

Northern States Power Company/Northern States Power Company (Wisconsin)

Transmission Question and Answer In Compliance with 18 C.F.R Part 358.5 (b)(1-6)

Northern States Power Company/Northern States Power Company (Wisconsin) ("Company") have set up a Question and Answer function to provide responses to customer requests for transmission information via the Public Internet (the Company's OASIS page or web site). The purpose is to provide Transmission Customers contemporaneous access to the requested information pursuant to FERC Order No. 2004 (18 CFR Part 358.5 (b)(1-6)). The following log contains the questions and Company's answers.

Any transmission customer (or potential customer) may submit a question. The Q&A function will identify the Requestor and Question and the date of the request. The Company, at its discretion, reserves the right not to answer specific questions. For example, the Company will not provide answers that would disclose customer-specific information or Critical Energy Infrastructure Information.

Please submit questions via e-mail to the following address: XMCustomerQA@xcelenergy.com

Question	Answer
June 3, 2005; Xcel Energy Wholesale Merchant Function (WMF); On March 11, 2005, Xcel Energy Transmission Function (TF) provided an opinion to the regards to WMF transmission service request #75614596 in an OASIS posting. On May 13, 2005, MISO posted an updated draft of the System Impact Study (SIS) for request #75614596. WMF requests an update to TF opinion now that a draft SIS has been posted. Does TF still believe transmission service can be initiated on June 1, 2008 as per request #75614596?	June 10, 2005; Response: Long version of the question and answer can be found in the Transmission Q&A Additional Materials file named 20050603-WMF-NSP-QA-doc1-ServReq75614596.pdf
July 21, 2005; Excelsior Energy: Several questions regarding Mesaba Energy Transmission facilities - Long version of the question can be found in the Transmission Q&A Additional Materials file named 20050721-MesabaProject-NSP-QA-doc1-XM questions.pdf	July 22, 2005; Response: Long version of the question and answer can be found in the Transmission Q&A Additional Materials file named 20050721-MesabaProject-NSP-QA-doc1-XM questions.pdf
August 31, 2005; Xcel Energy Wholesale Merchant Function (WMF); Will the completion of the 825 MW of the Southwest Minnesota Wind Transmission Project or the proposed CapX 2020 transmission projects increase the transfer capability from NSP baseload generation to NSP's South Dakota loads? If so, when is the increased transfer expected to occur and in MW increment(s)?	September 14, 2005; Response: Long version of the question and answer can be found in the Transmission Q&A Additional Materials file named 20050831-WMF-NSP-QA-doc1-SD load.pdf
December 2, 2005; Xcel Energy Wholesale Merchant Function (WMF); When MISO issues reliability-based directives to our generation operators, is there a method available to distinguish between a local (NSP balancing-area) reliability event and a larger regional market event?	December 5, 2005; At the time of the event, the Balancing Authority Operator gives the directive to the Generation Operator and states whether it is a local reliability or regional reliability directive.
April 10, 2006 Xcel Energy Wholesale Merchant Function	April 12, 2006; The data can be found in the

