System Operator, Inc., a Delaware Non-Stock Corporation ("Transmission Owners Agreement").

2 The Complaint refers to the Twin Cities – La Crosse Project as the "CapX 2020 Hampton – La Crosse transmission project."

3 Complaint at 1-2.

4 *Id*., at 2.

5 This Answer also uses the term "MTEP" to refer to MISO's annual transmission plan document. For example, MTEP08 means MISO's MTEP document for 2008.

determinations made in connection with the Twin Cities – La Crosse Project. In contrast, the Complaint contains nothing that would justify revisiting those determinations. The Commission has sought, in recent proceedings, to protect both the integrity of the MTEP process and the justified reliance interest of its participants against unwarranted retroactive challenges.[6] This case is a good illustration of why this protection is needed.

The Complaint fails to meet even the minimal requirements set forth in Rule 206 of the Commission's Rules of Practice and Procedure.[7] It does not "clearly identify the action or inaction which is alleged to violate applicable statutory or regulatory requirements" and does not "explain how the action or inaction violates applicable statutory standards or regulatory requirements."[8] No affidavits or testimony are adduced to explain the Complainants' technical points or to interpret the studies they purport to rely upon. While in some circumstances the Commission may be tempted to relax its minimal standards, in the instant case, the Complainants' allegations are simply unsupported by <u>any</u> evidence. Consistent with its precedent, the Commission should dismiss the Complaint for failure to comply with the Rules of Practice and Procedure.

Finally, the Complainants recently lost their transmission siting challenge to the Twin Cities – La Crosse Project in Minnesota and Wisconsin, the two states where the project facilities will be located.[9] Both the Minnesota Public Utilities Commission ("MPUC") and the Public Service Commission of Wisconsin ("PSCW") heard the Complainants' objections, but were not persuaded. The Commission should not permit the Complainants to recast their state siting challenge as a federal reliability complaint. Such a conversion would be an impermissible

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6 *See American Transmission Company LLC v. Midwest Indep. Trans. Sys. Operator, Inc.*, 142 FERC ¶ 61,090, P 55 (2013) ("*ATC v. MISO*").

7 18 C.F.R. § 385.206(b)(2012).

8 18 C.F.R. § 385.206(b)(1) and (2) (2012).

9 *See* Complaint at 3.

collateral attack on the state orders approving the Twin Cities – La Crosse Project, in violation of the "bright line" established under Part II of the Federal Power Act ("FPA") to delineate state and federal jurisdiction.[10]

II. COUNTER-STATEMENT OF FACTS

The Complaint names MISO as one of the co-respondents in the effort to reverse the approval of the Twin Cities – La Crosse Project. MISO's role in that approval was limited to one specific aspect. In accordance with the Tariff and Transmission Owners Agreement, MISO reviewed and approved the inclusion of the Twin Cities – La Crosse Project in MTEP08, which is the extent of MISO's approval authority. Under the law, MISO has no authority to approve the siting and construction of any transmission project. Other entities, such as state public utility commissions, perform these responsibilities, while NERC or the Regional Entities enforce compliance with FERC-approved Reliability Standards.[11] Accordingly, MISO will confine its factual discussion to explaining the MTEP process, including the approval of the Twin Cities – La Crosse Project as part of MTEP08. Where essential to its defense, MISO will correct what it perceives to be factual inaccuracies in the Complaint.

A. Description of MISO

MISO is a FERC-approved Regional Transmission Organization ("RTO")[12] that provides Transmission Service in its footprint in accordance with the Tariff and the Transmission Owners Agreement. As an RTO, MISO is responsible for operational oversight and control, market operations, and planning of the transmission systems of its member Transmission Owners.

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[10] *See, e.g., FPC v. Southern California Edison Co.*, 376 U.S. 205, 215-16 (1964) ("Congress meant to draw a bright line easily ascertained, between state and federal jurisdiction, making unnecessary . . . case-by-case analysis.").

[11] The terms "Reliability Standard" and "Regional Entity" are defined at 18 C.F.R. § 39.1 (2012). The MRO is a Regional Entity.

[12] *See Midwest Indep. Transmission Sys. Operator Inc*., 97 FERC ¶ 61,236 (2001).

MISO is the Reliability Coordinator for its footprint, providing real-time operational monitoring and control of the transmission system. MISO also operates a real-time and a day-ahead locational marginal price-based energy market in which each market participant's offer to supply energy are matched to demand and are cleared based on a security constrained economic dispatch process. In addition, MISO operates a market for Financial Transmission Rights, which are used by market participants to hedge against congestion costs, and an ancillary services market which provides for the services necessary to support transmission of capacity and energy from resources to load. MISO is responsible for approving transmission service, new generation interconnections, and new transmission interconnections to and within the MISO footprint, and for ensuring that the system is planned to reliably and efficiently provide for existing and forecast uses of the transmission system. MISO is the Planning Coordinator for the footprint and performs planning functions collaboratively with its Transmission Owners with stakeholder input throughout, while also providing an independent assessment and perspective of the needs of the transmission system overall.

B. MISO's Responsibilities In The MTEP Process

As a NERC-registered Planning Coordinator, MISO fully evaluates and plans for the reliability of the transmission system in accordance with the NERC planning standards. MISO develops the MTEP, its annual regional expansion plan, based on expected use patterns and analysis of the performance of the transmission system in meeting both reliability needs and the needs of the competitive bulk power market, under a wide variety of contingency conditions. The MTEP process integrates into the development of the regional plan many factors, including: (i) the transmission needs identified by the Transmission Owners in connection with their planning analyses in accordance with local planning processes to provide reliable power supply

to their connected load customers and to expand trading opportunities, and to better integrate the grid and alleviate congestion; (ii) the transmission planning obligations of a Transmission Owner, imposed by federal or state laws or regulatory authorities; (iii) plans and analyses developed by MISO to provide for a reliable transmission system and to expand trading opportunities, and to better integrate the grid and alleviate congestion; (iv) the inputs provided by the Planning Advisory Committee; and (v) the inputs, if any, provided by the state regulatory authorities having jurisdiction over any of the Transmission Owners and by the Organization of MISO States.

MISO performs its regional planning responsibilities in accordance with several guiding documents. Appendix B of the Transmission Owners Agreement contains the Planning Framework, which describes the planning responsibilities of MISO and its transmission-owning members. Attachment FF of the Tariff contains the MISO Transmission Expansion Planning Protocol, which is based on the Appendix B Planning Framework. Attachment FF has been developed and continuously improved over many years by MISO stakeholders in a collaborative process and in conformity with the Commission's guiding mandates, such as Order No. 890,[13] Order No. 1000,[14] and many MISO-specific orders and directives. By following the procedures established in these FERC-approved documents, MISO provides an open and transparent regional planning process, which treats all participants fairly and without undue discrimination or unlawful preference, resulting in recommendations for expansion that are reported in the MTEP.

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[13] *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241, *order on reh'g*, Order No. 890-A, FERC Stats. & Regs. ¶ 31,261 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228 (2009), *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

[14] *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, FERC Stats. & Regs. ¶ 31,323 (2011), *order on reh'g*, Order No. 1000-A, 139 FERC ¶ 61,132, *order on reh'g*, Order No. 1000-B, 141 FERC ¶ 61,044 (2012).

MISO uses a "bottom-up, top down" approach in developing the MTEP. This means that individual Transmission Owners continuously review and plan to reliably and efficiently meet the needs of their local systems. MISO then reviews these local planning activities with stakeholders and performs a top-down review of the adequacy and appropriateness of the local plans in a coordinated fashion with all other local plans to most efficiently ensure that all of the needs are cost effectively met. In addition, MISO considers, together with its stakeholders, opportunities for improvements and expansions that would reduce consumer costs by providing access to new low cost resources that are consistent with, and required by, evolving legislative energy policies. MISO's planning process also focuses on and examines congestion that may limit access to the most efficient resources, and considers improvements that may be needed to meet applicable statutory energy requirements.

The MTEP consists of the many individual projects or portfolios of projects that reflect these priorities and needs[15] and that are eventually recommended by the MISO staff to the MISO Board of Directors ("MISO Board"). Once the MISO Board has approved a MTEP, Transmission Owners are required make a good faith effort to construct the projects listed in MTEP Appendix A,[16] subject to any required approvals by federal and/or state regulatory authorities. At that point, MISO's plan development responsibilities with respect to the approved MTEP are concluded, although MISO may be required to assist the affected Transmission Owner(s) in justifying the need for, and obtaining certifications of, any facilities required by the approved MTEP by preparing and presenting testimony before applicable state

[15] The specific categories of MISO transmission projects that may be included in the MTEP are described in Attachment FF. *See* Tariff, Attach. FF, Section II. Each of these categories has its own unique, FERC-approved set of cost allocation procedures. *See id.*, Section III.

[16] "Appendix A projects are projects that have been justified to be the preferred solution to an identified reliability, policy or other need, or to achieve an identified cost savings or other benefit and that have been approved by the Transmission Provider Board." MISO Transmission Planning BPM-020-r6 at 18.

and federal authorities.[17] Under the Transmission Owners Agreement, MISO neither constructs nor physically operates any transmission facility.

C. Inclusion of the Twin Cities – La Crosse Project in MTEP08

The Twin Cities – La Crosse Project (also described as the SE Twin Cities – Rochester, MN – La Crosse, WI 345 kV Project), MISO Project ID 1024, was approved in MTEP08 as a Baseline Reliability Project ("BRP")[18] and included in Appendix A of MTEP08. The MTEP08 Report summarized the need for the Twin Cities – La Crosse Project as follows:

> This project has an estimated cost of $360 million, which is eligible for cost sharing as a Baseline Reliability Project, and extends 345kV transmission system support to growing load areas of Rochester Minnesota and La Crosse Wisconsin. Each of these areas has been experiencing load growth that will outstrip the ability of the existing lower voltage systems to reliably supply the loads. The proposed project resolves these reliability issues by providing additional transformation in the Rochester area and by introducing 345 kV supply into the La Crosse area, relieving heavily loaded 161 kV class lines in each area . . . [T]his line is needed to resolve a lengthy list of NERC contingency based violations that, without this project will result in severe overloads in some cases within the five year planning horizon. [19]

This conclusion was reached based on extensive studies and analyses that MISO had conducted as part of its MTEP08 process to ensure compliance with applicable NERC Reliability Standards and other requirements. To that effect, Section 6 of MTEP08, titled "Reliability Planning Methodology,"[20] summarizes these requirements in detail, explaining that MISO's "reliability assessment tests the existing plan using appropriate NERC Table 1 events, determines if the system as planned meets Transmission Planning (TPL) standards, develops and

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17 *See* Tariff, Attach. FF, Section VI.D.

18 The MISO Tariff describes BRPs as follows: "These projects are Network Upgrades identified in the base case as required to ensure that the Transmission System is in compliance with applicable national Electric Reliability Organization ("ERO") reliability standards and reliability standards adopted by Regional Reliability Organizations and applicable within the Transmission Provider Region. BRPs include projects that are needed to maintain reliability while accommodating the ongoing needs of existing market participants and Transmission Customers." Tariff, Attach. FF, Section II.A.1.

19 MTEP08 Report at 6. The MTEP08 Report is available at MISO's website: www.midwest.org/Planning/Pages/StudyRepository.aspx

20 *Id*. at 186-195.

tests additional transmission system upgrades to address the identified issues, and then tests the performance of the mitigation plan."[21] Among other things, the MTEP08 Reliability Planning Methodology describes MISO's compliance with applicable Reliability Standards as part of MTEP08 development, which makes it clear that the Complainants' claim that MTEP approval of the Twin Cities – La Crosse Project was secured "contrary to NERC standards and criteria"[22] is incorrect. The Reliability Planning Methodology also explains in detail the development of planning criteria and monitored elements, baseline models, the contingencies examined, and mitigation plan development.

Further, MTEP08 Appendix D1[23] contains detailed project justifications for all new Appendix A projects, including analytical results demonstrating the need for and effectiveness of the projects. The Complainants assert that "there are no transmission reliability studies included or appended to MTEP08."[24] However, Appendix D1 includes 37 pages of detailed project justification for the Twin Cities – La Crosse Project,[25] describing the NERC reliability issues in the Rochester and La Crosse areas and demonstrating that the Twin Cities – La Crosse Project would solve those violations. The project justification also describes the various alternatives that were considered by MISO and explains why the Twin Cities – La Crosse Project was chosen as the preferred solution. Accordingly, the Complainants' assertion that MISO had not considered the alternatives is without merit.[26]

Finally, there was not a suggestion during the MTEP08 development and approval process that the Twin Cities – La Crosse Project "contributes to and/or causes electrical system

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21 *Id.* at 186.
22 Complaint at 10.
23 MTEP08 Appendices are available at: www.midwest.org/Planning/Pages/StudyRepository.aspx.
24 Complaint at 12.
25 MTEP08, App. D1, at D1-47 – D1-83. For convenience, this portion of MTEP08 App. D1 is attached hereto as Exhibit A.
26 *See* Complaint at 21.

instability," as the Complainants erroneously assert. Consequently, the Twin Cities – La Crosse Project was approved by the MISO Board as an Appendix A BRP on December 4, 2008. With MISO's role in the approval of the Twin Cities – La Crosse Project substantially concluded at that point, the focus shifted to other regulatory *fora*.

D. Subsequent Developments

Because the Twin Cities – La Crosse Project will include transmission facilities located in two states, Minnesota and Wisconsin, it requires certain siting, construction and/or operating approvals from those states' utility regulators. At this time, the Minnesota and Wisconsin proceedings have largely concluded, and their outcome is briefly summarized below to the extent relevant to this Answer. The Twin Cities – La Crosse Project currently contemplates a 2015 in-service date.

