

**BEFORE THE MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS  
FOR THE  
MINNESOTA PUBLIC UTILITIES COMMISSION**

In the Matter of a Petition by Excelsior Energy, Inc.  
for Approval of a Power Purchase Agreement under  
Minn. Stat. §216B.1694, and Determination of Least  
Cost Technology and Establishment of a Clean Energy  
Minimum Under Minn. Stat. §216B.1693.

MPUC Docket: E/6472/M-05-1993  
OAH Docket: 12-2500-17260-2

**mncoalgasplant.com (MCGP) REPLY BRIEF**

**I. INTRODUCTION**

The Petition to force a PPA between Excelsior and Xcel must be denied. Excelsior has not met its burden of proof. The Mesaba Project is not an Innovative Energy Project under the statute, nor has it met the criteria of a Clean Energy Technology. The cost projections for Excelsior's Mesaba Project are not credible, and the transmission costs and interconnection issues have not been disclosed or resolved. The economic development costs of this project far outweigh benefits. While Excelsior attempts to diminish the authority of the Commission, the Commission was legislatively authorized and mandated to review the Mesaba Project, and the Commission was given specific criteria for this review. Denial of this Petition is within the Commission's statutory authority.

**II. EXCELSIOR'S COST PROJECTIONS ARE NOT CREDIBLE**

Excelsior states that "[n]o party in this proceeding has filed any testimony questioning the integrity or accuracy of the comprehensive, bottom-up SCPC and IGCC cost calculations prepared by Fluor." Excelsior, p. 15. The Fluor reports have been challenged, and there is evidence in the record that show that the project cost is far greater than that utilized by Fluor for its "bottom-up" calculations, and when it starts that far off, the result is not credible. The cost of the Mesaba Project is \$2,155,680,783.<sup>1</sup>

---

<sup>1</sup> MCGP 5055, DOE Notice of Financial Award and Agreement, May 23, 2006.

Not only is this document credible, but the power of it is evidenced in the fight of Excelsior to keep it from being disclosed. Any calculations derived from less than that fundamental “bottom” number are flawed and not credible.

Excelsior has argued that this \$2,155,680,783 project cost is included in their calculations, but evidence says it is not. Excelsior Initial Brief, p. 16, Figure 1; p. 17, Figure 2. Looking at Cortez DAC-2, the highest IGCC COE cost, 5.91, or the IGCC w CC at 7.58, must each be increased nearly 100% to equal Dr. Amit’s cost estimate, and this is a cost for capture – sequestration is not mention in association with these cost estimates, and pipeline and sequestration equipment and costs are not listed – the cost would be higher than that presented for transport and sequestration.<sup>2</sup> Dr. Amit’s testimony specifically challenges the Excelsior cost calculations, and the Fluor Report is the basis for the calculations. The same is true for the \$/kw cost, where the DOE cost of \$2,155,680,783, base cost without carbon capture or sequestration, gives a \$/kw cost of \$3,593 ( $\$2,155,680,783/600,000$ ), and the Excelsior DC2 and DC-2 provide a range of \$1,158-1,630, in this case the Excelsior cost must be increased by over 100% to equal the DOE cost. Pay particular attention to the TRADE SECRET cost and compare with the DOE cost that Excelsior did not want disclosed. The same applies to EE 1095,DC-3. The COE cost is far removed from those of Dr. Amit, and the \$/kW cost calculated from the DOE Financing Agreement is not even close to the \$/kW cost.

The Fluor calculations are as problematic. The bottom line of the 30% sequestration estimate, the [TRADE SECRET] Adjusted EPC Cost is not even close to the DOE cost.<sup>3</sup> This same problem is reflected in EE 1100-1101, Cortez DC-6, Fluor Report, Independent Analysis of Generation. The cost and \$/kW cost are not stated for Mesaba as they are for the other projects, and it impossible to guess these numbers from the graphs, but comparing the \$2,155,680,783 number with those of the other projects reviewed, the problems are obvious. Because these foundational numbers are so far off, Excelsior calculations are not credible.

<sup>2</sup> EE 1093-1094, Cortez DC-2-DC-3; MCGP 5055.