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(WMF); Request for Historical line and transformer MW load data for the Sioux Falls, SD area. Long version of the question can be found in the Transmission Q&A Additional Materials file named 2006041006-WMF-NSP-QA-doc1-SD load data request.pdf	Transmission Q&A Additional Materials file named 2006041006-WMF-NSP-QA-doc1-SDLoadData.pdf. April 17, 2006; This data can be obtained in an excel file upon request to the Transmission Q&A.
April 27, 2007 Excel Engineering, Inc.; Please provide an update regarding the anticipated completion date for the Forbes 500 kV bus re-configuration project.	May 1, 2007; The project is tentatively scheduled for late October 2007 completion at this time.
July 30, 2007; Ark Engineering; Is performing an AC interference study for the Riverside pipeline and is requesting transmission data for study. See Additional Materials File 20070730-ArkEngrg-NSP-QA-doc1-request xm data riverside.pdf	August 6, 2007; Response was posted; see Additional Materials File 20070730-ArkEngrg-NSP-QA-doc2-answers data request.pdf
August 16, 2006; Ark Engineering; Requesting additional information to perform their AC interference study for the Riverside pipeline and is requesting transmission data for study.	August 23, 2007; Response was posted; see Additional Materials File 20070816-ArkEngrg-NSP-QA-doc1-answers data request.pdf
<p>August 28, 2007; Excel Engineering, Inc.; With regard to the dynamic simulation procedure and results reported by MISO for the Southwest Minnesota Group 5 analysis (July 19, 2007 report by Siemens PTI), please address the following questions:</p> <p>(1) For disturbance "vt3" (4-cycle, 3-phase fault at LGS on the Wilmarth 345 kV line) is bypass of the Fieldon series capacitor expected to occur, either due to series capacitor protective function, or due to any transfer trip signal initiated (and sent to Fieldon) by the line relaying at LGS?</p> <p>(2) Generically, for 3-phase faults on any of the Xcel Energy/NSP 115 kV lines connecting to Brookings Co, Yankee, Buffalo Ridge, Chanarambie, Fenton, Pipestone, Lake Yankton, or Nobles Co, what is the anticipated clearing time for each terminal (near and remote), assuming the fault to be near one terminal (Zone 1)?</p> <p>(3) Generically, for 3-phase faults on a 69 kV line (such as Winthrop-Cornish-Gibbon-Franklin), what is the anticipated clearing time at each terminal (near and remote), assuming the fault is near one terminal (Zone 1)?</p>	<p>August 31, 2007;</p> <p>(1) Fieldon series capacitor will be bypassed in 4 cycles for faults on Wilmarth- Lakefield Generation line.</p> <p>(3) 115 kV lines are piloted schemes and with pilot communication, the maximum operating times are 6 cycles for close in fault and 7 cycles for the remote end fault. Under a single contingency of loss of communication, the clearing time for the remote end is 19 cycles.</p> <p>(2) Typical Clearing times for three phase faults in 69 kV would be dependent on the breakers in the system. The relay operating time for close in fault would be 2 cycles, the breaker operating times could be as high as 8 cycles depending on the location. With one cycle margin, the clearing time would be 11 cycles. If the breaker is new, the clearing time would reduce to 6 cycles for close-in three phase faults.</p>
<p>September 7, 2007: Great River Energy (GRE); GRE resource planning has reviewed the updated in-service date projection report for the 825 MW Wind Transmission Expansion Project on the Oasis. The posting indicates that Split Rock to Nobles County substation 345kV line has a planned in-service date of July 2008 because of permit, right-of-way or other approval limitations.</p> <p>What permit, right-or-way, or other approvals are needed before construction can begin on the Split Rock to Nobles County Substation 345 kV line associated with the subject project? Are there any specific docket numbers identifying any hearings specific to the construction of this portion of the Southwest Minnesota 825 MW Wind Transmission Expansion Project?</p>	September 10, 2007; SD PUC Docket EL05-023. Approval from the PUC is required, and this approval is pending receipt of a signed permit from SDDOT. We expect to receive the SDDOT permit in the next few weeks.
September 28, 2007; Excel Engineering, Inc.; 1. Please confirm that the Aldrich-St Louis Park 115 kV line	October 26, 2007; 1. The summer line rating is 318 MVA and the

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<p>has been reconducted, and if so, what is the new Summer season nominal continuous rating?</p> <p>2. At Aldrich Substation, are breakers 5M412 and 5M414 still operated Normally Open, or are they now Normally Closed?</p>	<p>summer emergency rating is 350 MVA.</p> <p>2. The Aldrich breakers 5M412 and 5M414 are still operated normally open.</p>
<p>October 17, 2007; ; Great River Energy (GRE); Has Xcel Energy obtained the permit from South Dakota DOT and subsequent approval from the South Dakota PUC. Are you now able to move forward with the construction of the Split Rock to Nobles County 345 kV line?</p>	<p>October 31, 2007; The NSP application is on the agenda for the SDPUC meeting scheduled for 11/6/07, where our Route Permit should be approved as the stipulation has been executed by both NSP and the SDPUC. The SDPUC has received the SDDOT permit and our copy is being sent to Xcel Energy. NSP will proceed with construction in South Dakota when both permits are in hand. An update to our MISO/OASIS posting has been made to update current progress.</p>
<p>October 22 ,2007; Excel Engineering, Inc.; The "Southwest Minnesota-Twin Cities EHV Development" report dated November 9, 2005 lists (on p. 39) the reconductor of the Blue Lk-Helena segment of the Blue Lk-Wilmarth 345 kV line as being a necessary part of the "EHV" development. This supported by the Appendix B-1A TLTG summary that shows the overload of the Blue Lk-Helena line (110% of 1165 MVA) being reached at a SW MN generation level of 1112 MW; far short of the target level of 1800 – 1900 MW.</p> <p>However, MISO is reporting that the Blue Lk-Helena reconductor is not presently identified by Xcel/NSP as being a part of the overall development. As a result, MISO identifying it as an Interconnection Constraint for Southwest Minnesota Group 5 interconnection requests.</p> <p>Please clarify the status of the Blue Lk-Helena 345 kV reconductor project.</p> <p>Also, please indicate whether any of the other 7 identified reconductors (p. 39) are no longer presumed part of the "EHV" project.</p>	<p>October 31, 2007; MISO has identified the Blue Lake - Helena 345 kV section in the group 5 study, there has been no formal request for a facility study from MISO.</p> <p>The 7 other limiters are not needed to make the line work, rather they are to increase wind outlet. After the line is in-service and the generation requests come in, MISO will evaluate them at that time and make recommendations.</p>
<p>October 23, ,2007; Excel Engineering, Inc.; In conducting their interconnection System Impact Studies, MISO has been employing power system models which represent the Grant-Mitchell 115 kV line as normally open. However, it is our understanding that this line's status was changed during on June 21, 2006, so that it is now operated normally closed.</p> <p>Please advise as to the Grant-Mitchell 115 kV line's operating status.</p>	<p>October 30, 2007; The current operating status of the Grant to Mitchell 115 kV line is closed.</p>
<p>January 4, 2008; Industrial Electrical Engineers, Inc. (IEE) requests the available fault current for the 69 kV line at the Westby Municipal Substation in Westby, Wisconsin. IEE is looking at construction options to connect to the Westby Electric & Water Utility system. To allow them to model various options we are looking for:</p> <p>1. Three phase fault current with X/R ratio.</p>	<p>January10, 2008; The single phase line to ground fault current is 2508 @ -73.9 degrees with a x/r of 3.5. The three phase fault current is 4005 @ -70.7 degrees with a x/r of 2.9. The positive sequence impedance is 3.2844 + j9.39 ohms with a x/r of 2.9. The zero sequence impedance is 6.6497 + j27.064 ohms with a x/r</p>