In August 2007, Respondents NSPM and GRE, on behalf of themselves and certain other utilities, sought a Certificate of Need ("CON") from the MPUC for a group of 345 kV transmission projects, including the Minnesota portion of the Twin Cities – La Crosse Project. Complainant CETF intervened and fully participated in that proceeding advocating against the grant of a CON. In May 2009, the MPUC granted a CON for the Twin Cities – La Crosse Project.[27] Complainant CETF appealed the MPUC's grant of the CON, but the Minnesota Court

[27] *In re Application for Great River Energy, Northern States Power Company (d/b/a Xcel Energy) and Others for Certificates of Need for Three 345 kV Transmission Lines with Associated System Connections*, MPUC Docket No. ET-2, E-002, *et al.*/CN-06-1115 ("*Minnesota CON Proceeding*"), ORDER GRANTING CERTIFICATES OF NEED WITH CONDITIONS (May 22, 2009) ("Minnesota CON").

of Appeals upheld the MPUC order.[28] NSPM then sought a Minnesota route permit. In May 2012, the MPUC granted a route permit to NSPM.[29]

In January 2011, Respondents NSPW, WPPI, and DPC sought a Certificate of Public Convenience and Necessity ("CPCN") from the PSCW for the Wisconsin portion of the Twin Cities – La Crosse Project. Respondent CETF intervened and actively participated in the proceeding advocating against the grant of a CPCN. In May 2012, the PSCW granted the CPCN to NSPW, WPPI and DPC.[30] Respondent CETF appealed the PSCW's grant of a CPCN, but the appeal was dismissed.[31]

III. ARGUMENT

A. The Complaint Is Procedurally Improper And Should Be Dismissed With Prejudice.

1. The CETF/SOUL Submission Fails To Comply With Applicable Complaint Requirements.

CETF/SOUL filed their Complaint under FPA Section 306[32] and Rule 206 of the Commission's Rules of Practice and Procedure.[33] Under FPA Section 306, "any person . . . complaining of anything done or omitted to be done by any . . . public utility in contravention of the provisions of [the FPA]," may file a complaint.[34] Rule 206 establishes exacting requirements

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28 *In the Matter of the Application of Great River Energy, Northern States Power Company (d/b/a Xcel Energy) and Others for Certificates of Need for the CapX 345-kV Transmission Projects*, Nos. A09-1646, A09-1652, 2010 WL 2266138 (Minn. App. June 8, 2010).

29 *See, In the Matter of the Application for a Route Permit for the CapX2020 Hampton-Rochester-La Crosse High Voltage Transmission Lines*, MPUC Docket No. E-002/TL-09-1448 ("*Minnesota Route Permit Proceeding*"), ORDER ISSUING ROUTE PERMIT AS AMENDED (May 30, 2012).

30 *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*, PSCW Docket No. 5-CE-136 ("*Wisconsin CPCN Proceeding*"), FINAL DECISION (May 30, 2012) ("Wisconsin CPCN").

31 *No CapX2020 and Citizens Energy Task Force v. Public Service Commission of Wisconsin*, No. 12-CV-3328, slip op. (Dane Cnty. Cir. Ct. Oct. 27, 2012).

32 16 U.S.C. § 825e.

33 18 C.F.R. § 385.206 (2012).

34 *See* 16 U.S.C. § 825e.

for complaints filed before the Commission to ensure that complainants meet their *prima facie* evidence burden.[35] In addition, Rule 203(a) requires all pleadings to include "the relevant facts" and state "the basis in law and fact" taken by the party filing the pleading.[36] The Commission has admonished on numerous occasions that these requirements cannot be met without clear factual substantiation and supporting analysis.[37] CETF/SOUL have not met this standard. Accordingly, their Complaint should be dismissed with prejudice.

First, FPA Section 306 provides the complaint remedy to address a public utility's action or inaction "in contravention of the provisions of [the FPA]."[38] Similarly, Rules 206(b)(1) and (2) require the complainant to "clearly identify the action or inaction which is alleged to violate applicable statutory or regulatory requirements" and to "explain how the action or inaction violates applicable statutory standards or regulatory requirements."[39] Contrary to these requirements, the Complaint fails to identify and explain any action or inaction by MISO that allegedly violates any applicable statutory or regulatory requirement.

As detailed in Section II above, MISO's role in the approval of the Twin Cities – La Crosse Project was confined to the MTEP process, culminating in the project's inclusion in MTEP08. The Complaint fails to identify and explain any violation of the MTEP process by MISO that resulted in what the Complaint alleges to be the erroneous inclusion of the Twin Cities – La Crosse Project in MTEP08. Similarly, the Complaint fails to identify any credible evidence that was or should have been available to MISO prior to or at the time of MTEP08 approval that would require the rejection of the Twin Cities – La Crosse Project. MISO

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35 *See* 18 C.F.R. § 385.206(b) (2012).

36 *See* 18 C.F.R. § 385.203(a)(6) and (7) (2012).

37 *See, e.g., Californians for Renewable Energy, Inc. v. Pacific Gas & Electric Co.,* 142 FERC ¶ 61,143, P 18 (2013) ("[W]e have admonished parties that 'rather than bald allegations**,** [complainants] must make an adequate proffer of evidence including pertinent information and analysis to support its claims.'").

38 16 U.S.C. § 825e.

39 18 C.F.R. § 385.206(b)(1) and (2) (2012).

reviewed and approved the Twin Cities – La Crosse Project based on available evidence and in accordance with established NERC requirements and MTEP procedures. No grounds existed under the MTEP process for MISO not to take this action.

Second, Rule 206(b)(8) requires the complainant to "include all documents that support the facts in the complaint in possession of, or otherwise attainable by, the complainant . . . ."[40] CETF/SOUL's failure to comply with this requirement is not trivial; it, in fact, underscores a fundamental deficiency of the Complaint. Despite the highly technical and serious nature of the CETF/SOUL claims (*e.g.*, alleged violations of NERC Reliability Standards, inadequacy of conducted electrical studies and errors in MISO's review and approval process), the Complaint fails to adduce any affidavits by qualified engineering personnel or experts. Further, no evidence is offered to support the Complainants' assertion that "[t]he studies released [by Transmission Owners] in March, 2009, just months after the MTEP 2008 approval by MISO, is [*sic*] close enough in time to infer that . . . MISO . . . knew or should have known of that the Hampton – La Crosse transmission line could put the system at risk, and they failed to investigate and failed to disclose until after approval in MTEP08."[41] The Commission has consistently dismissed complaints that rely on inferences and speculation in lieu of facts.

Finally, the Complaint fails to meet many other requirements set forth in Rule 206. For example, the Complaint does not "set forth the business, commercial, economic or other issues presented by the action as such relate to or affect the complainant."[42] Similarly, it fails to make a good faith effort to quantify the financial impact or burden or to identify any non-financial impacts on the Complainants.[43] Also, the Complaint does not explain whether CETF/SOUL

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40 18 C.F.R. § 385.206(b)(8)(2012).
41 Complaint at 10.
42 18 C.F.R. § 385.206(b)(3)(2012).
43 *See* 18 C.F.R. § 385.206(b)(4) and (5)(2012).

attempted to use NERC and MRO procedures and enforcement mechanisms and, if not, why this step was not taken.[44] Given these numerous and serious deficiencies, the Commission should dismiss the Complaint outright.

2. The Complaint Is A Collateral Attack On The MPUC And PSCW Siting Approvals.

The Complaint is largely a transmission siting challenge that has already been litigated in Minnesota and Wisconsin. CETF/SOUL identify themselves as "grassroots organizations," noting that their members are "landowners along the route of the Hampton – La Crosse and Badger – Coulee transmission lines."[45] It is understandable that landowners located in the vicinity of a new infrastructure project, such as a transmission line, may have concerns in connection with the construction and/or operation of the project. The place to address these concerns is not a FERC complaint proceeding, however. Except under some very limited circumstances, Congress chose to leave transmission siting authority to the states, and it is in that forum that the reconciliation of various competing interests of landowners, transmission project developers and other affected parties takes place, usually in the context of a state siting or certificate of need proceeding.

The record shows that the Complainants actively participated in the CON/CPCN proceedings before the MPUC and the PSCW, opposing the Twin Cities – La Crosse Project. These state commissions rejected Complainants' arguments and approved the Twin Cities – La Crosse Project, based on the records compiled in their proceedings. The Complainants sought judicial review, but that, too, was denied.

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[44] Rule 206(b)(9)(i) requires the Complainants to state "whether the Enforcement Hotline, Dispute Resolution service, tariff-based dispute resolution, or other informal dispute resolution procedures were used or why these procedures were not used." 18 C.F.R. § 385.206(b)(9)(i)(2012). Given the nature of the Complainants' claims, it was incumbent on the Complainants to attempt to bring their concerns to NERC and/or the MRO first.

[45] Complaint at 4.

Under the FPA, CETF/SOUL is required to "state a legally recognizable claim that the Commission has the statutory or regulatory power to address."[46] As noted, the FPA provides no transmission siting authority for the Commission and the Complainants should not be allowed to obtain indirectly what they cannot obtain directly. The Commission has dismissed complaints that allege a violation of the FPA in order to influence the location of energy facilities,[47] and the same outcome is warranted here.

3. The Complainants' Untimely Challenge To MTEP08 Undermines The Certainty Of The MTEP Process.

The principal purpose of the Complaint is to overturn MISO's MTEP08 approval of the Twin Cities – La Crosse Project. The Commission has recently rejected a similar attempt by another party to reopen MISO's approval of this project. In *ATC v. MISO*, American Transmission Company ("ATC") argued, among other things, that MISO was required to revisit its MTEP08 approval of the Twin Cities – La Crosse Project for the purpose of combining it with another interconnecting transmission project that was subsequently approved as part of the MTEP11 planning cycle. The Commission rejected the challenge, finding it untimely and stating that ATC "should have advanced this argument during the planning process, when MISO actively engaged with stakeholders to develop its regional expansion plans."[48] The Commission also emphasized that "to foster successful project development, MISO plans transmission projects on an incremental basis" and, consequently, "[t]ransmission owners must be allowed to rely on the planning provisions in previous MTEPs."[49]

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46 *Californians for Renewable Energy, Inc. v. Pacific Gas & Electric Company and California Energy Commission*, 129 FERC ¶ 61,141 at P 9 (2009).

47 *Californians for Renewable Energy, Inc. v. California Independent System Operation Corporation*, 117 FERC ¶ 61,072, PP 8-10 (2006) (dismissing complaint against "decision to approve interconnection to the transmission grid of the generation project… [when complainants] main concern appears to be with the location of the proposed generation project and its impact on neighboring communities").

48 *ATC v. MISO*, P 53.

49 *Id.*, P 55.

The Complainants' challenge to MISO's approval fails for similar reasons. CETF/SOUL did not participate in the MTEP08 process. The Complaint does not identify any deficiency in MISO's MTEP08 analysis, but instead relies on interpretations of various post-MTEP08 documents generated by third parties.[50] That information has been available for some time, however. There is no explanation in the Complaint why it was not brought to the attention of MISO, NERC, MRO or this Commission earlier, if the Complainants seriously believed that it indicated reliability concerns with the Twin Cities – La Crosse Project.

The Complainants' MTEP08 challenge is more than four years late and to allow this challenge now, after both MISO and state regulatory processes have run their course, would adversely impact not only the Twin Cities – La Crosse Project but also other transmission projects approved in subsequent cycles. In *ATC v. MISO*, the Commission recognized the cyclical nature of the MTEP process and the justified reliance interests that are inherent in that process.[51] The Complaint provides no basis for departing from this precedent in the instant case.

B. There Is No Basis For Reopening MISO's MTEP08 Approval Of The Twin Cities – La Crosse Project.

Although MISO believes that the Complaint should be dismissed on the grounds of procedural deficiencies alone, MISO will provide a response to address the Complainants' MTEP08 claims. This response should not be construed as a validation of the Complainants' assertions, but strictly as a good faith effort to comply with the requirements of Rule 213.

1. The Twin Cities – La Crosse Project Was Properly Included In MTEP08.

The Twin Cities – La Crosse Project was submitted to the MISO Project Database in October 2005. The sponsoring parties requested in 2006 that MISO move several large 345 kV

[50] Not a single post-MTEP08 document relied upon by the Complainants was generated by MISO.
[51] *ATC v. MISO*, P 55.

projects to MTEP Appendix A. MISO's independent analysis of the proposed projects began in 2006 and was completed in 2008 for inclusion in MTEP08.

As part of its review, MISO performed reliability analysis of the area affected by the proposed Twin Cities – La Crosse Project by evaluating several different power flow models of the MISO Transmission System. The results of this analysis are set forth in MTEP08 Appendix D1.[52] As described therein, MISO identified numerous NERC TPL standard criteria issues in both the Rochester and La Crosse areas via contingency analysis and demonstrated that the Twin Cities – La Crosse Project would properly address these issues and would present an appropriate mitigation plan. MISO also considered other alternatives, including lower voltage transmission upgrades, and considered long-term plans for the region. The analysis was presented and reviewed in MISO's open stakeholder process.

As noted in MISO's 2012 testimony in the PSCW CPCN Proceeding,[53] the MTEP08 analysis indicated serious reliability issues that would arise in the absence of the Twin Cities – La Crosse Project.[54] MISO reviewed the projected transmission line loadings and voltage conditions in the La Crosse area for the 2011 summer peak period and that analysis demonstrated that this area can be expected to experience significant reliability problems unless new capacity is introduced into the area. This area is supplied primarily by four 161 kV lines: Alma - Marshland; Tremval - La Crosse; Genoa – Coulee; and Genoa - La Crosse - Marshland. There is 1110 MW of generation in and adjacent to the load area, with 587 MW at Alma to the north, 355 MW at Genoa to the south of Lacrosse, 26 MW of refuse burning units, and 70 MW of operating peaking capacity at French Island in central La Crosse. The La Crosse area load projected for

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52 *See* Ex. A.

53 Direct Testimony of Jeffrey R. Webb on behalf of the Midwest Independent Transmission System Operator, Wisconsin CPCN Proceeding (January 9, 2012) ("Webb Testimony"). The relevant excerpt from the Webb Testimony is attached hereto as Exhibit B.

54 *See* Ex. B, Webb Testimony at 12.

the 2011 summer peak in that study was 492 MW. For this load level, the MISO analysis found numerous reliability issues associated with serving this area with the existing system. All of these issues were resolved by introduction of the proposed Twin Cities – La Crosse Project as a new strong source into the area.

2. Subsequent MISO Analyses And State Findings Confirm The Original MTEP08 Determinations.

Although the Complaint claims that post-MTEP08 events undermine the reliability rationale for the Twin Cities – La Crosse Project, MISO's own studies show otherwise. The project has been included in all subsequent MTEP study models (MTEP09, MTEP10, MTEP11, and MTEP12). Multiple system conditions, calendar years, and load levels were analyzed in each MTEP to demonstrate that the system will be reliable. The instabilities claimed by the Complainants were not identified in those analyses. On the contrary, an extensive body of analytical work demonstrated adequate system performance in the La Crosse area due to the inclusion of the Twin Cities – La Crosse Project.

As explained in MISO's testimony before the PSWC,[55] MISO reviewed the transmission reliability issues in the La Crosse area, which are addressed by the Twin Cities - La Crosse Project on a current MTEP11 model for 2016 summer peak system. The MTEP11 2016 summer peak model has peak load in the La Crosse area forecast at about 510 MW. The analysis confirmed that the Twin Cities – La Crosse Project is needed to address identified reliability issues and provide for adequate system loading and voltage levels in the area. [56]

[55] *See* Exhibit B, Webb Testimony, at 12.
[56] *Id.*, at 13-15.