<sup>3</sup> EE 1102-1103, Cortez DC-7, p. 7, Fluor Report, Partial Carbon Dioxide Capture Case.

Another problematic Fluor Report that has been challenged by Intervenors is the Fluor Report focused on CO2 capture and sequestration.<sup>4</sup> Costs in this exhibit include:

- Cost of compression (p. 8, 8/31/05 email)
- Cost (\$\$\$ and efficiency) is not shown for IGCC 90% capture (Table 1, p. 13)
- Cost of plant is NOT that of the DOE Notice of Financing (ROM Performance Table, p. 16, Capital Cost and \$/kw Cost, Dec. 15, 2005)
- Comparing Dr. Amit's \$/MWh rates with the EPRI PowerPoint: Integrated Gasification Combined Cycles with CO2 Capture, Mesaba numbers are significantly different (EPRI Power Point, p. 21)

MCGP 6013, Excelsior Response to MCEA Information Request No. 7 w/Attachment.

## **II. THE PUC HAS EXPRESS AUTHORITY TO DENY EXCELSIOR'S PETITION**

Excelsior, in its Initial Brief, makes many attempts to erode or minimize the PUC's authority over this decision, claiming it has an unconditional entitlement to a Power Purchase Agreement. That is a false belief, one of wishful thinking, contrary to the statute. The Commission has full authority over this Petition, expressly granted in the statute, and must determine whether Mesaba is an Innovative Energy Project, and that it has met the specific and detailed criteria of the statute.

### **A. THE PUC HAS THE AUTHORITY TO DETERMINE THAT MESABA IS NOT AN INNOVATIVE ENERGY PROJECT.**

Excelsior admits that the Commission must determine whether or not Mesaba is an Innovative Energy Project (IEP). Excelsior first argues that the "supremacy of legislative action and necessary deference" of an agency to legislative action precludes the PUC exercising authority, but then uses agency action to support its argument that belief that it has met the requirements of the statute! Excelsior Initial Brief, p. 6. Worse, the examples are not consistent with its claims.

Excelsior claims "there is little doubt that the Mesaba project meets the statutory definition of an innovative energy project." Excelsior Initial Brief, p. 10; see also p. 5, fn. 12. This is based on the Commission's authorization of the \$10 million legislatively mandated grant from the state's Renewable

---

<sup>4</sup> MCEA 6013, Excelsior Response to MCEA Information Request No. 7 w/Attachment (note CO2 handling plan in Table, p. 6, fn. 5)

Development Fund. Minn. Stat. §216B.1694, Subd. 2(8). Yet this grant occurred with the Commission's Order of Feb. 23, 2005, seven months prior to the IRR Commissioner's November 7, 2005, irregular "designation" of the West site, as required by statute, so it's logically not a determination of IEP status! EE 1034, Designation of Commissioner of IRR, Nov. 7, 2005. The Commission's approval of the RDF grant was expressly not a determination of the status of the project as an IEP.

Excelsior also claims that "the Department of Commerce has concluded that Mesaba Project is an Innovative Energy Project." Excelsior Initial Brief p. 10. The Scoping Decision, signed by the Commissioner, makes this identical statement, that that "the Department of Commerce has concluded that Mesaba Project is an Innovative Energy Project" but neither the Commissioner of Commerce nor Excelsior cites any authority or basis for this "conclusion" and both make reference to the Direct Testimony of Elion Amit. Id. The language of Amit's testimony is not nearly so conclusory, and doesn't make any determination that it "is" an Innovative Energy Project. Amit states that the project "appears to" meet the requirements of part (1) of the statute and states that it meets the requirements of parts (2) and (3) of the statute. DoC 3000, Amit Direct Testimony, p. 5-6. Amit addresses whether it meets the requirements, that it "appears to" and "does" meet the requirements, but at no time does he make the conclusory statement that it IS an Innovative Energy Project.

While Excelsior's argument adds to the credence of a need for such determination, it offers no authority whatsoever for this statement of the Commissioner, misrepresents Amit's Testimony, and detracts from its credibility generally.