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<p>2. Single phase fault current with X/R ratio.</p> <p>3. Any other data that you may consider helpful such as planned or imminent changes that could significantly change the values.</p>	<p>of 4.1.</p>
<p>January 22, 2008; Xcel Energy Wholesale Merchant Function (WMF); Are there any plans to add a third transformer at the Chanarambie substation? If so, what is the expected in-service date?</p>	<p>January 23, 2008; There is a project to add an additional 115-34.5 kV 120 MVA transformer at Chanarambie. The present expected in service date is mid November, 2008.</p>
<p>March 4, 2008; Excel Engineering, Inc.; The MISO MTEP 06 report (Table 6.3-4) lists the Red Rock-Cottage Grove 115 kV line as subject to post-contingent (n-1) overload of 115% of its applicable emergency rating of 210 MVA, under Year 2011 Summer Peak conditions.</p> <p>The indicated solution, per Table 6.3-4 is "Project 1203". Given that the emergency rating can be violated several years before 2011 (contrary to NERC Category B requirements), and the indicated Project 1203 is not expected to be in service until several years beyond 2011, does Xcel Energy have any effective plan in mind to address this overload?</p>	<p>March 25, 2008; MISO reports the project (G351) causing the Cottage Grover-Red Rock 115 kV line overload in MTEP06 has been suspended. MISO did not see any issues in MTEP07.</p>
<p>March 28: 2008; Excel Engineering, Inc.; Please provide information regarding the methodology used by Xcel Energy/NSP in establishing line ratings for transmission circuits located adjacent to wind generation interconnections, both new and existing.</p> <p>Specifically, is the NSP three-zone wind rating methodology previously (and currently) applied to Buffalo Ridge area 115 kV lines (and recently adopted by Minnkota Power Cooperative) uniformly applied to all Xcel transmission facilities similarly situated adjacent to wind generation interconnections?</p>	<p>April 10, 2008: A few transmission lines in southwestern Minnesota that provide outlet to wind generators have a rating based on a higher wind speed than normal. Higher output from the wind generators is only available during time periods where the wind speed is higher than used in normal transmission line ratings. Thus a higher wind speed was used to rate these lines. The higher wind speed was approved at the time of development by the Design Review Subcommittee of the then existing NERC Reliability Region "Mid-Continent Area Power Pool (MAPP).</p> <p>The transmission line circuits in the NSP Transmission System with wind ratings are: Split Rock-Pathfinder, Pathfinder-Pipestone, Pipestone-Buffalo Ridge, Buffalo Ridge-Lake Yankton, Lake Yankton-Lyon County #1, Lyon County-Minnesota Valley, Chanarambie-Pipestone, and Chanarambie-Lake Yankton #2.</p>
<p>April 28: 2008; Excel Engineering, Inc.; The Xcel Energy "Southwest Minnesota→Twin Cities EHV Development Electric Transmission Study" report dated November 9, 2005 provides in Section 8 a detailed listing (based on the analysis in Section 5.4) of the reactive facilities required in order for the proposed Brookings Co-Twin Cities 345 kV development to function properly at the intended 1900 MW SW MN→ Twin Cities power transfer level. This tabulation indicates a need for 1020 MVAR of shunt capacitors and 300 MVAR of shunt reactors.</p>	<p>April 28: 2008; No such list exists for the Twin Cities - Fargo line or the Twin Cities - La Crosse line. Any necessary reactive facilities will be determined based on future interconnection studies that take place through the MISO and/or MAPP generation interconnection processes and consider the precise locations, sizes, and timing of future generation installations.</p> <p>Regarding the facilities listed in Section 8 of the</p>