In its testimony, MISO explained that "projected loading levels in the area will exceed applicable ratings if the [Twin Cities – La Crosse] project is not installed" and "voltages in the area will be below acceptable levels."[57] These issues are serious:

> For peak load conditions, we project many overload conditions for a line or generator outage during a prior generator outage, as well as overloads for certain single line outages. Some of the line loadings for these conditions are severe enough as to preclude taking maintenance outages of a line or generator at load levels that have been seen in the area historically. In addition, for these conditions we project some voltages below applicable ratings. The two line outage conditions show the overall area weakness. For these conditions voltages are severely low over a wide area. Here again with peak load voltages as low as 80% at some locations, we expect difficulties in performing routine line maintenance without voltages falling below the acceptable 90% level for the next contingency. The widespread nature and low level of voltage following the two line outage condition indicates that there will be risk of voltage instability unless a new strong source is provided in the area. Voltage instability can cause rapid progression of declining voltages throughout a wide area resulting in total collapse of voltages and extensive loss of load. Such events in addition to being a violation of NERC planning standards can cause damage to utility and customer equipment and jeopardize public safety. [58]

MISO also noted the potential for serious harm to public health and safety, as well as economic impact on businesses and the community, from such events. The Twin Cities – La Crosse Project will mitigate all of these issues.[59]

Finally, the MPUC and PSCW siting decisions also found that the Twin Cities – La Crosse Project remains essential to the reliability needs in the area. The MPUC concluded that withholding the CON for the Twin Cities – La Crosse Project (as well as the other projects included in the Minnesota application) "would probably harm the future adequacy, reliability or efficiency of the energy supply to applicants, their customers, the people of Minnesota and/or neighboring states" [60] and that "a more reasonable and prudent alternative for achieving regional

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57 *Id.*, at 15.
58 *Id*.
59 *Id.*, at 15-16.
60 Minnesota CON at 26.

and community reliability" was not demonstrated.[61] Similarly, the PSCW found that "additional electric infrastructure is needed to reliably provide local area load serving capability" above the critical load limit that has been surpassed every year since 2003.[62] The PSCW further stated that "[e]ven at the most conservative estimate of annual load growth (0.7 percent), line loadings and voltages will be out of tolerance within the five- to ten-year planning horizon without the proposed project."[63] These findings are consistent with MISO's conclusions and determinations with respect to the Twin Cities – La Crosse Project.

IV. NOTICE AND COMMUNICATIONS

All correspondence and communications in this matter should be addressed to:

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V. ADMISSIONS AND DENIALS; AFFIRMATIVE DEFENSES

A. Admissions and Denials

Pursuant to Rule 213(c)(2) of the Commission's Rules of Practice and Procedure, to the extent practicable and to the best of MISO's knowledge and belief at this time, MISO admits or denies below the alleged material facts stated in the Complaint, to the extent they pertain to claims against MISO. To the extent that any fact or allegation in the Complaint is not specifically admitted in this Answer, it is denied.

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61 *Id*. 28.
62 *See* Wisconsin CPCN at 11.
63 *Id*., at 12.

- MISO admits that it is the RTO for the MISO Region.
- MISO admits that it is responsible for transmission planning in its footprint in accordance with the Transmission Owners Agreement, the MISO Tariff, and applicable FERC mandates.
- MISO admits that the MISO Board approved the Twin Cities – La Crosse Project and, consequently, this project was included in Appendix A of MTEP08.
- MISO denies that its approval of the Twin Cities – La Crosse Project violated any state or federal law, regulation, tariff, or rule, including, without limitation, NERC Reliability Standards, or was otherwise improper.
- MISO denies that the Twin Cities – La Crosse Project contributes to or causes electrical system instability.
- MISO denies that there is a link between the Twin Cities – La Crosse Project and system instability.
- MISO denies that the Twin Cities – La Crosse Project could put the system at risk. MISO further denies that it had any knowledge, actual or constructive, that the Twin Cities – La Crosse Project could put the system at risk, or that it failed to investigate or disclose any such risk.
- MISO denies that its evaluation of the Twin Cities – La Crosse Project focused on economics and ignored the inherent electrical consequences and reliability concerns of a radial 345 kV line.
- MISO denies that a press release or any other document gave MISO active and constructive notice that the Twin Cities – La Crosse Project would cause system instability and put the transmission system at risk.

- MISO denies that it defended the Twin Cities – La Crosse Project in any forum knowing that it was outdated and overstated or that it misled any regulator by understating demand reducing potential of energy efficiency, demand response and distributed generation. MISO further denies that the Twin Cities – La Crosse Project is outdated and overstated.
- MISO denies that the electrical impacts of the Twin Cities – La Crosse Project were not considered.
- MISO admits that it refers to NSPM and NSPW Transmission Owners doing business as Xcel Energy, as the Transmission Owner Xcel Energy in Appendix A, though Xcel Energy is holding company for NSPM and NSPW.

B. Affirmative Defenses

Pursuant to Rule 213(c)(2)(ii) of the Commission's Rules of Practice and Procedure, MISO sets forth the following affirmative defenses, subject to amendment and supplementation:

- The Complaint fails to state a claim against MISO upon which relief can be granted.
- The Complaint does not meet the minimum requirements applicable to complaints under the FERC regulations.
- The Complaint is a collateral attack on state siting decisions and is contrary to the FPA.
- The Complaint is untimely and is contrary to controlling FERC precedent.

VI. CONCLUSION

WHEREFORE, the Midwest Independent Transmission System Operator, Inc., respectfully requests that the Commission: (1) dismiss the Complaint with prejudice, and/or (2) deny the relief sought by CETF/SOUL.

Respectfully submitted,

/s/ Ilia Levitine

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Counsel for
Midwest Independent Transmission
System Operator, Inc.

Dated: March 21, 2013

CERTIFICATE OF SERVICE

I hereby certify that I have this day e-served a copy of this document upon all parties listed on the official service list compiled by the Secretary in the above-captioned proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated this 21st day of March, 2013, in Carmel, IN.

/s/ Amy Jones

H:\FINAL MISO Answer in EL13-49.docx

EXHIBIT A

Appendix D1: 5.1 West Planning Region

CAPX Projects

Projects 286/287: Monticello - St Cloud - Alexandria - Fargo 345kV Project

Transmission Owners: XEL (Xcel Energy), GRE (Great River Energy), MP (Minnesota Power), OTP (Otter Tail Power Company), MRES (Missouri River Energy Group)

Project Description:
This project addresses load serving issues in three geographic areas: Red River Valley ND/MN, Alexandria MN, and St. Cloud MN. The project is to:

- Build 35 miles of new 345kV between Waite Park (St. Cloud) 345kV and Monticello 345kV substations, $60.4 million, 2011;
- Install new 448MVA 345/115kV transformer at Waite Park, $5.1 million, 2011;
- Build 55 miles of new 345kV between Alexandria Switching Station 345kV and Waite Park 345kV substations, $105.9 million, 2013;
- Install new 448MVA 345/115kV transformer at Alexandria Switching Station, $5.1 million, 2013;
- Build 135 miles of new 345kV between Maple River (Fargo) 345kV and Alexandria Switching Station 345kV substations, $195.2 million, 2015
- Substation work at Monticello, Waite Park, Alexandria Switching Station, Maple River, $26.4 million;
- Project development at St. Cloud, Alexandria, and Southern Red River Valley areas, $91.9 million.

The total 345kV mileage for this project is 225 miles.

The cost of project development includes:
- Study work/engineering
- Route permitting (public communication, route analysis – consultant, utility expenses)
- Major contracts (EPC project management)
- Right-of-way (Easement labor – consultant, Easement legal and utility oversight)
- Project management (Utility project management/Design staff oversight, contingencies, construction – public communication)

The total estimated cost is $490 million. This estimate is in 2007 dollars.

The expected In Service Date is between 2011 and 2015.

The project is shown in the figure below.

Project 1024: Hampton Corner – N Rochester - La Crosse 345kV Project

Transmission Owners: XEL (Xcel Energy), DPC (Dairyland Power Cooperative), RPU (Rochester Public Utilities), WPPI (Wisconsin Public Power), SMMPA (Southern Minnesota Municipal Power Agency)

Project Description:
This project addresses load serving issues in the areas of Rochester MN, La Crosse WI and southeastern Minnesota including Winona. The project consists of:

- Build 12.6 miles of new 161kV between North Rochester 161kV and Northern Hills 161kV substations, $8.111 million, 2011;
- Install new 448 MVA 345/161kV transformer at North Rochester, $5.1 million, 2011;
- Build 14 miles of new 161kV between North Rochester 161kV and Chester 161kV substations, $9.009 million, 2014;
- Build 82 miles new 345kV between North Rochester 345kV and North La Crosse 345kV substations, $136.954 million, 2014;
- Install new 448MVA 345/161kV transformer at North La Crosse, $5.1 million, 2014;
- Build 36 miles of new 345 kV between Hampton Corner 345kV and North Rochester 345kV substations, $57.56 million, 2015;
- Substation work at Hampton Corner, North Rochester, North La Crosse, $28.4 million;
- River crossing contingency, $3 million;
- Adder for project development at Rochester, La Crosse, and Hampton Corner areas, $106.766 million.

For this project, the total 345kV mileage is 118 miles, and the total 161kV mileage is 26.6 miles.

The cost of adder for project development includes:

- Study work/engineering
- Route permitting (public communication, route analysis – consultant, utility expenses)
- Major contracts (EPC project management)
- Right-of-way (Easement labor – consultant, Easement legal and utility oversight)
- Project management (Utility project management/Design staff oversight, contingencies, construction – public communication)

The total cost is $360 million. This estimate is in 2007 dollars.

The expected In Service Date is between 2011 and 2015.

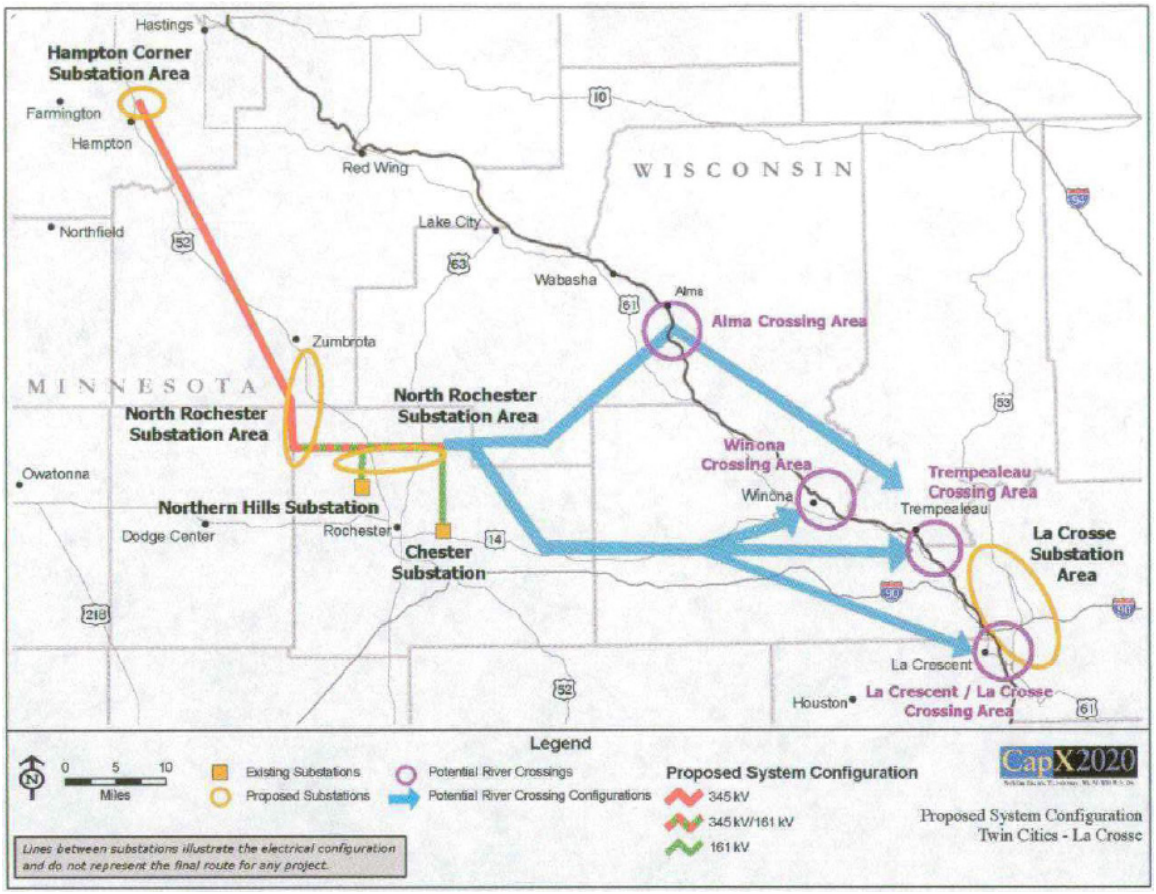


Figure 5.1-5: Geographical Location of the Hampton Corner – La Crosse 345 kV Project

Project Justification – Rochester

The Rochester area is a summer peaking area. Rochester Public Utilities (RPU), Peoples Cooperative Services (DPC member), and Dairyland Power Cooperative (DPC) provide electrical service in this area. The whole area is served by three 161 kV transmission lines, one from the west, Byron — Maple Leaf 161 kV transmission line, that connects the city to the Prairie Island - Byron 345 kV transmission line, one from the northeast from the Alma Substation, and one from the south from the Adams Substation.

The Rochester area is also supported by 185 MW of generation located within the city of Rochester. Some of this generation can reasonably be assumed to be available to support the system locally in the 2011 timeframe. However, the older less efficient local generating units may be retired in the future, or may not be available for service to relieve contingent conditions in all circumstances. Therefore the area reliability was evaluated both with all available generation assumed to be on, and also with the Silver Lake #1, #2 and #3 units and the Cascade #1 unit unavailable to provide local support as a potential scenario.

Total load in Rochester area modeled in 2011 summer peak is 387 MW.