**B. THE LEGISLATIVE CRITERIA SIMILAR TO CERTIFICATE OF NEED ARE LEGISLATIVE MANDATE TO COMMISSION**

Excelsior makes contorted and contradictory arguments about Certificate of need, both misrepresenting the statute and saying it doesn't apply. First, Excelsior argues falsely that "[t]he certificate of need for an IEP is granted by statutes." Excelsior Initial Brief, p. 9. Excelsior also argues that the "legislature granted the Mesaba Project its certificate of need by exempting the project and related

transmission upgrades from all of the requirements for a certificate of need.”<sup>5</sup> These are false statements, the Mesaba Project is **EXEMPT**. Minn. Stat. §216B.1694. The statute as proposed initially did grant, used the word “grant,” but that was amended to state “exempt.” This distinction is important in all instances where a Certificate of Need is a necessary prerequisite to action by Excelsior.

Excelsior argues in a most confusing way that “Xcel’s system impact analysis is a traditional Certificate of Need analysis from which the project is exempt under Minnesota law” and complains that the Intervenor is disagreeing with energy policy set by the legislature. Excelsior Initial Brief, p. 41. As Excelsior notes, however, the agency must observe the “supremacy of legislative action and necessary deference” by the agency to that legislative action.” Excelsior Initial Brief, p. 6. It really doesn’t matter whether Excelsior argues that the criteria of the Mesaba enabling legislation is similar to Certificate of Need criteria, or whether the criteria is similar, the criteria for review are those specified by the legislature and are those subject to Commission review as directed by the legislature. Need is logically an issue when any cost determination must be made, because, again, no resource is least cost if a party is forced to buy what it does not need.

On the other hand, Excelsior tries to argue “need” when it suits its purposes, stating that the state has a “documented need for 3,000-6,000MW of baseload capacity in the current planning horizon. Excelsior Initial Brief, p. 4, citing Excelsior Response to MCEA IR No. 5. Excelsior is citing itself, using a document it created with a compilation of various Minnesota utility Integrated Resource Plans, not the Commission Orders confirming need. Apparently Excelsior has just listed and totalled the many serial IRP requests, i.e., nine Xcel IRP’s dating from 2000 to 2004, and the “Big Stone Utilities” most recent resource plan requests, which are currently being challenged in the Big Stone II proceeding. The Excelsior response to MCEA’s IR is not responsive, much less suitable documentation of need for 3,000-6,000MW of baseload capacity! Id.; see also Excelsior Initial Brief, p. 51-55 where Excelsior again

---

<sup>5</sup> Excelsior cites statutory exemption and statement of Rep. Mike Beard, St. Paul Public Hearing, Tr. at 33.

argues need).<sup>6</sup> Excelsior has been broadcasting this myth since its inception:

- Conservative forecasts indicate a need for 3300-6000MW in Minnesota in the current planning horizon
- Minnesota is at risk of an electric generation shortfall, and the need to act is urgent

MCGP 5045, slides.4, 14 Mesaba Energy Project Presentation to Senate Energy, Excelsior Energy, January 15, 2002.

The myth of “need” serves utilities and developers in their desire to build new generation, but it is false, there is no dire need for electricity, the market is flat at best, many independent power producers had financial problems and went bankrupt when the electric market crashed, i.e., NRG, and much generation is in line to be built, limited by market forces.<sup>7</sup> There is plenty of electricity.

### C. INTEGRATED RESOURCE PLANNING IS A LEGISLATIVELY MANDATED AND BENEFICIAL TOOL

There is no authority, no legitimate reason, for Excelsior to discount or minimize Integrated Resource Planning and the related Orders of the Commission. Excelsior claims Xcel improperly relies on the IRP Order to avoid the Mesaba PPA, but the IEP statute does not circumvent the Integrated Resource Planning (IRP) process. IRP review is an exhaustive iterative process used by the Commission to implement the state’s policy to facilitate utility movement toward renewable resources:

**Subd. 2. Resource plan filing and approval.** A utility shall file a resource plan with the commission periodically in accordance with rules adopted by the commission. The commission shall approve, reject, or modify the plan of a public utility, as defined in section 216B.02, subdivision 4, consistent with the public interest. In the resource plan proceedings of all other utilities, the commission's order shall be advisory and the order's findings and conclusions shall constitute prima facie evidence which may be rebutted by substantial evidence in all other proceedings. With respect to utilities other than those defined in section 216B.02, subdivision 4, the commission shall consider the filing requirements and decisions in any comparable proceedings in another jurisdiction. As a part of its resource plan filing, a utility shall include the

<sup>6</sup> Excelsior’s 3,000-5,000MW need claim has also been challenged in the Mesaba Project siting docket by the Army Corps of Engineers in association with the DEIS. Available online at the PUC Energy Facilities, Mesaba Project docket GS06-668: [http://energyfacilities.puc.state.mn.us/documents/16573/USCOE-Comment-Ltr\(12-13&27-06\).pdf](http://energyfacilities.puc.state.mn.us/documents/16573/USCOE-Comment-Ltr(12-13&27-06).pdf)

<sup>7</sup> See, e.g., MCGP 5033, MISO queue as of November 10, 2006; MCGP 5035, NERC 2005 Long-Term Reliability Assessment, p. 14, 16-17, 21-22, 57; MCGP 5036, p. 1, Midwest at a Glance – Spring 2006, Global Energy. See also the Xcel IRP Orders: XE 2075, Order Establishing Resource Acquisition Process, Establishing Bidding Process Under Minn. Stat. § 216B.2422, Subd. 5, and Requiring Compliance Filing, MPUC Docket No. E002/RP-04-1752 (May 31, 2006); XE 2076, Order Approving Resource Plan As Modified, Finding Compliance With Renewable Energy Objectives Statute, and Setting Filing Requirements, MPUC Docket No. E002/RP-04-1752 (July 28, 2006); XE 2077, Order After Reconsideration Clarifying Filing Requirements, Requiring Notice To Alternative Providers, Setting Deadlines For Baseload Proposals, and Accepting Reports, MPUC Docket No. E002/RP-04-1752 (October 18, 2006); XE 2079, Order Approving Xcel’s Proposed Plan, Subject to the Terms of a Settlement Agreement and Additional Conditions and Clarifications, MPUC Docket No. E002/M-02-633 (March 8, 2004) and Settlement Agreement.

least cost plan for meeting 50 and 75 percent of all new and refurbished capacity needs through a combination of conservation and renewable energy resources.

The IRP process expressly utilizes a preference for renewable energy:

**Subd. 4. Preference for renewable energy facility.** The commission shall not approve a new or refurbished nonrenewable energy facility in an integrated resource plan or a certificate of need, pursuant to section 216B.243, nor shall the commission allow rate recovery pursuant to section 216B.16 for such a nonrenewable energy facility, unless the utility has demonstrated that a renewable energy facility is not in the public interest.

Under the statutory definitions for resource planning:

(c) "**Renewable energy**" means electricity generated through use of any of the following resources:

- (1) wind;
- (2) solar;
- (3) geothermal;
- (4) hydro;
- (5) trees or other vegetation; or
- (6) landfill gas.

Minn. Stat. §216B.2422 (2006).

Xcel has complied with the IRP process and plans to fulfill its 375MW in 2015 need with wind and hydro generation.<sup>8</sup> These options are by far the least cost when compared to the Mesaba PPA.

### **III. TRANSMISSION COSTS OF INTERCONNECTION AND NETWORK UPGRADES ARE HIGH AND PROBLEMS REMAIN**

Most people know little or nothing about the transmission system, fewer have been to a transmission planning meeting, and even fewer gleefully review transmission studies. The transmission planning process is arcane, but publicly available information from the planning entities explains the process and the studies.<sup>9</sup> Excelsior has made application for transmission service and completed some studies for both the East and West site, and most of these studies are in the record.