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<p>Is a similar tabulation available for the proposed Fargo-Monticello and Hampton Corner-Rochester-LaCrosse 345 kV lines?</p>	<p>Southwestern Minnesota Study, we are not certain which of these reactive facilities will be constructed. The precise reactive facilities listed in the study were dependent upon the generation assumptions developed for that study. Necessary reactive facilities will be designed and constructed in accordance with the needs prompted by the exact size, location, and timing of generation development in the southwestern Minnesota area as determined in conjunction with the MISO and/or MAPP interconnection processes. This will ensure that the reactive facilities placed in service are adequate for the system as it develops.</p>
<p>May 28, 2008; Xcel Energy Wholesale Merchant Function (WMF); MISO has advised us the TSRs 75614596 and 75993623, which were scheduled to be effective June 1, 2008, have been deferred due to the Cannon Falls-Northfield 69kV upgrade not being completed yet. Please provide expected completion date for the Cannon Falls-Northfield 69kV upgrade associated with TSRs 75614596 and 75993623.</p>	<p>May 29, 2008; The new/revised in-service date is June 24, 2008.</p>
<p>June 6: 2008; Excel Engineering, Inc.; To help ensure correct modeling of the Waseca, MN 69 kV system, please clarify the location of the normally-open points at or adjacent to the Waseca Municipal substation.</p>	<p>June 6: 2008; Switches 4S90 and 4S93 are N.O. at Waseca Muni and C226 is N.O. at St. Olaf Jct.</p>
<p>June 20: 2008; Excel Engineering, Inc.; MISO has issued a revised draft of the Southwest Minnesota "Group 6" System Impact Study:</p> <p>http://www.midwestmarket.org/publish/Document/6871db_117a25bcaa6_-7d710a48324a</p> <p>In this draft (pp. 82 & 84) it is indicated that the Summer Continuous ratings for the Buffalo Ridge-Yankee-Brookings Co and Nobles Co-Fenton-Chanarambie 115 kV lines are all 620 MVA.</p> <p>Is it correct that these lines have ratings of 620 MVA? This does not seem consistent with one-line diagrams previously provided by Xcel/NSP in various Interconnection Facility Studies, where it had been indicated that there would be line disconnect switches at the substations, and that these switches were to be rated 3000 amps, a rating which is inadequate to support a circuit rating of 620 MVA. Also, are there any other series-connected elements, such as wavetraps, that would prevent utilization of the claimed 620 MVA capability?</p> <p>If it is ultimately desired to achieve the claimed circuit ratings of 620 MVA, is there any plan to remove these superfluous switches at the substations where they are unnecessary due to the breaker-and-a-half bus configurations?</p>	<p>June 6: 2008; All substation equipment is rated to 3000A. That means the normal and emergency rating is the same at 598 MVA. There are no plans to increase the substation equipment at this time.</p>
<p>June 27: 2008; Excel Engineering, Inc.; Several questions</p>	<p>July 11, 2008; Long version of the question and</p>

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<p>regarding Chanarambie Substation - Long version of the question can be found in the Transmission Q&A Additional Materials file named 20080627-Excel Engrg -NSP-QA-Chanarambie.pdf</p>	<p>answer can be found in the Transmission Q&A Additional Materials file named 20080627-Excel Engrg -NSP-QA-Chanarambie.pdf. July 16, 2008; An updated answer can be found in the Transmission Q&A Additional Materials file named 20080627-Excel Engrg -NSP-QA-Chanarambie-7-16-08.pdf.</p>									
<p>June 30: 2008; Excel Engineering, Inc.; Relating to the planned "RIGO" series of transmission projects, is there any information available regarding the proposed rating (MVA) of the new Pleasant Valley-Byron 161 kV line?</p>	<p>July 7, 2008; The Pleasant Valley-Byron line will follow Xcel Energy's standard line rating methodology for new lines. That information is not public yet. July 16, 2008; Preliminary planning studies have the new Pleasant Valley-Byron 161 kV line rated at 505 MVA with a 110% emergency rating.</p>									
<p>October 3, 2008: 2008; Excel Engineering, Inc.; To assist in review and interpretation of recently-posted MISO Transition Period Feasibility Analysis study results, please disclose the correct nominal Summer Season MVA ratings (Continuous and Emergency) for the following circuits:</p> <ul style="list-style-type: none"> • Split Rock-White 345 kV • Split Rock-Sioux City 345 kV <p>Please ensure that the recently-completed line re-terminations, bus reconfigurations, and equipment additions at Split Rock and White are properly considered.</p> <p>Also please indicate the limiting consideration (e.g., conductor thermal rating, CT, wavetrap, breaker, buswork ampacities, etc.) upon which the circuit ratings are based.</p>	<p>October 21, 2008; Xcel Energy's owned portion of the line from Split Rock-White and Split Rock-Sioux City 345 kV is rated consistent to our ratings methodology. The ratings are as follows:</p> <table border="1" data-bbox="906 772 1468 869"> <thead> <tr> <th></th> <th style="text-align: center;"><u>Normal</u></th> <th style="text-align: center;"><u>Emergency</u></th> </tr> </thead> <tbody> <tr> <td>Summer</td> <td style="text-align: center;">1333 MVA</td> <td style="text-align: center;">1435 MVA</td> </tr> <tr> <td>Winter</td> <td style="text-align: center;">1435 MVA</td> <td style="text-align: center;">1435 MVA</td> </tr> </tbody> </table> <p>WAPA will continue to rate their portion of the line that is consistent with their ratings methodology.</p>		<u>Normal</u>	<u>Emergency</u>	Summer	1333 MVA	1435 MVA	Winter	1435 MVA	1435 MVA
	<u>Normal</u>	<u>Emergency</u>								
Summer	1333 MVA	1435 MVA								
Winter	1435 MVA	1435 MVA								
<p>May 8, 2009; Xcel Energy Wholesale Merchant Function (WMF); Does Xcel Energy have any transmission construction plans that involve either the Cornell Substation or the 115 kV source to the substation?</p>	<p>June 18, 2009; Xcel Energy currently has budgeted for a 115 kV transmission line project (scheduled in service date 12/1/2009) that will reconfigure the existing line to bypass Cornell Substation. Cornell Substation is currently fed by a 115 kV line that passes directly over the substation and its configuration requires that any maintenance outages inside the substation require an outage to the line. Upon conclusion of the project, the existing 115 kV line will be tapped (short line drops into the substation) and it will then be possible to perform substation maintenance without taking the entire line out of service. The project includes replacing the existing 115 kV line switches. The switch replacement will result in an increase in reliability to customers served out of Cornell Substation as well as an increase in the capacity of the transmission line.</p>									
<p>June 16, 2009; Excel Engineering, Inc.; Please provide an update regarding the status of the BRIGO series of transmission projects.</p>	<p>June 23, 2009; The second 345/115 kV transformer was proposed as part of the NSP Buffalo Ridge Incremental Generation Outlet</p>									