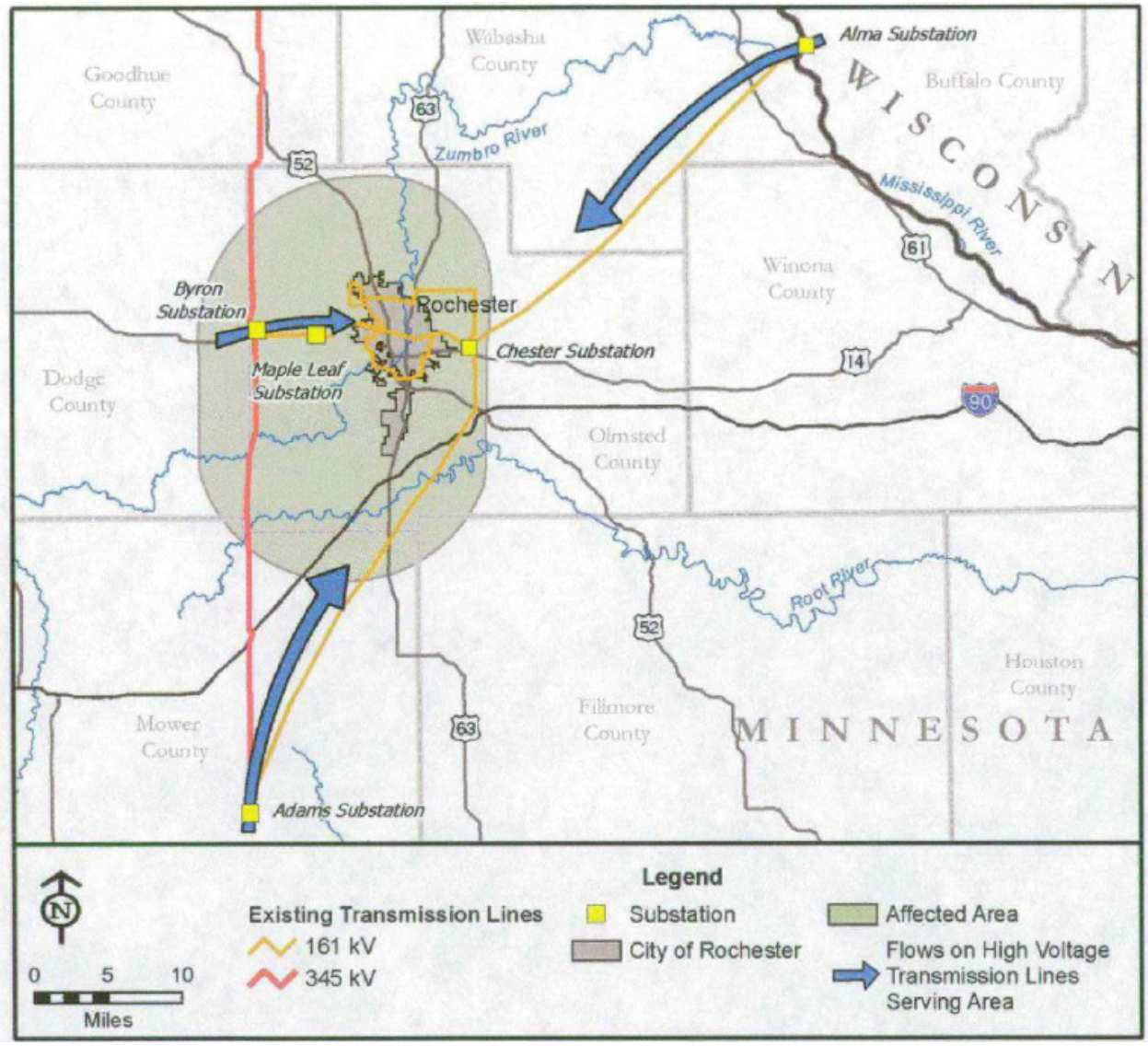


Figure 5.1-6: Rochester Area

In the 2011 peak period study, even with all local generation on, numerous line overload conditions were found for various combinations of facility forced outages. For example, the Adams to Rochester 161 kV line will overload for six different combinations involving line and/or generator forced contingencies, with loading as high as 118% of rating for the loss of the Byron to Maple Leaf 161 kV line and the Alma to Wabaco 161 kV line. The same line will be overloaded at 116% of rating for the loss of the Byron to Maple Leaf 161 kV line during the longer duration outage of the Alma JPM generating unit.

The proposed project will install a new North Rochester 345 kV to 161 kV substation with a step down transformer between the 345 kV Prairie Island to Byron 345 kV line and the 161 kV. A 10.5 mile 161 kV line will be built between the new substation and the Northern Hills substation in Rochester. This new transformer and line will parallel the Byron transformer, and the Byron to Maple Leaf 161 kV line which is a critical outage for the area. When this line is out, the new parallel line will carry additional flow to Rochester to reduce loadings on otherwise overloaded existing 161 kV supply lines remaining in service.

A. Reliability Issues in 2011 with All Rochester Generation Dispatched

A.1) Overload on Adams - Rochester 161kV Line under Category C3 Events

- 118% of 200 MVA for loss of Byron-Maple Leaf 161 kV & Alma – Wabaco 161kV line
- 116% of 200 MVA for loss of Alma JPM generator & Byron - Maple Leaf 161kV line
- 113% of 200 MVA for loss of Alma JPM generator & Byron 345/161kV xfmr
- 111% of 200 MVA for loss of Alma JPM generator & Maple Leaf - Cascade 161kV line
- 110% of 200 MVA for loss of Byron 345/161kV xfmr & Alma – Wabaco 161kV line
- 110% of 200 MVA for loss of Byron - Maple Leaf 161kV & Rochester - Wabaco 161kV line
- 103% of 200 MVA for loss of Byron 345/161kV xfmr & Rochester - Wabaco 161kV line
- 103% of 200 MVA for loss of Maple Leaf - Cascade 161kV line & Rochester - Wabaco 161kV line
- 95% of 200 MVA for loss of Silver Lake #4 generator & Byron - Maple Leaf 161kV line

A.2) Overload on Alma - Wabaco 161kV Line under Category C3 Events

- 104% of 223 MVA for loss of Adams – Rochester 161kV & Byron - Maple Leaf 161kV line
- 98% of 223 MVA for loss of Adams – Rochester 161kV & Maple Leaf - Cascade 161kV line

A.3) Overload on Wabaco - Rochester 161kV Line under Category C3 Events

- 108% of 201 MVA for loss of Adams – Rochester 161kV & Byron - Maple Leaf 161kV line
- 100% of 201 MVA for loss of Adams – Rochester 161kV & Maple Leaf - Cascade 161kV line

A.4) Overload on Adams – Beaver Creek 161kV Line under Category C3 Event

- 101% of 223 MVA for loss of Genoa #3 generator & Lansing #4 generator

B. Reliability Issues in 2011 with Smaller Peaking Units Potentially Retired

If the smaller peaking units that may potentially be retired earlier (Silver Lake #1, #2, #3 and Cascade #1) are not available, the reliability issues identified in Rochester area in 2011 are:

B.1) Loading on Adams - Rochester 161kV Line under Category B Event

- 96% of 200 MVA for loss of Byron-Maple Leaf 161 kV

B.2) Overload on Adams - Rochester 161kV Line under Category C3 Events

- 173% of 200 MVA for loss of Byron-Maple Leaf 161 kV & Alma – Wabaco 161kV line
- 132% of 200 MVA for loss of Alma JPM generator & Byron - Maple Leaf 161kV line
- 127% of 200 MVA for loss of Alma JPM generator & Byron 345/161kV xfmr
- 128% of 200 MVA for loss of Alma JPM generator & Maple Leaf - Cascade 161kV line

- 136% of 200 MVA for loss of Byron 345/161kV xfmr & Alma – Wabaco 161kV line
- 168% of 200 MVA for loss of Byron - Maple Leaf 161kV & Rochester - Wabaco 161kV line
- 129% of 200 MVA for loss of Byron 345/161kV xfmr & Rochester - Wabaco 161kV line
- 163% of 200 MVA for loss of Maple Leaf - Cascade 161kV line & Rochester - Wabaco 161kV line
- 113% of 200 MVA for loss of Silver Lake #4 generator & Byron - Maple Leaf 161kV line
- 110% of 200 MVA for loss of Silver Lake #4 generator & Maple Leaf - Cascade 161kV line
- 98% of 200 MVA for loss of Byron-Maple Leaf 161 kV & Byron 345/161kV xfmr

B.3) Overload on Alma - Wabaco 161kV Line under Category C3 Events

- 141% of 223 MVA for loss of Adams – Rochester 161kV & Byron - Maple Leaf 161kV line
- 138% of 223 MVA for loss of Adams – Rochester 161kV & Maple Leaf - Cascade 161kV line
- 106% of 223 MVA for loss of Adams – Rochester 161kV & Byron 345/161kV xfmr

B.4) Overload on Wabaco - Rochester 161kV Line under Category C3 Events

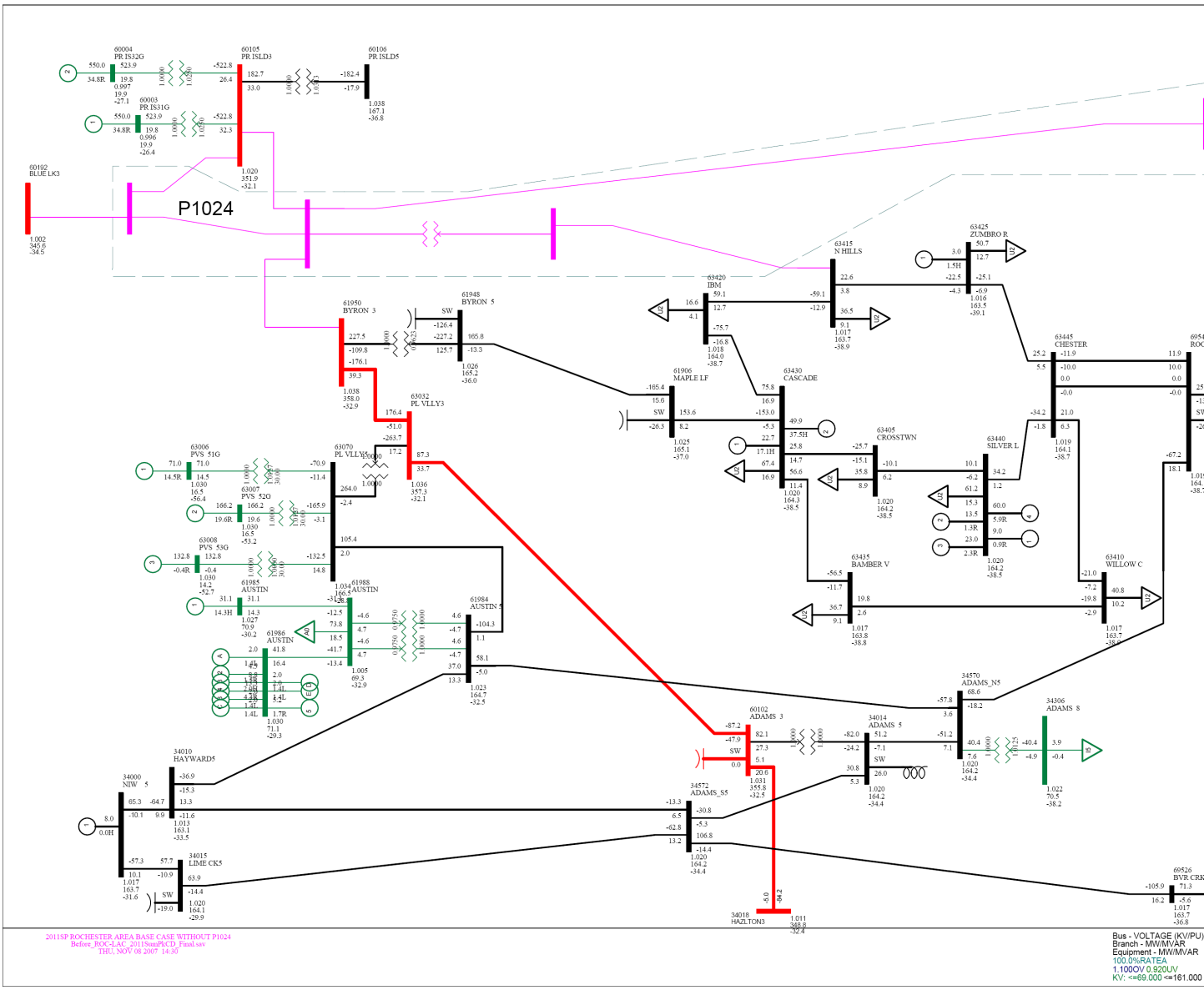
- 150% of 201 MVA for loss of Adams – Rochester 161kV & Byron - Maple Leaf 161kV line
- 145% of 201 MVA for loss of Adams – Rochester 161kV & Maple Leaf - Cascade 161kV line
- 110% of 201 MVA for loss of Adams – Rochester 161kV & Byron 345/161kV xfmr