<sup>8</sup> XE 2075, Order Establishing Resource Acquisition Process, Establishing Bidding Process Under Minn. Stat. § 216B.2422, Subd. 5, and Requiring Compliance Filing, MPUC Docket No. E002/RP-04-1752 (May 31, 2006); XE 2076, Order Approving Resource Plan As Modified, Finding Compliance With Renewable Energy Objectives Statute, and Setting Filing Requirements, MPUC Docket No. E002/RP-04-1752 (July 28, 2006); XE 2077, Order After Reconsideration Clarifying Filing Requirements, Requiring Notice To Alternative Providers, Setting Deadlines For Baseload Proposals, and Accepting Reports, MPUC Docket No. E002/RP-04-1752 (October 18, 2006); XE 2079, Order Approving Xcel's Proposed Plan, Subject to the Terms of a Settlement Agreement and Additional Conditions and Clarifications, MPUC Docket No. E002/M-02-633 (March 8, 2004) and Settlement Agreement.

<sup>9</sup> Transmission planning information is available at: <http://www.midwestiso.org/page/Generator+Interconnection> ; Selected studies are at: [http://www.midwestiso.org/publish/Folder/3c2d0\\_106c60936d4\\_-75ac0a48324a](http://www.midwestiso.org/publish/Folder/3c2d0_106c60936d4_-75ac0a48324a); at

## A. TRANSMISSION 1001 – TRANSMISSION STUDIES

The MAPP Design Review Subcommittee Policies and Procedures<sup>10</sup> document explains this process for the region in which the Mesaba Project would need transmission. Essentially, new transmission and generation cannot have an impact on the transmission system that destabilizes the system or could put the system at risk. A transmission analysis consists of a group of studies necessary for approval of generation interconnection, including Steady State Analysis, Short Circuit Analysis, Stability Analysis and for new generation, a Transfer Analysis (Generator Deliverability Study), Preliminary Fault Analysis, and Loss Analysis necessary to facilitate interconnection.<sup>11</sup> These studies are part of an interconnection package, and are incorporated with the other studies, to be interpreted as a whole. The Deliverability Studies of January 6, 2007, makes this specific point:

*For projects that are still in study mode, this report is attached to its system impact study report.*

EE \_\_\_\_\_, Deliverability Study Report, p. 1, G477 and G519.

Deliverability studies are conducted under the MISO Generator Deliverability Study Method,<sup>12</sup> referenced in the Deliverability Studies in the record. Id. This Study Method was recently adopted by MISO because of limitations of prior methodology, which required deliverability to the entire MISO footprint, not just to the service territory intended.<sup>13</sup> The Study Method document explains the process and meaning of the Deliverability studies submitted by Excelsior.

This document serves the purpose of providing the methodology to determine whether or not a generator can be certified as deliverable under either the Midwest ISO's [different types of service]. A generator that is certified deliverable (not bottled-up) could be

---

Transmission Services, Study Reports and Study Procedures are publicly available:

<http://www.midwestiso.org/page/Transmission+Services> ;

<sup>10</sup> MCGP \_\_\_\_\_, MAPP Design Review Subcommittee Policies and Procedures, available online at:

<http://www.mapp.org/request/getfile?method=inline&gpfid=5496>

<sup>11</sup> MCGP \_\_\_\_\_, MISO process: [http://www.midwestmarket.org/publish/Document/469a41\\_10a26fa6c1e\\_-75880a48324a/Summary.pdf?action=download&property=Attachment](http://www.midwestmarket.org/publish/Document/469a41_10a26fa6c1e_-75880a48324a/Summary.pdf?action=download&property=Attachment) MISO process includes: Initial Analysis [http://www.midwestmarket.org/publish/Document/469a41\\_10a26fa6c1e\\_-75860a48324a](http://www.midwestmarket.org/publish/Document/469a41_10a26fa6c1e_-75860a48324a) ; System Impact Study [http://www.midwestmarket.org/publish/Document/469a41\\_10a26fa6c1e\\_-75840a48324a](http://www.midwestmarket.org/publish/Document/469a41_10a26fa6c1e_-75840a48324a) ; and Spec Sheets for Point-to-Point or Network Services: [https://oasis.midwestiso.org/documents/miso/network\\_point.html](https://oasis.midwestiso.org/documents/miso/network_point.html)

<sup>12</sup> MCGP \_\_\_\_\_, MISO Generator Deliverability Study Method:

[http://www.midwestmarket.org/publish/Document/3e2d0\\_106c60936d4\\_-](http://www.midwestmarket.org/publish/Document/3e2d0_106c60936d4_-767f0a48324a/MISO_Generator_Deliverability_Draft_8-11-06.pdf?action=download&property=Attachment)