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<p>In particular, what is the schedule for the installation of the 2nd Brookings Co 345/115 kV transformer, and is this linked to any particular generation interconnection request, or is it proceeding independent of any interconnection requests?</p>	<p>(BRIGO) project. The Minnesota PUC granted a certificate of need for the BRIGO projects in September 2007, subject to completion of the BRIGO projects (including the second transformer) in 2009. The South Dakota PUC granted a Facility Permit for the 6.5 mile 115 kV line and associated substation facilities (e.g., the second 345/115 kV transformer) located in South Dakota in early 2008.</p> <p>The schedule for the completion of installation of the second Brookings County 345/115 kV transformer is posted on OASIS (see link - Xcel Energy Buffalo Ridge Incremental Generation Outlet (BRIGO) Posting 04/01/08).</p> <p>The second 345/115 kV transformer is presently allocated to the generation interconnection project G349 in the MISO Large Generation Interconnection Agreement (LGIA) filed at FERC in Docket No. ER09-499-000 on January 2, 2009, and accepted for filing by FERC delegated letter order dated March 6, 2009. However, the G349 LGIA has been suspended by the Interconnection Customer. If the Interconnection Customer unsuspends the LGIA, the project milestone dates, estimates of interconnection and network upgrade costs, and allocation of network upgrade costs to project G349 would be reviewed by MISO and NSP, consistent with the practice for other unsuspended generation interconnection projects.</p>
<p>June 23, 2009; Iberdrolausa; The NSP BRIGO Transmission Expansion Project In-Service Date Project document dated April 1, 2008 states that a Yankee Substation Upgrade is projected to be in service on December 2009. Can you please give an update on scheduled outages between now and Dec 09 and how it will impact wind projects that connect to the Yankee Substation? Also is December 2009 still the projected completion date for the substation upgrades?</p>	<p>June 30, 2009; The NSP BRIGO Project is currently on schedule to be in-service in December 2009. Any changes impacting the in-service date (ISD) will be reported/updated on OASIS.</p>
<p>June 23, 2009; Iberdrolausa; The Summer SW MN Operating Guide Wind (effective 5/1/09 to 11/1/09) states an operating limit of 880 MW. Can you please give an update on what the operating limit will be once the BRIGO upgrades (scheduled for completion in Dec 2009) are completed?</p>	<p>June 30, 2009; The planning study for the Certificate of Need (CON) for BRIGO added up to 350 MW of additional generation outlet from the Buffalo Ridge area. Operating studies are currently being performed to determine the operating limits of the outlet. The operating limits should be available by the end of the summer.</p>
<p>October 2, 2009; Excel Engineering, Inc.; The undated and uncertified transmission study report ("Dotson Area Load Serving And Generation Outlet Study") produced by Xcel Energy, Great River Energy, and Alliant Energy has sections pertaining to the New Ulm load-serving topic.</p>	<p>October 19, 2009: The recommended plan presented in the report helps meet three objectives, provide generation outlet from Storden, meet load serving needs at Dotson and current needs of New Ulm using a single</p>