B.5) Overload on Adams – Beaver Creek 161kV Line under Category C3 Event

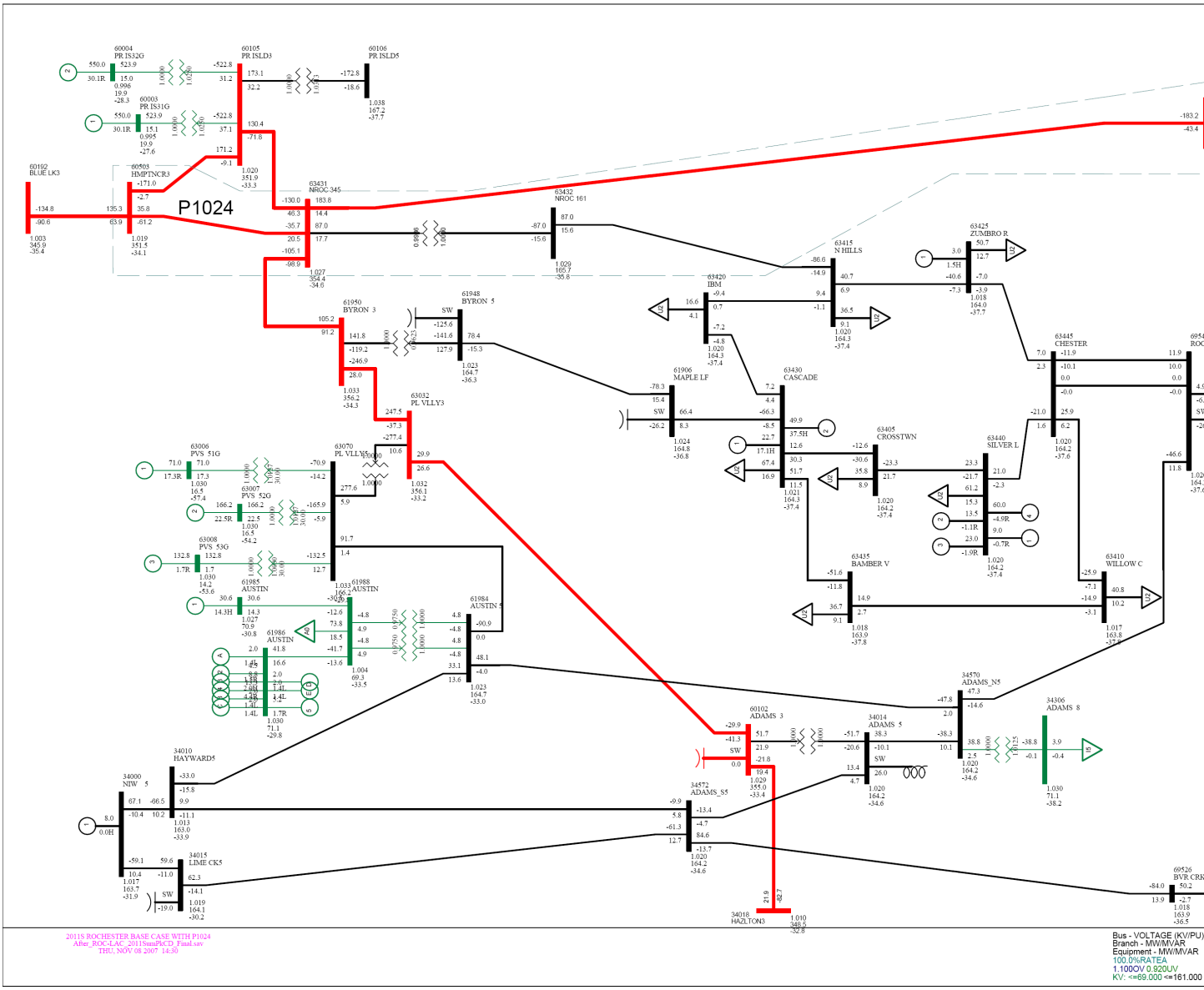
- 100% of 223 MVA for loss of Genoa #3 generator & Lansing #4 generator

B.6) Low voltage violations

- 0.816 (p.u.) at Zumbro River 161 kV and numerous other 161 kV Buses for loss of Byron - Maple Leaf 161kV & Rochester - Wabaco 161kV line (Cat. C3)
- 0.913 (p.u.) at Zumbro River 161 kV and numerous other 161 kV Buses for loss of Byron - Maple Leaf 161kV & Adams - Rochester 161kV line (Cat. C3)
- 0.899 (p.u.) at Zumbro River 161 kV and numerous other 161 kV Buses for loss of Maple Leaf – Cascade 161kV & Adams - Rochester 161kV line (Cat. C3)
- 0.805 (p.u.) at Zumbro River 161 kV and numerous other 161 kV Buses for loss of Byron - Maple Leaf 161kV & Alma – Wabaco 161kV line (Cat. C3)
- 0.803 (p.u.) at Zumbro River 161 kV and numerous other 161 kV Buses for loss of Maple Leaf - Cascade 161kV & Rochester - Wabaco 161kV line (Cat. C3)
- 0.897 (p.u.) at Zumbro River 161 kV and numerous other 161 kV Buses for loss of Maple Leaf - Cascade 161kV & Rochester - Wabaco 161kV line (Cat. C3)
- 0.871 (p.u.) at Byron 161 kV and another 161 kV Bus for loss of Byron - Maple Leaf 161kV & Byron 345/161kV xfmr (Cat. C3)
- 0.92 (p.u.) AT Northern Hills 161 kV Bus for loss of Maple Leaf - Cascade 161kV & Silver Lake #4 generator (Cat. C3)



One – Line P1024-1: 2011 Summer without Project System Intact - Rochester



One – Line P1024-2: 2011 Summer with Project System Intact - Rochester

Alternatives Considered - Rochester

To mitigate the above reliability issues, other alternatives were also considered:

Generation Redispatch Alternative

Since the reliability issues will begin to occur in the future even with all local generation available, there are no local generation dispatch options that will provide solutions into the future. If the smaller peaking units that may potentially be retired earlier (Silver Lake #1, #2, #3 and Cascade #1) are not available, the worst double contingency condition (loss of Byron-Maple Leaf 161 kV & Alma – Wabaco 161kV line) could result in loadings as high as 173% in the 2011 timeframe, and in addition the Adams to Rochester 161 kV line will be loaded to 96% of rating for the single contingency loss of the Byron to Maple Leaf line.

Load Shedding Alternative

Considering all Rochester generation is fully dispatched, to mitigate the 118% of overload on Adams - Rochester 161 kV line in 2011 summer, about 14% (55 MW) of Rochester area loads need to be shed to maintain a secure system post contingency.

Local Transmission Upgrade Alternative

Upgrading the existing 161 kV supply system was also considered. One alternative that would provide relief to the Rochester area issues would be to install a second Byron transformer, and a new Byron to Northern Hills 161 kV line. This alternative would be very similar in cost to the Rochester area upgrades provided by the proposed project, but would not address any of the reliability issues in the La Crosse area as the proposed project will.

Project Justification - La Crosse/Winona

The La Crosse/Winona area includes the City of La Crosse, Onalaska and Holmen, and extends east to include Sparta, Wisconsin, northeast to include Arcadia, Wisconsin, northwest to include the Winona/Goodview, Minnesota area, and southwest to include La Crescent, Houston and Caledonia, Minnesota.

Xcel energy and Dairyland Power Cooperative serve the La Crosse/Winona area. Power to the area is provided by four 161 kV transmission lines:

- Alma - Marshland - La Crosse 161 kV
- Alma - Tremval - La Crosse 161 kV
- Genoa - Coulee 161 kV
- Genoa - La Crosse 161 kV

There is 1160 MW of generation in and adjacent to the load area, with 619 MW at Alma to the north, 368 MW at Genoa to the south of Lacrosse, 28 MW of refuse burning units, and 145 MW of gas turbine peaking units at French Island in central La Crosse. Load serving in La Crosse/Winona area depend on the operation of local power plants, mainly the operation of Genoa #3 (368 MW) and Alma JPM (412 MW) units. Total La Crosse/Winona area load modeled in 2011 summer peak is 492 MW.

The La Crosse area is vulnerable to NERC category B contingencies and a number of NERC category C contingencies involving either of two generators (Genoa #3, or Alma JPM) out and one 161 kV line out, which can cause overloading of existing 161 kV lines, and low voltage conditions.

The proposed project will introduce a strong 345 kV source into the area by terminating the 345 kV N. Rochester to N. Lacrosse line with a 345/161 kV transformer that will tie into this area centrally. With this new source the worst loading and low voltage conditions will be relieved for many years into the future.

Figure 5.1-7: La Crosse / Winona Area

A. Reliability Issues in 2011 Summer Mitigated by the Proposed Project

A.1) Overload on Genoa – La Crosse 161kV Line under Category B Event

- 104% of 279 MVA for loss of Genoa - Coulee 161kV line

A.2) Overload on Genoa – La Crosse 161kV Line under Category C3 Events

- 123% of 279 MVA for loss of Alma JPM generator & Genoa – Coulee 161kV line
- 107% of 279 MVA for loss of Genoa – Coulee 161kV & Wabaco – Rochester 161kV line
- 107% of 279 MVA for loss of Genoa – Coulee 161kV & Adams – Rochester 161kV line
- 108% of 279 MVA for loss of Genoa – Coulee 161kV & Byron – Maple Leaf 161kV line

A.3) Overload on Coulee – La Crosse 161kV Line

- 106% of 214 MVA for loss of Alma JPM generator & Genoa - La Crosse 161 kV line (Cat. C3)
- 92% of 214 MVA for loss of Genoa - La Crosse 161 kV line (Cat. B)

A.4) Loading on Genoa – Coulee 161kV Line under Category C3 Events

- 94% of 415 MVA for loss of Alma JPM generator & Genoa – La Crosse 161kV line (Cat. C3)

A.5) Overloading on Alma – Tremval 161kV Line under Category C3 Events

- 117% of 223 MVA for loss of Genoa – Coulee 161kV & Genoa – La Crosse 161kV line
- 97% of 223 MVA for loss of Genoa #3 generator & Alma – Marshland 161kV line

A.6) Overloading on Genoa – Lansing West 161kV Line under Category C3 Events

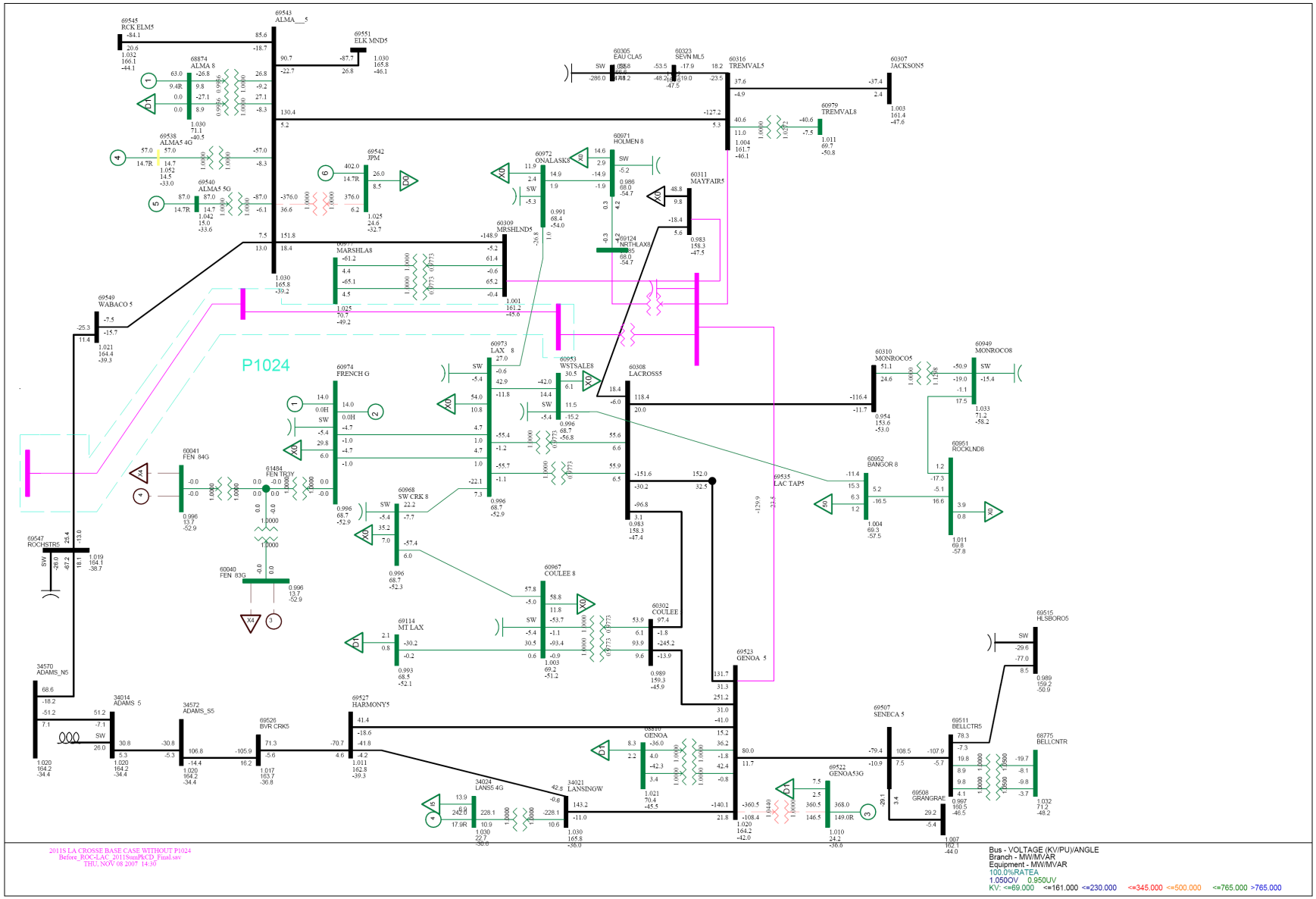
- 115% of 223 MVA for loss of Genoa #3 generator & Genoa – Harmony 161kV line
- 110% of 223 MVA for loss of Genoa #3 generator & Alma – Marshland 161kV line
- 107% of 223 MVA for loss of Genoa #3 generator & Nelson Dewey – Gran Grae 161kV line
- 106% of 223 MVA for loss of Genoa #3 generator & Seneca – Gran Grae 161kV line
- 103% of 223 MVA for loss of Genoa #3 generator & Alma JPM generator
- 99% of 223 MVA for loss of Genoa #3 generator & Alma – Tremval 161kV line

A.7) Other overloads for loss of Genoa – Coulee 161kV & Genoa – La Crosse 161kV line (Cat. C3)