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<p>It explains very well that prior to the addition of an additional 115/69 kV transformation in the New Ulm vicinity, outage of the existing Ft Ridgely 115/69 kV transformer results in voltage collapse and 69 kV line overloads. However, it does not state whether outage of the Wilmarth-Ft Ridgely 115 kV or the Minn Valley-Franklin 115 kV or the Franklin-Ft Ridgely 115 kV line sections results in inadequate load-serving capability to the New Ulm load, either due to overloads or low voltage conditions.</p> <p>The Conclusion section does state that the Recommended Plan "...also provides a new 115 kV source at New Ulm allowing reliable service to the entire New Ulm load..." It is not clear whether this is intended to mean a new 115 kV source is a required component of an effective load-serving plan, or that it is just a welcome characteristic of the Recommended Plan.</p> <p>Please provide clarification as to whether satisfaction of the New Ulm load-serving need requires a new 115 kV transmission source to the New Ulm vicinity.</p>	<p>line running between Heron Lake and Ft. Ridgely. This is the reason it is a " welcome characteristic" of the recommended plan.</p> <p>However, the 115 kV line from Ft. Ridgely - West New Ulm alone is sufficient to meet the load serving needs of City of New Ulm. The Loss of Franklin - Minn Valley or Wilmarth - Ft. Ridgely result involtage drop, but do not result in voltage violations in the near term. Therefore the 161 kV line to Dotson - storden - Heron Lake is not required to meet the New Ulm transmission needs. In addition to this, the planned 345 kV source near Franklin is expected to significantly improve the voltage profile along the Minnesota Valley - Wilmarth 115 kV line.</p>
<p>January 20, 2010; Excel Engineering, Inc.; The Loon Lake 115/69 kV transformer which was installed in the late 1990s was a 47 MVA unit. This unit was planned to be replaced with a larger unit to accommodate generation interconnection requests G141 and G173, and perhaps others, such as G261. However, not all these proposed generation projects have proceeded, or been built out to full proposed capacity.</p> <p>Some of the current MISO and MRO transmission system models show a 112 MVA unit at Loon Lake, but there appears to be no publicly-available information regarding whether the Loon Lake transformer upgrade has occurred, or the size of any new unit, so the actual present Loon Lake transformer size is not easily discernable. Please provide an update regarding the existing Loon Lake (Waseca, MN) transformer rating, and whether there is any pending project to increase the transformer capacity.</p>	<p>January 22, 2010; The transformer at Loon Lake is a 122 MVA transformer. There are no plans at this time to increase the size.</p>
<p>February 25, 2010; Excel Engineering, Inc.; The MISO February 23, 2010 draft report entitled "SPA Cycle 1 Phase 2 Analysis Buffalo Ridge Study Group" which is available at http://www.midwestmarket.org/publish/Document/75871b_126e10582e3_7f460a48324a/SPA_Cycle1_Phase%202_BR_Report_Draft.pdf?action=download&_property=Attachment</p> <p>indicates in its Table 3.6 that the Split Rock 345/115 kV transformers #10 and #11 have a "Contingency Rating MVA" of 448 MVA. Since these transformers have a nameplate continuous rating of 448 MVA, it would appear that the appropriate "emergency" rating should be at least 115% of this 448 MVA value, consistent with other Xcel/NSP transformers, including the adjacent Split Rock 336 MVA 230/115 kV #7 transformer, which has an indicated "contingency" rating in Table 3.6 of 386 MVA.</p>	<p>March 9, 2010; The 345/115 kV transformers are limited to 448 MVA due to transformer associated equipment. The transformer itself would have an applicable emergency limit, but the equipment limits the transformer to its normal rating.</p>

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<p>Please provide clarification as to the correct emergency rating for the Split Rock 345/115 kV transformers.</p>	
<p>February 25, 2010; Excel Engineering, Inc.; The MISO February 23, 2010 draft report entitled "SPA Cycle 1 Phase 2 Analysis Buffalo Ridge Study Group" which is available at http://www.midwestmarket.org/publish/Document/75871b_126e10582e3_7f460a48324a/SPA_Cycle1_Phase%202_BR_Report_Draft.pdf?action=download&property=Attachment</p> <p>indicates in its Table 3.6 that the Split Rock-Sioux Falls 230 kV line has a "Contingency Rating MVA" of 620 MVA. However, this appears to be the <i>continuous</i> rating of the line conductor.</p> <p>Please indicate whether this line has a higher "emergency rating" that would be applicable to the post-contingent conditions being evaluated in the MISO SPA study.</p>	<p>March 21, 2010; The 230 kV line between Sioux Falls and Split rock is limited by the 336 MVA 230/115 kV transformer. The summer emergency limit is 386.4 MVA. The next most limiting line equipment is owned by WAPA. They own equipment that will limit the line to 480 MVA summer normal and 498.9 MVA summer emergency.</p>
<p>March 11, 2010; Excel Engineering, Inc.; This response is somewhat informative, but does not provide the desired level of detail regarding identification of what causes the stated 448 MVA limitation, and what the transformer emergency rating would otherwise be.</p> <p>1) What is the "associated equipment" that causes the transformers to be limited to 448 MVA? For example, is it jumpers, CTs, a short section of buswork, protective relaying, or something else?</p> <p>2) What is the ampere rating of the "associated equipment" identified in response to (1)?</p> <p>3) Is the 448 MVA limitation based on an assumption that there is a breaker out of service in the 115 kV breaker-and-a-half row to which the transformer is connected? If so, what would be the transformer emergency rating if this "prior outage" condition were not present?</p> <p>4) Regardless of what the "associated equipment" may happen to be, what would the emergency rating be for the 345/115 kV transformers if no such equipment-based limitations were present?</p>	<p>March 15, 2010;</p> <p>1) The associated equipment is a CT</p> <p>2) CT has a rating of 448 MVA.</p> <p>3) No</p> <p>4) The transformer has a summer emergency rating of 515 MVA.</p>
<p>April 1, 2010; Power Systems Engineering; Please provide clarification as to the correct continuous and emergency ratings for the transformers, including the 115/34.5kV transformers, at the Paynesville substation.</p>	<p>April 12, 2010; The 115/34.5 kV transformer is now distribution. Previously, the 115/34.5 kV transformer was a transmission transformer. The transmission rating of the 115/34.5 kV transformer was 28 MVA normal and 32 MVA summer peak.</p>
<p>April 7, 2010; Excel Engineering; The March 15, 2010 response to the inquiry regarding the rating of the two Split Rock 345/115 kV transformers indicated that the "limiting equipment" that causes the reported 448 MVA rating is a CT (Current Transformer). For this response to be correct, it</p>	<p>April 12, 2010; The limiting CT is on the 345 kV side of the transformer. The 1000 amp CT is taped at 500:5 with a rating factor of 1.5. Application of the IEEE standard C37.110-2007 calculates the 750 amps as noted.</p>

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<p>appears that it would be necessary for the CT to have a rating of 2249 amps if it is a 115 kV CT, or 749.5 amps if it is a 345 kV CT that is being referenced.</p> <ol style="list-style-type: none"> 1. Given that standard CT ratings are 1200, 1600, 2000, and 3000 amps, how does a CT come to have such a rating? 2. Exactly where in the transformer circuit is the referenced CT located? 										
<p>April 7, 2010; Excel Engineering; Recent Facility Studies prepared by Xcel Energy for MISO Southwest Minnesota Group 5 generation interconnection requests show the Granite Falls-Minn Valley section of the Granite Falls-Minn Valley-Panther-McLeod-Blue Lk 230 kV line to have a rating of 443 MVA. This rating is different from any previously ascribed to that line, and it is not mentioned whether the balance of the line has also been re-rated.</p> <p>Please provide information regarding the present normal (continuous) and emergency Summer ratings applicable to the Granite Falls-Minn Valley-Panther-McLeod-Blue Lk 230 kV line segments.</p>	<p>May 5, 2010; The summer line ratings of the requested facilities are as follows.</p> <p>Granite Falls – MN Valley = N: 300.8 MVA E: 300.8 MVA MN Valley – MN Valley Tap = N: 459.4 MVA E: 478.1 MVA MN Valley Tap – Panther = N: 459.5 MVA E: 505.3 MVA Panther – Mcleod = N: 318.7 MVA E: 318.7 MVA Mcleod – Blue Lake = N: 391.2 MVA E: 430.4 MVA</p>									
<p>April 15, 2010; Power Systems Engineering; Thank you for your April 12 response regarding one of the transformers at the Paynesville Substation. Please identify and provide the continuous and emergency ratings for the other transformers at the Paynesville substation.</p>	<p>April 20, 2010; Both of the 115/69 kV transformers are rated at 46.7 MVA summer normal and 53.7 MVA summer emergency. The other 115/34.5 kV transformer is owned by GRE.</p>									
<p>May 3, 2010; Excel Engineering; Recent MISO-issued powerflow study results indicate the Xcel/NSP LaCrosse-Monroe Co 161 kV line has a Summer rating of 167 MVA. Please address the following questions:</p> <ol style="list-style-type: none"> 1. Is this rating correct? 2. Is this rating due to 600 amp substation equipment? 3. Assuming the limiting equipment will be replaced or bypassed when the planned Monroe Co-Council Creek 161 kV line is constructed, what will be the applicable normal and emergency conductor ratings for the La Crosse-Monroe Co 161 kV line? 	<p>May 4, 2010; The rating on the line is:</p> <table border="0" style="margin-left: 40px;"> <tr> <td></td> <td style="text-align: center;">Normal</td> <td style="text-align: center;">Emergency</td> </tr> <tr> <td>Summer</td> <td style="text-align: center;">267.2</td> <td style="text-align: center;">293.9</td> </tr> <tr> <td>Winter</td> <td style="text-align: center;">349.7</td> <td style="text-align: center;">384.7</td> </tr> </table> <p>167 MVA was most likely applicable in previous model series developments. For future requests, the rating of facilities will be supplied. For inquiries on the scope of equipment replacements, please contact MISO and request a facilities study.</p>		Normal	Emergency	Summer	267.2	293.9	Winter	349.7	384.7
	Normal	Emergency								
Summer	267.2	293.9								
Winter	349.7	384.7								
<p>May 3, 2010; Excel Engineering; Please provide information as to whether, in conducting bulk power system planning studies, the outage of the A S King-Eau Claire 345 kV line alone, <u>without</u> cross-trip of the Eau Claire-Arpin 345 kV line, should be considered a valid contingency for load-serving, transfer capability, or generation interconnection studies.</p>	<p>May 7, 2010; Any operation of the AS King - Eau Claire 345 kV line will automatically cross-trip the Eau Claire - Arpin 345 kV line."</p>									
<p>May 10, 2010; Excel Engineering; Thank you for the response regarding the Granite Falls-Minn Valley-Panther-McLeod-Blue Lake 230 kV line ratings. To assist MISO in their generation interconnection feasibility screening efforts, please address the following related question: If the limiting equipment (800 amps) on the Panther-McLeod line segment</p>	<p>May 15, 2010; The rating for the facility has been provided. If additional information is required for a generation interconnection feasibility screening efforts by MISO, MISO can request the information through normal channels.</p>									