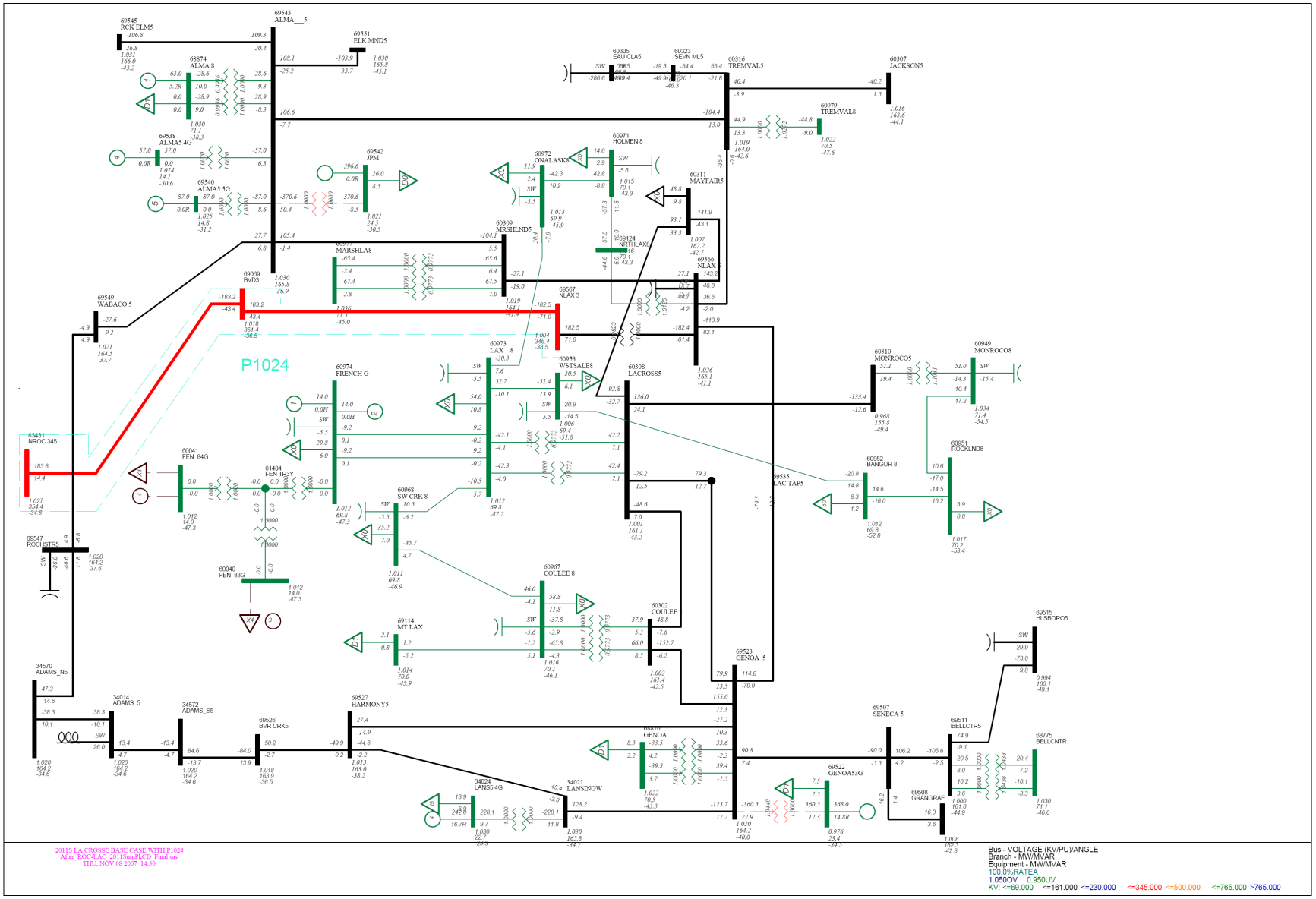
- 105% of 96 MVA on Council Creek – Petenwell 138 kV line
- 99% of 76 MVA on Saratoga – Petenwell 138 kV line
- 97% of 189 MVA on Seneca – Bell Center 161 kV line

A.8) Low Voltage Violations

- 0.64 (p.u.) at La Crosse 161 kV and numerous other 161 kV buses for loss of Genoa – Coulee 161kV & Genoa – La Crosse 161kV line (Cat. C3)
- 0.87 (p.u.) at Monroe Co. 161 kV and numerous other 161 kV buses for loss of Genoa #3 generator & Genoa – Lansing West 161kV (Cat. C3)
- 0.82 (p.u.) at Marshland 161 kV and numerous other 161 kV buses for loss of Genoa #3 generator & Alma – Marshland 161kV (Cat. C3)
- 0.88 (p.u.) at Monroe Co. 161 kV and numerous other 161 kV buses for loss of Genoa #3 generator & Nelson Dewey – Gran Grae 161kV (Cat. C3)
- 0.87 (p.u.) at Monroe Co. 161 kV and numerous other 161 kV buses for loss of Genoa #3 generator & Lansing #4 generator (Cat. C3)
- 0.88 (p.u.) at Monroe Co. 161 kV and numerous other 161 kV buses for loss of Genoa #3 generator & Seneca – Gran Grae 161kV (Cat. C3)
- 0.88 (p.u.) at Monroe Co. 161 kV and numerous other 161 kV buses for loss of Genoa #3 generator & Alma – Tremval 161kV (Cat. C3)
- 0.916 (p.u.) at Monroe Co. 161 kV bus for loss of Genoa – Coulee 161kV (Cat. B)
- 0.918 (p.u.) at Monroe Co. 161 kV bus for loss of Genoa – La Crosse 161kV (Cat. B)
- 0.9 (p.u.) at Monroe Co. 161 kV and 0.91 (p.u.) at Council Creek 161 kV buses for loss of Genoa #3 generator (Cat. B)



One – Line P1024-3: 2011 Summer without Project System Intact – La Crosse



One – Line P1024-4: 2011 Summer with Project System Intact – La Crosse

Alternatives Considered - La Crosse/Winona
To mitigate the above reliability issues, other alternatives were also considered:

Generation Redispatch Alternative
The two oil fired peaking units (#3, #4) at French Island were the only remaining generators in the area modeled off-line in the study. The effect of operating these two peaking units was considered. However, this option will not relieve all of the overload conditions identified in the area for projected 2011 conditions. For example, with the two French Island peaking units fully dispatched, Genoa – La Crosse 161 kV line is overloaded at 109%, down from 123%, for loss of Alma JPM generator & Genoa – Coulee 161 kV line; Coulee – La Crosse 161 kV line is overloaded at 100%, down from 106%, for loss of Alma JPM generator & Genoa – La Crosse 161 kV line; Genoa – Lansing West 161 kV line is loaded at 99%, down from 115%, for loss of Genoa #3 generator & Genoa – Harmony 161 kV line.

The low voltage violations will not be fully mitigated either by fully dispatching French Island peaking units. Under the contingency of Genoa – Coulee 161kV & Genoa – La Crosse 161 kV line, low voltage violations were identified as 0.89 (p.u.) at Monroe Co. 161 kV and four other 161 kV buses.

Furthermore, the two French Island peaking units are most expensive units in the area. They cannot be run reliably and economically for sustained periods. It cannot be assured either of these units will be available when needed.

Local Facility Upgrade Alternative
Local 161 kV rebuild option was also considered for the area. Because each of the four supply routes are subject to overloading this would require a near complete rebuild of the local area system at an estimated cost of more than $173 million. Twenty three 161 kV local transmission options were studied by TOs. The best performing 161 kV option is $173.859 million and has following facilities:

- Rebuild Genoa - La Crosse tap to 795 ACSS 161kV line (20.7 miles). The estimated cost is $14.6 M. This is based on $0.705 million/mile;
- Rebuild La Crosse tap – North La Crosse to 795 ACSS 161kV line (8.8 miles). The estimated cost is $6.2 M. This is based on $0.705 million/mile;
- Construct a new Alma – Goodview 795 ACSS 161kV line (33 miles). The estimated cost is $27.9 M. This is based on $0.845 million/mile;
- Construct a new Goodview – Buffalo Town tap 795 ACSS 161kV line (2.5 miles). The estimated cost is $1.9 M. This is based on $0.76 million/mile;
- Rebuild Alma – Buffalo Town to 795 ACSS 161 kV line (21.6 miles). The estimated cost is $18.7 M. This is based on $0.866 million/mile;
- Convert single circuit Buffalo Town – Marshland 161kV line to double circuit 795 ACSS 161kV lines (4.8 miles). The estimated cost is $4.3 M. This is based on $0.896 million/mile;
- Construct new Marshland – North La Crosse double circuit 795 ACSS 161kV lines (15.4 miles). The estimated cost is $15 M. This is based on $0.974 million/mile;
- River crossing contingency. The estimated cost is $3 M
- Substation work at Alma. The estimated cost is $1.37 M;
- Substation work at Goodview. The estimated cost is $8 M;
- Substation work at Marshland. The estimated cost is $6.6 M;

- Substation work at North La Crosse, including a 161kV 300 MVA Phase Angle Regulator (PAR). The estimated cost is $17.9 M;
- Adder for project development. The estimated cost is $48.389 M.

The expenditure of more than $173 million would not provide the level of support that is provided by the proposed project nor the ability to accommodate future load growth in the area to a comparable degree. As an example, for the worst loading condition of the 123 % loading level on the Genoa – La Crosse line, this loading would be reduced after rebuilding to 86% of loading as compared to 48% with the proposed project. This means that loadings on these same upgraded lines will become problematic in the future long before they would with the proposed project in place. In addition, other lines around the area would reach their limits even before these upgraded lines did, such as 103% overload on Genoa – Lansing West 161 kV line for loss of Genoa #3 generator & Genoa – Harmony 161 kV line, 91% loading on Genoa – Coulee 161 kV line for loss Alma JPM generator & Genoa – La Crosse 161 kV line, which would add to the cost of the alternative in this area.

Additional Advantages of Proposed Project and Risks Associated with Alternatives

Compared with the alternatives, the proposed project provides the following additional advantages:

1. The southeastern portion of Minnesota is an advantageous wind-energy area. There is more than 12,000 MW of new wind interconnections in queue in this area. In addition to the local reliability needs, adding the proposed project will provide additional capability to expand wind and other generation in southeastern Minnesota;
2. Power flows through the Byron - Adams 345 kV line are currently constrained because the underlying Byron - Maple Leaf 161 kV line cannot withstand the outage of the Byron — Adams 345 kV line when flow levels exceed 766 MW north to south. By adding a new 345 kV line in the area, the Byron – Maple Leaf 161 kV line limitation is removed, as there is now an additional parallel path for the power to travel;
3. Reduce the possibility of system separation such as occurred on September 18, 2007 after the tripping of Prairie Island – Byron 345 kV line along with tripping of other 345 kV lines in the area;
4. Reduced reliance on older local area generation and limited 161 kV line capacity.

Cost Allocation:

The following facilities in the Hampton Corner – North Rochester - La Crosse 345 kV project are not Baseline Reliability Project (BRP)

- North Rochester – Chester 161 kV line is a local market project, $9.009 M
- Hampton Corner – North Rochester 345 kV line is a potential Regionally Planned Generator Interconnection Project (RPGIP) for generator outlet of Southeast Minnesota wind generators and for area redundancy, $57.56 M
- Substation work at Hampton Corner and North Rochester, $7.6 M
- 50% of 345kV yard cost at North Rochester, which is assigned to Hampton Corner – North Rochester 345 kV line, $4.9865 M

Other facilities in this Hampton Corner – North Rochester - La Crosse 345 kV project are Baseline Reliability Project. Total cost of BRP portion is approximately $280.8445 M. So in summary the total project cost is $360 M, $280.84M is Baseline Reliability. Of this $280.84M, $216.25 M is MISO investments and 16.88% of this is postage stamped (see Appendix A.1 for details). So the remaining cost between MISO members is allocated as follows: ITCM 9.77% ($21,119,881), ATC 13.05% ($28,225,348), Xcel Energy 52.3% ($113,088,939), Minnesota Power 1.25% ($2,701,744), SMMPA 5.48% ($11,841,414) and Great River Energy 1.28% ($2,769,830).

Data Tables:

Table 5.1-12: Load Forecast in Rochester

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Summer Peak (MW)	282.3	302.0	330.0	332.3	342.1	352.1	361.3	387.1	393.5	404.8	416.5	428.5	444.8	457.7	470.2	482.8	494.9

Table 5.1-13: Local Generation Resources in Rochester

Location	Bus #	Fuel Type	BA	Pgen in 2011S	Pmax
Silver Lake #1	63440	Gas/Coal	SMMPA	9	9
Silver Lake #2	63440	Gas/Coal	SMMPA	13.5	13.5
Silver Lake #3	63440	Gas/Coal	SMMPA	23	23
Silver Lake #4	63440	Gas/Coal	SMMPA	60	60
Cascade Creek #1	63430	Gas/Oil	SMMPA	22.7	27
Cascade Creek #2	63430	Gas/Oil	SMMPA	49.9	49.9
Zumbro River	63425	Hydro	SMMPA	3	3
Total				**181.1**	**185.4**

Table 5.1-14: Load Forecast in La Crosse

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Summer Peak (MW)	416.2	431.5	443.3	449.5	459.6	470.0	480.7	491.7	502.9	514.3	526.0	538.0	550.3	562.8	575.7	588.8	602.2

Table 5.1-15: Local Generation Resources in La Crosse

Location	Bus #	Fuel Type	BA	Pgen in 2011S	Pmax
Genoa #3	69522	Coal	DPC	368	368
Alma JPM	69542	Coal	DPC	404	412
Alma #1	68874	Coal	DPC	63	63
Alma #4	69538	Coal	DPC	57	57
Alma #5	69540	Coal	DPC	87	87
French Island #1	60974	Refuse Burning Baseload	XEL	14	14
French Island #2	60974	Refuse Burning Baseload	XEL	14	14
French Island #3	60040	Oil	XEL	0	72
French Island #4	60041	Oil	XEL	0	73.3
Total				**1007**	**1160.3**

Table 5.1-16 Project Contingency Drivers – Rochester

*2011S_All: 2011 Summer Peak with All Rochester Local Generation Dispatched
*2011S_Ret: 2011 Summer Peak with Some Small Peaking Units in Rochester Potentially Retired

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1 ALMA___5 161 - WABACO 5 161 1	C3	200.0	2011S_All	118.2	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	200.0	2011S_All	115.9	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	BYRON 5 161 - BYRON 3 345 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	200.0	2011S_All	113.1	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - CASCADE 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	200.0	2011S_All	111.4	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	BYRON 5 161 - BYRON 3 345 1 ALMA___5 161 - WABACO 5 161 1	C3	200.0	2011S_All	110.2	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	200.0	2011S_All	109.6	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	BYRON 5 161 - BYRON 3 345 1 ROCHSTR5 161 - WABACO 5 161 1	C3	200.0	2011S_All	103.3	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	200.0	2011S_All	102.5	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1 Remove unit 4 from bus 63440 SILVER L 161 60.0 MW	C3	200.0	2011S_All	95.0	<65%
34572 ADAMS_S5 161 69526 BVR CRK5 161 1	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	223.0	2011S_All	100.9	74.2
69543 ALMA___5 161 69549 WABACO 5 161 1	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	223.0	2011S_All	103.9	<65%

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
69543 ALMA___5 161 69549 WABACO 5 161 1	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	223.0	2011S_All	98.0	<65%
69547 ROCHSTR5 161 69549 WABACO 5 161 1	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	201.0	2011S_All	107.7	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1	B	200.0	2011S_Ret	96.0	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1 Remove unit 4 from bus 63440 SILVER L 161 60.0 MW	C3	200.0	2011S_Ret	112.9	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - CASCADE 161 1 Remove unit 4 from bus 63440 SILVER L 161 60.0 MW	C3	200.0	2011S_Ret	109.9	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	200.0	2011S_Ret	167.8	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1 BYRON 5 161 - BYRON 3 345 1	C3	200.0	2011S_Ret	97.5	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1 ALMA___5 161 - WABACO 5 161 1	C3	200.0	2011S_Ret	171.8	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	BYRON 5 161 - BYRON 3 345 1 ROCHSTR5 161 - WABACO 5 161 1	C3	200.0	2011S_Ret	128.5	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	BYRON 5 161 - BYRON 3 345 1 ROCHSTR5 161 - WABACO 5 161 1	C3	200.0	2011S_Ret	128.5	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	200.0	2011S_Ret	163.1	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	BYRON 5 161 - BYRON 3 345 1 ALMA___5 161 - WABACO 5 161 1	C3	200.0	2011S_Ret	135.7	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	200.0	2011S_Ret	131.5	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - CASCADE 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	200.0	2011S_Ret	127.9	<65%

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	BYRON 5 161 - BYRON 3 345 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	200.0	2011S_Ret	127.3	<65%
34570 ADAMS_N5 161 69547 ROCHSTR5 161 1	MAPLE LF 161 - BYRON 5 161 1 Remove unit 4 from bus 63440 SILVER L 161 60.0 MW	C3	200.0	2011S_Ret	112.9	<65%
34572 ADAMS_S5 161 69526 BVR CRK5 161 1	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	223.0	2011S_Ret	100.2	73.7
69543 ALMA___5 161 69549 WABACO 5 161 1	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	223.0	2011S_Ret	141.3	<65%
69543 ALMA___5 161 69549 WABACO 5 161 1	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	223.0	2011S_Ret	137.6	<65%
69543 ALMA___5 161 69549 WABACO 5 161 1	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	223.0	2011S_Ret	141.3	<65%
69543 ALMA___5 161 69549 WABACO 5 161 1	BYRON 5 161 - BYRON 3 345 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	223.0	2011S_Ret	106.2	<65%
69547 ROCHSTR5 161 69549 WABACO 5 161 1	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	201.0	2011S_Ret	149.5	<65%
69547 ROCHSTR5 161 69549 WABACO 5 161 1	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	201.0	2011S_Ret	144.9	<65%
69547 ROCHSTR5 161 69549 WABACO 5 161 1	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	201.0	2011S_Ret	149.5	<65%
69547 ROCHSTR5 161 69549 WABACO 5 161 1	BYRON 5 161 - BYRON 3 345 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	201.0	2011S_Ret	110.4	<65%
63415_N HILLS_161	MAPLE LF 161 - CASCADE 161 1 Remove unit 4 from bus 63440 SILVER L 161 60.0 MW	C3	0.92	2011S_Ret	0.9195	1.0038
61906_MAPLE LF_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8226	1.023

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
63405_CROSSTWN_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8204	1.02
63410_WILLOW C_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8175	1.016
63415_N HILLS_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8161	1.019
63420_IBM_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8179	1.019
63425_ZUMBRO R_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8156	1.017
63430_CASCADE_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8200	1.02
63435_BAMBER V_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8175	1.017
63440_SILVER L_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8206	1.02
63445_CHESTER_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8223	1.018
69547_ROCHSTR5_161	MAPLE LF 161 - BYRON 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8223	1.018
63405_CROSSTWN_161	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9176	1.02
63410_WILLOW C_161	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9148	1.017
63415_N HILLS_161	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9137	1.019
63420_IBM_161	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9154	1.02
63425_ZUMBRO R_161	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9131	1.017

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
63430_CASCADE_161	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9173	1.02
63435_BAMBER_V_161	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9149	1.017
63440_SILVER_L_161	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9177	1.02
63445_CHESTER_161	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9188	1.019
69547_ROCHSTR5_161	MAPLE LF 161 - BYRON 5 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9188	1.019
63405_CROSSTWN_161	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9024	1.016
63410_WILLOW_C_161	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9003	1.013
63415_N_HILLS_161	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.8987	1.017
63420_IBM_161	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9002	1.016
63425_ZUMBRO_R_161	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.8985	1.01
63430_CASCADE_161	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9020	1.016
63435_BAMBER_V_161	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9000	1.013
63440_SILVER_L_161	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9027	1.016
63445_CHESTER_161	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9051	1.016
69547_ROCHSTR5_161	MAPLE LF 161 - CASCADE 161 1 ADAMS_N5 161 - ROCHSTR5 161 1	C3	0.92	2011S_Ret	0.9051	1.016

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
61948_BYRON 5_161	MAPLE LF 161 - BYRON 5 161 1 BYRON 5 161 - BYRON 3 345 1	C3	0.92	2011S_Ret	0.8713	0.982
62867_AL-CORN5_161	MAPLE LF 161 - BYRON 5 161 1 BYRON 5 161 - BYRON 3 345 1	C3	0.92	2011S_Ret	0.9011	0.974
61906_MAPLE LF_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8117	1.018
63405_CROSSTWN_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8095	1.014
63410_WILLOW C_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8066	1.01
63415_N HILLS_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8052	1.014
63420_IBM_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8070	1.014
63425_ZUMBRO R_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8047	1.012
63430_CASCADE_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8092	1.014
63435_BAMBER V_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8066	1.011
63440_SILVER L_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8097	1.014
63445_CHESTER_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8115	1.012
69547_ROCHSTR5_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8115	1.012
69549_WABACO 5_161	MAPLE LF 161 - BYRON 5 161 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8103	1.0081
63405_CROSSTWN_161	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8071	1.011

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
63410_WILLOW C_161	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8046	1.008
63415_N HILLS_161	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8029	1.012
63420_IBM 161	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8045	1.011
63425_ZUMBRO R_161	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8026	1.01
63430_CASCADE_161	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8065	1.011
63435_BAMBER V_161	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8044	1.008
63440_SILVER L_161	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8073	1.011
63445_CHESTER_161	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8102	1.01
69547_ROCHSTR5_161	MAPLE LF 161 - CASCADE 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8102	1.01
61906_MAPLE LF_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.9090	1.018
61948_BYRON 5_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.9140	1.022
63405_CROSSTWN_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.9022	1.014
63410_WILLOW C_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8985	1.01
63415_N HILLS_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8980	1.014
63420_IBM 161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.9000	1.014

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
63425_ZUMBRO_R_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8970	1.012
63430_CASCADE_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.9022	1.014
63435_BAMBER_V_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8990	1.011
63440_SILVER_L_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.9022	1.014
63445_CHESTER_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.9015	1.012
69547_ROCHSTR5_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.9015	1.012
69549_WABACO_5_161	BYRON 5 161 - BYRON 3 345 1 ALMA 5 161 - WABACO 5 161 1	C3	0.92	2011S_Ret	0.8981	1.007

Table 5.1-17: Project Contingency Drivers – La Crosse

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
34021 LANSINGW 161 69523 GENOA 5 161 1	GENOA 5 161 - HARMONY5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	223.0	2011S	114.5	85.2
34021 LANSINGW 161 69523 GENOA 5 161 1	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	223.0	2011S	110.3	79.4
34021 LANSINGW 161 69523 GENOA 5 161 1	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	223.0	2011S	106.7	81.1
34021 LANSINGW 161 69523 GENOA 5 161 1	SENECA 5 161 - GRANGRAE 161 1 GRANGRAE 69.0 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	223.0	2011S	106.0	80
34021 LANSINGW 161 69523 GENOA 5 161 1	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	223.0	2011S	102.7	82.5
34021 LANSINGW 161 69523 GENOA 5 161 1	TREMVAL5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	223.0	2011S	98.9	76.3
39239 COC 138 138 39808 PETENWEL 138 1	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	96.0	2011S	104.5	<65%
39240 SAR 138 138 39808 PETENWEL 138 1	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	76.0	2011S	99.1	<65%
60302 COULEE 5 161 60308 LACROSS5 161 1	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1	B	214.5	2011S	91.6	<65%
60302 COULEE 5 161 60308 LACROSS5 161 1	GENOA 5 161 - LAC TAP5 161 1 MRSHLND5 161 - LAC TAP5 161 1	B	214.5	2011S	91.6	<65%

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
60302 COULEE 5 161 60308 LACROSS5 161 1	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	214.5	2011S	105.5	<65%
60302 COULEE 5 161 60308 LACROSS5 161 1	GENOA 5 161 - LAC TAP5 161 1 MRSHLND5 161 - LAC TAP5 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	214.5	2011S	105.5	<65%
60302 COULEE 5 161 69523 GENOA 5 161 1	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1	B	415.0	2011S	86.6	<65%
60302 COULEE 5 161 69523 GENOA 5 161 1	GENOA 5 161 - LAC TAP5 161 1 MRSHLND5 161 - LAC TAP5 161 1	B	415.0	2011S	86.6	<65%
60302 COULEE 5 161 69523 GENOA 5 161 1	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	415.0	2011S	94.4	<65%
60302 COULEE 5 161 69523 GENOA 5 161 1	GENOA 5 161 - LAC TAP5 161 1 MRSHLND5 161 - LAC TAP5 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	415.0	2011S	94.4	<65%
60308 LACROSS5 161 69535 LAC TAP5 161 1	COULEE 5 161 - GENOA 5 161 1	B	335.0	2011S	100.2	<65%
60308 LACROSS5 161 69535 LAC TAP5 161 1	ADAMS_N5 161 - ROCHSTR5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	335.0	2011S	100.7	<65%
60308 LACROSS5 161 69535 LAC TAP5 161 1	COULEE 5 161 - GENOA 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	335.0	2011S	100.2	<65%
60308 LACROSS5 161 69535 LAC TAP5 161 1	MAPLE LF 161 - BYRON 5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	335.0	2011S	99.4	<65%
60308 LACROSS5 161 69535 LAC TAP5 161 1	COULEE 5 161 - GENOA 5 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	335.0	2011S	99.1	<65%

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
60316 TREMVAL5 161 69543 ALMA 5 161 1	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	223.0	2011S	117.1	<65%
60316 TREMVAL5 161 69543 ALMA 5 161 1	MRSHLND5 161 - ALMA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	223.0	2011S	97.3	71.5
69507 SENECA 5 161 69511 BELLCTR5 161 1	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	189.0	2011S	96.7	<65%
69523 GENOA 5 161 69535 LAC TAP5 161 1	COULEE 5 161 - GENOA 5 161 1	B	279.0	2011S	104.4	<65%
69523 GENOA 5 161 69535 LAC TAP5 161 1	COULEE 5 161 - GENOA 5 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	279.0	2011S	122.9	<65%
69523 GENOA 5 161 69535 LAC TAP5 161 1	MAPLE LF 161 - BYRON 5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	279.0	2011S	107.6	<65%
69523 GENOA 5 161 69535 LAC TAP5 161 1	ADAMS_N5 161 - ROCHSTR5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	279.0	2011S	106.9	<65%
69523 GENOA 5 161 69535 LAC TAP5 161 1	COULEE 5 161 - GENOA 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	279.0	2011S	106.9	<65%
60310_MONROCO5_161	ADAMS_N5 161 - ROCHSTR5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.9143	0.962
60310_MONROCO5_161	COULEE 5 161 - GENOA 5 161 1	B	0.92	2011S	0.9156	0.962
60310_MONROCO5_161	COULEE 5 161 - GENOA 5 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	0.92	2011S	0.9115	0.966
60310_MONROCO5_161	COULEE 5 161 - GENOA 5 161 1 ROCHSTR5 161 - WABACO 5 161 1	C3	0.92	2011S	0.9160	0.962
39002_COC5_161	GENOA 5 161 - HARMONY5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9033	0.968

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
60302_COULEE_5_161	GENOA 5 161 - HARMONY5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9199	0.999
60310_MONROCO5_161	GENOA 5 161 - HARMONY5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8912	0.968
60310_MONROCO5_161	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1	B	0.92	2011S	0.9183	0.964
39002_COC5_161	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.7127	0.9522
39239_COC 138_138	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.7443	0.9787
39808_PETENWEL_138	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.8481	0.996
60302_COULEE_5_161	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.6185	0.9713
60307_JACKSON5_161	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.8650	1.015
60308_LACROSS5_161	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.6410	0.9778
60310_MONROCO5_161	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.6720	0.948
60311_MAYFAIR5_161	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.6571	0.9905

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
60316_TREMVAL5_161	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.8686	1.018
69515_HLSBORO5_161	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.8788	0.99
60310_MONROCO5_161	GENOA 5 161 - LAC TAP5 161 1 LACROSS5 161 - LAC TAP5 161 1 Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	0.92	2011S	0.9196	0.967
60310_MONROCO5_161	GENOA 5 161 - LAC TAP5 161 1 MRSHLND5 161 - LAC TAP5 161 1	B	0.92	2011S	0.9185	0.964
39002_COC5_161	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8812	0.968
39239_COC_138_138	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9085	0.993
60302_COULEE_5_161	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8869	0.999
60308_LACROSS5_161	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8927	0.999
60310_MONROCO5_161	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8671	0.968
60311_MAYFAIR5_161	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8977	1.007

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
69507_SENECA 5_161	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9151	0.998
69511_BELLCTR5_161	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9090	0.992
69515_HLSBORO5_161	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9065	0.989
69523_GENOA 5_161	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8986	1.011
69535_LAC TAP5_161	LANSINGW 161 - GENOA 5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8991	1.001
60310_MONROCO5_161	MAPLE LF 161 - BYRON 5 161 1 COULEE 5 161 - GENOA 5 161 1	C3	0.92	2011S	0.9166	0.963
39002_COC5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8588	0.969
39239_COC 138_138	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8868	0.994
60302_COULEE 5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8593	1
60308_LACROSS5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8566	1
60309_MRSHLND5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8249	1.016

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
60310_MONROCO5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8405	0.97
60311_MAYFAIR5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8621	1.007
69507_SENECA 5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9089	1
69511_BELLCTR5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9028	0.994
69515_HLSBORO5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8983	0.991
69523_GENOA 5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8862	1.014
69535_LAC TAP5_161	MRSHLND5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8583	1.003
39002_COC5_161	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8935	0.967
60302_COULEE 5_161	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9086	0.998
60308_LACROSS5_161	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9114	0.998

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
60310_MONROCO5_161	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8812	0.967
60311_MAYFAIR5_161	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9155	1.006
69507_SENECA 5_161	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9159	0.9961
69508_GRANGRAE_161	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9184	0.9929
69511_BELLCTR5_161	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9097	0.9897
69515_HLSBORO5_161	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9123	0.989
69535_LAC TAP5_161	NED 161 161 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9179	1
39002_COC5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	B	0.92	2011S	0.9137	0.968
60310_MONROCO5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	B	0.92	2011S	0.9026	0.969
39002_COC5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	0.92	2011S	0.8877	0.968

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
39239_COC 138_138	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	0.92	2011S	0.9147	0.993
60302_COULEE 5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	0.92	2011S	0.8968	0.998
60308_LACROSS5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	0.92	2011S	0.9013	0.999
60310_MONROCO5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	0.92	2011S	0.8746	0.969
60311_MAYFAIR5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	0.92	2011S	0.9060	1.006
69511_BELLCTR5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	0.92	2011S	0.9166	0.991
69515_HLSBORO5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	0.92	2011S	0.9144	0.989
69523_GENOA 5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	0.92	2011S	0.9096	1.011