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<p>were upgraded, what would the rating then become for the Panther-McLeod line segment?</p>	
<p>May 14, 2010; Excel Engineering; Can you please provide the Impedance and Resistance for Red Rock Transformers #9 and #10 for system base along with the operating and emergency ratings. Also are there any projects assigned to upgrade those transformers in the near future.</p>	<p>June 1, 2010; Long version of the question and answer can be found in the Transmission Q&A Additional Materials file named 20100501-Excel Engrg -NSP-QA-RedRock.pdf</p>
<p>September 2, 2010; EcoEnergy;</p> <p>(1) Please provide information if, in conducting bulk power system planning studies, the outage of the Eau Claire-Arpin 345 kV line cross-trip the A S King-Eau Claire 345 kV line.</p> <p>(2) If Eau Claire-Arpin 345 kV line does not cross-trip the A S King-Eau Claire 345 kV line, what other lines cross-tip the outage of Eau Claire-Arpin line?</p> <p>(3) Pleae provide the following information for the Coulee-Saw Creek 69kV line:</p> <ol style="list-style-type: none"> 1. What is the normal/emergency rating? 2. Has the line any terminal limitation? If so, once the terminal limitation is lifted what is the next limit? 3. What is the length of the line? 4. What is the conductor type/size? 5. Has Xcel plans to upgrade the line? 	<p>September 8, 2010</p> <p>(1) An outage of the Eau Claire-Arpin 345 kV line does not cross trip the King-Eau Claire 345 kV line.</p> <p>(2) An outage of the Eau Claire-Arpin 345 kV line does not cross trip any other NSP lines.</p> <p>(3) The rating for this segment of line is 595 amps for all normal and emergency conditions. Additional information will be made available upon completion of a facility study. Facility studies are generally done through a MISO queue request. At this time there are no plans to upgrade this line by Xcel Energy.</p>
<p>March 4, 2011; EcoEnergy:</p> <p>Please provide EcoEnergy the System Impact Study results for Lakefield Junction Peaking Station and for the first phase of the NSP-Angus Anson Gas Station built in 1994. We could find the SIS results for the second phase of NSP-Angus Anson Gas Station (2005) in MISO web site.</p>	<p>April 20, 2011</p> <p>NSP does not have any copies of the System Impact Studies requested.</p>
<p>June 1, 2011; Customer:</p> <p>Yesterday at about 15:00 the entire city of Maple Plain, MN lost power. We had heard from an Xcel operator that the problem included several western metro suburbs. This event was not in yesterdays event log.</p> <p>What happened, and why wasn't the event recorded in the daily log?</p>	<p>July 15, 2011</p> <p>The outage to Maple Plain on 5/31/2011 was due to an outage on a distribution feeder. Distribution feeder outages are not recorded in the transmission daily log.</p>
<p>October 12, 2011; Saracen Energy Power Advisors LP;</p> <p>We notice the following statement from the Daily Operations Report in the link below: http://www.rmao.com/xfpp/nsp_daily_logs/20111011-NSP-DailyOperationsLog.pdf</p> <p><i>'Continuation from 10/10-MISO requested a cap limit of 20MW at Oak Lake wind farm per the White-Watertown 345KV outage operating guide.'</i></p> <p>However, when we check the NSP posted operating guide in the link below, we cannot find any guide for White-Watertown</p>	<p>October 14, 2011; The operating guide in question was issued by MISO for an outage on WAPA equipment (White-Watertown line). The posting of operating guides on the RMAO site by Xcel Energy is restricted to NSP-issued operating guides that affect generation curtailments related to transmission service that NSP purchases. The guide in question was not issued by NSP, therefore, the guide is not posted to the RMAO site.</p>

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<p>345 outage. https://www.rmao.com/xfps/xcel_op_guides.html Could you please clarify it?</p>	
<p>May 21, 2012: Power system Engineering; Please provide outage information by segment for the Lakefield Junction – Lakefield Generation – Fieldon - Wilmarth 345 kV line from 2006 through the present, showing the date, duration, and cause, including whether the outage was planned (such as for maintenance or construction) or unplanned (such as weather-related or other equipment failure) for each outage during that period.</p>	<p>August 15, 2012; Thank you for your inquiry. The Operator/Event Daily Logs are posted in the Xcel Energy website (http://www.rmao.com/xfpp/nsp_main.html). Currently, the Operator/Event Daily Logs posted begin in October 2011.</p>