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
69535_LAC TAP5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 4 from bus 34024 LANS5 4G 22.0 242.0 MW	C3	0.92	2011S	0.9076	1.001
39002_COC5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	0.92	2011S	0.9035	0.97
60310_MONROCO5_161	Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW Remove unit 6 from bus 69542 JPM 24.0 401.0 MW	C3	0.92	2011S	0.8923	0.971
39002_COC5_161	SENECA 5 161 - GRANGRAE 161 1 GRANGRAE 69.0 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8931	0.967
60302_COULEE 5_161	SENECA 5 161 - GRANGRAE 161 1 GRANGRAE 69.0 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9076	0.999
60308_LACROSS5_161	SENECA 5 161 - GRANGRAE 161 1 GRANGRAE 69.0 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9107	0.999
60310_MONROCO5_161	SENECA 5 161 - GRANGRAE 161 1 GRANGRAE 69.0 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8807	0.967
60311_MAYFAIR5_161	SENECA 5 161 - GRANGRAE 161 1 GRANGRAE 69.0 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9148	1.006

Need Driver	Contingency	Cont Type	Rating (MW/pu)	Year (Load Level)	Pre-project Loading / Voltage	Post-project Loading / Voltage
69507_SENECA 5_161	SENECA 5 161 - GRANGRAE 161 1 GRANGRAE 69.0 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9118	0.996
69511_BELLCTR5_161	SENECA 5 161 - GRANGRAE 161 1 GRANGRAE 69.0 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9063	0.9884
69515_HLSBORO5_161	SENECA 5 161 - GRANGRAE 161 1 GRANGRAE 69.0 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9097	0.988
69535_LAC TAP5_161	SENECA 5 161 - GRANGRAE 161 1 GRANGRAE 69.0 - GRANGRAE 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9172	1.001
39002_COC5_161	TREMVAL5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8975	0.968
60302_COULEE 5_161	TREMVAL5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9137	1
60308_LACROSS5_161	TREMVAL5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9129	1
60310_MONROCO5_161	TREMVAL5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.8844	0.969
60311_MAYFAIR5_161	TREMVAL5 161 - ALMA___5 161 1 Remove unit 3 from bus 69522 GENOA53G 24.0 368.0 MW	C3	0.92	2011S	0.9139	1.007

EXHIBIT B

PUBLIC SERVICE COMMISSION OF WISCONSIN

IN THE MATTER OF

JOINT APPLICATION FOR PUBLIC SERVICE COMMISSION OF WISCONSIN

CERTIFICATE OF PUBLIC CONVENIENCE

AND NECESSITY AND WISCONSIN DEPARTMENT OF NATURAL RESOURCES

UTILITY PERMIT

HAMPTON-ROCHESTER-LACROSSE 345 kV TRANSMISSION PROJECT

DOCKET NO. 5 CE 136

DIRECT TESTIMONY OF JEFFREY R. WEBB

ON BEHALF

OF THE MIDWEST INDEPENDENT TRANSMISSION SYSTEM OPERATOR

JANUARY 9, 2012

if that is a generator, this could result in more instances of load shedding than the industry considers acceptable.

MISO ANALYSIS OF AREA RELIABILITY NEEDS

Q: Has MISO performed an analysis of the transmission system performance in the La Crosse area?

A: Yes. As a part of MTEP 08, approved by the MISO Board of Directors in December of 2008, MISO studied the system performance in this area against applicable reliability standards, and consistent with the general processes I have described.

Q: Please summarize the MTEP 08 analysis and results.

A: MISO performed reliability analysis of the area affected by the proposed Project by evaluating several different power flow models of MISO transmission system. This analysis was conducted between 2006 and 2008 leading up to the approval of the project in MTEP 08 as I noted above. At that time, we reviewed the projected transmission line loadings and voltage conditions in the La Crosse area for the 2011 summer peak period. That analysis demonstrated that this area can be expected to experience significant reliability problems unless new capacity is introduced into the area. This area is supplied primarily by four 161 kV lines: Alma - Marshland; Tremval - La Crosse; Genoa – Coulee; and Genoa - La Crosse - Marshland. There is 1110 MW of generation in and adjacent to the load area, with 587 MW at Alma to the north, 355 MW at Genoa to the south of Lacrosse, 26 MW of refuse burning units, and 70 MW of operating peaking capacity at French Island in central La Crosse. The La Crosse area load projected for the 2011 summer peak in that study was 492 MW. For this load level, MISO analysis found numerous reliability issues associated with serving this area with the existing system. All of these issues were resolved by introduction of the proposed 345 kV project as a new strong source into the area.

Q: Has MISO updated its projections for system reliability performance in the area?

A: Yes. MISO reviewed the MTEP 08 analysis on a current MTEP 11 model of the 2016 projected system. The current MTEP 11 model of the 2016 MISO system estimates peak load in the area at about 510 MW. These load levels are provided to MISO by our Transmission Owner members and represent a coincident load level for the local area that is somewhat higher than area loads that would be expected to occur coincident with the MISO-wide peak hour.

Q: Can you summarize the results of the updated analysis?

A: Yes. Our analysis confirmed that the proposed project is needed to provide for adequate system loading and voltage levels in the area. Table 1 below indicates line loading levels for a variety of contingent conditions evaluated. Table 2 indicates the voltages in the La Crosse area for various contingencies as well.

Table 1: Thermal Results Summary

2016 Summer Peak		Line Flows (% Rating)	
Critical Facility	**Contingency Event**	**Without Project**	**With Project**
Coulee - La Crosse 161	JPM + Genoa-La Crosse 161	**112%**	90%
Lansing - Genoa 161	Genoa #3 + Alma-Marshland 161	**111%**	91%
Lansing - Genoa 161	Genoa #3 + JPM	**110%**	94%
Coulee - Genoa 161	JPM + Genoa-La Crosse 161	**109%**	92%
Genoa - La Crosse Tap 161	JPM + Genoa-Coulee 161	**105%**	86%
Rochester - Wabaco 161	Genoa #3 + JPM	**105%**	86%
Rochester - Wabaco 161	JPM + Genoa-La Crosse 161	**105%**	83%
Lansing - Genoa 161	Genoa #3 + Alma-Tremval 161	**104%**	90%
La Crosse - La Crosse Tap 161	JPM + Genoa-Coulee 161	**103%**	89%
La Crosse - La Crosse Tap 161	Genoa-Coulee 161	**102%**	86%
Coulee - La Crosse 161	Genoa-La Crosse 161	**101%**	79%
Rochester - Wabaco 161	JPM + Genoa-Coulee 161	99%	83%
Coulee - Genoa 161	Genoa-La Crosse 161	99%	84%
Genoa - La Crosse Tap 161	Genoa-Coulee 161	92%	77%

Table 2: Voltage Results Summary

2016 Summer Peak				
Contingency Event >	**Genoa 3 + Alma - Marshland 161**		**Genoa - La Crosse 161 + Genoa-Coulee 161**	
Critical Facility (per unit voltage)	**Without Project**	**With Project**	**Without Project**	**With Project**
Goodview 1 69 kV	**0.89**	0.95	**0.90**	0.97
Goodview 2 69 kV	**0.89**	0.95	**0.90**	0.98
Winona 69 kV	**0.90**	0.96	0.91	0.98
Coon Valley 69 kV	0.94	0.98	**0.80**	0.97
Krause 69 kV	0.93	0.97	**0.80**	0.97
Sand Lake 69 kV	0.93	0.98	**0.81**	0.97
Greenfield 69 kV	0.94	0.99	**0.81**	0.98
Brice 69 kV	0.93	0.97	**0.81**	0.97
Grand Dad Bluff 69 kV	0.94	0.99	**0.81**	0.98
North La Crosse 69 kV	0.93	0.98	**0.81**	0.97
Holmen 69 kV	0.93	0.98	**0.81**	0.97
Mount La Crosse 69 kV	0.95	1.00	**0.81**	0.98
Holland 69 kV	0.92	0.97	**0.81**	0.97
LaCrescent 69 kV	0.96	1.00	**0.82**	0.98
Onalaska 69 kV	0.95	0.99	**0.82**	0.98
Pine Creek 69 kV	0.96	1.00	**0.82**	0.98
Coulee 161 kV	0.95	0.99	**0.82**	0.98
New Amsterdam 69 kV	0.92	0.97	**0.82**	0.97
Swift Creek 69 kV	0.96	1.00	**0.82**	0.99
Coulee 69 kV	0.96	1.01	**0.82**	0.99
French Island 69 kV	0.96	1.00	**0.82**	0.99
La Crosse 69 kV	0.96	1.00	**0.82**	0.99
La Crosse 161 kV	0.95	1.00	**0.83**	0.99
Monroe County 161 kV	0.97	1.00	**0.83**	0.99
Mayfair 161 kV	0.96	1.00	**0.83**	1.00
Mound Prairie 69 kV	0.97	1.01	**0.84**	0.98
Houston 69 kV	0.97	1.00	**0.85**	0.97
Galesville 69 kV	0.91	0.96	**0.85**	0.97
West Salem 69 kV	0.98	1.00	**0.86**	0.99
Wild Turkey 69 kV	0.98	0.99	**0.87**	0.96

2016 Summer Peak				
Contingency Event >	Genoa 3 + Alma - Marshland 161		Genoa - La Crosse 161 + Genoa-Coulee 161	
Critical Facility (per unit voltage)	Without Project	With Project	Without Project	With Project
Caledonia City 69 kV	0.98	0.99	**0.87**	0.96
Trempealeau 69 kV	0.91	0.96	**0.88**	0.98
Bangor 69 kV	0.99	1.01	**0.89**	1.00

Q: What conclusions do you draw from these analysis results?

A: Similar to the 2008 analysis, we find that projected loading levels in the area will exceed applicable ratings if the project is not installed. Similarly, voltages in the area will be below acceptable levels. For peak load conditions, we project many overload conditions for a line or generator outage during a prior generator outage, as well as overloads for certain single line outages. Some of the line loadings for these conditions are severe enough as to preclude taking maintenance outages of a line or generator at load levels that have been seen in the area historically. In addition, for these conditions we project some voltages below applicable ratings. The two line outage conditions show the overall area weakness. For these conditions voltages are severely low over a wide area. Here again with peak load voltages as low as 80% at some locations, we expect difficulties in performing routine line maintenance without voltages falling below the acceptable 90% level for the next contingency. The widespread nature and low level of voltage following the two line outage condition indicates that there will be risk of voltage instability unless a new strong source is provided in the area. Voltage instability can cause rapid progression of declining voltages throughout a wide area resulting in total collapse of voltages and extensive loss of load. Such events in addition to being a violation of NERC planning standards can cause damage to utility and customer equipment and jeopardize public safety. The seriousness of such events, including potential harm to public health and safety, as well as economic impact on businesses and the community, cannot be overstated. The proposed project is very effective in mitigating all of these issues.

Q: How does the proposed project resolve the issues identified?

A: The project will introduce a strong 345 kV source into the area by terminating the 345 kV North Rochester to North La Crosse line with a 345/161 kV transformer that will tie into this

area centrally. With this new source in the area, loading levels on the existing 161 kV lines in the area are 14% to 23% lower under contingency conditions, and voltages are improved across the area on the order of 6 to 17 percentage points. This level of improvement will mean that when the Project is installed loading and voltage levels will be well within capabilities and load growth will be able to be sustained in the area, even at higher growth rates, for many years into the future.

Q: Could the thermal issues in the area be resolved by upgrading the existing lines in the area to higher capabilities rather than by installing the proposed project?

A: Yes this could be done. However, because we see both thermal loading issues and depressed voltages in the area this indicates that the area supplies are no longer capable of adequately supporting the area and a new strong source should be introduced. Rebuilding the existing lines in the area will not reduce the risk of inadequate voltages and potential for voltage collapse in the area, and therefore would be an imprudent investment. In addition, as we observed in our 2008 analysis, the amount of rebuild that would be required and the lack of robustness of this solution in terms of its ability to sustain area growth into the future compared to the proposed project make that alternative inferior. Further, within the next 10 years as more wind generation in the MISO footprint comes online, additional overloads in the region are observed without the 345 kV Project that would not be addressed by the rebuilds of the lines in this area.

Q: Could voltage issues be resolved merely by installing capacitor banks at the existing substations in the area?

A: No. Because of the number of substations in the area that experience voltage degradation under contingency conditions, as load in the area increases, the necessary capacitor bank installations in the area would likely exceed physical locations to install them. In addition, at higher area loads the existing system is subject to voltage instability. Under such conditions, resolving instability by the installation of capacitor banks is ill advised because it can raise voltages without significantly extending the stable loading point. This can increase the risk of voltage collapse and wide-area loss of load because system operators have less ability to see an approaching voltage emergency.

Q: Could thermal and voltage issues be resolved by operation of the French Island generation?

A: We considered the effect of operating the oil fired peaking units at French Island. One of these units is currently mothballed and we have no indication that the unit will be available for operation. Therefore we considered the possible operation under contingency conditions of Unit 4 at French Island. However, this option will not relieve all of the overload conditions identified in the area for projected 2016 conditions and beyond. In addition, reliance on the contingency operation of a single generating unit to ensure reliability is contrary to MISO planning business practices, because of the relatively higher probability of the unavailability of generation due to forced outages, or to possible retirement of older generating units. In the case of the French Island generators, these units are 37 years old, and operational records supporting their dependability are sparse in that they have operated with a capacity factor of a mere 0.2% in the last three years.

INTEGRATION WITH REGIONAL PLAN

Q: How does the proposed project fit into the MISO's long-range planning concepts?

A: The Project was recommended and approved by MISO in 2008 based on fundamental near-term local reliability needs as the primary drivers for the Project. As such, the continuing development of the regional MISO plan have included this project as a part of the base plans upon which other near and longer term plans have been analyzed and developed. Since the project's inclusion as a part of the recommended regional plan developed collaboratively with stakeholders and approved by the MISO Board of Directors in 2008, three years of planning has progressed that has expected this project to be a fundamental part of the regional development plans. While the Project is driven by the load serving needs in the La Crosse area, it extends across the Minnesota-Wisconsin interface that has historically been limited by the few 345 kV transmission lines available to move power from the western part of MISO to the remainder of the market. There have been times in the past when available generation capacity in the western MISO region have been unable to be accessed to supply generation deficient areas of the market. The Project when coupled with other projects in the currently approved MTEP 11 regional plan will enhance the ability of grid to provide access to the most cost effective generation in all hours and access critically needed generation during times of shortage.