[767f0a48324a/MISO\\_Generator\\_Deliverability\\_Draft\\_8-11-06.pdf?action=download&property=Attachment](http://www.midwestmarket.org/publish/Document/3e2d0_106c60936d4_-767f0a48324a/MISO_Generator_Deliverability_Draft_8-11-06.pdf?action=download&property=Attachment)

<sup>13</sup> XE 2027, Shiro Surrebutal, p. 3.



designated by any Load Serving Entity (LSE) within the Midwest Energy Market footprint to satisfy its Resource Adequacy requirement... The generator deliverability study is a complement of Midwest ISO Load deliverability study performed in the Midwest ISO expansion planning process.

The way this is determined is by performing a "Generator Deliverability Study" (deliverability study). This study analyzes the ability of groups of generation in small pockets throughout the Midwest ISO footprint to operate at their maximum capability without being "bottled up" by transmission constraints. The test is performed in a 7-step process, which is outlined in detail in this document. The 7 steps can be grouped into 3 sections: Create a load flow model that is adequate for the study, perform the load flow analyses to find the potential "bottling" constraints (pre-screening), then post-process these results. The post-processing involves creating an "electrical circle" of generators around each potentially overloaded facility, such facilities determined during the second step, and using a reasonableness test to limit the amount of generators contributing to the flow in the overloaded element.

The generation deliverability study is one piece of Generation Interconnection Study and Transmission Expansion Planning Study process and will supplement rather than replace existing interconnection and planning studies.

MCGP \_\_\_\_\_, MISO Generation Deliverability Study Method, p. 1.

#### **B. TRANSMISSION 1002 – DIFFERENT SERVICE TYPES WERE REQUESTED**

Parties wanting generation interconnection pay a fee and join the MISO queue. Excelsior Mesaba Project joined the MISO queue, Hoyt Lakes as number 38280-01, on October 20, 2004, and Taconite as number 38491-01, on May 19, 2005. These were both requests for "Network Resource Interconnection Service" (NRIS) (necessary for Network Resource designation), although the studies were performed as "Network Integrated Transmission Service" (NITS) to identify firm delivery as a Local Capacity Resource.<sup>14</sup> Xcel also entered the queue for studies, requesting studies as a Network Integrated Transmission Service.<sup>15</sup> Xcel's NITS Transmission Service requests resulted in System Impact Study A324, for transmission requests for 450MW and 153MW, #7642398 and #7642399.<sup>16</sup>

#### **C. MESABA SPECIFIC TRANSMISSION STUDIES**

The Excelsior Mesaba Project transmission study reports are both entered in the record<sup>17</sup> and are

<sup>14</sup> EE 1072, Sherner Rebuttal, p. 2, 3.

<sup>15</sup> EE 1072, Sherner Rebuttal, p. 7-8.

<sup>16</sup> EE \_\_\_\_\_, Interim Report, MISO Project A324, 1/4/07:

[http://oasis.midwestiso.org/documents/Miso/A324\\_Interim\\_Report-OASIS\\_Addendum1.pdf](http://oasis.midwestiso.org/documents/Miso/A324_Interim_Report-OASIS_Addendum1.pdf)

<sup>17</sup> Id, p. 2-3; see e.g., MCGP 5037, G477 Interconnection Feasibility Study March 10 2005; MCGP 5038, G519 System Impact Study 2nd Revision June 6 2006 and G519 Short Circuit Study July 27 2006; MCGP 5039, G519 Initial2post – Branch Violations.

available publicly.<sup>18</sup> In addition to the Excelsior initiated G477 and G519 (including Branch Violations chart) studies in the record, a new Xcel initiated MISO study<sup>19</sup> was released as Initial Briefs were submitted, together with results of G477 and G519 Deliverability studies and has also been entered.<sup>20</sup> As the MISO Generation Deliverability Study Method clarifies, the 1/5/07 deliverability result is but one part of the transmission interconnection study process, and is a supplement, to be added to those reports.<sup>21</sup>

As transmission studies reach various stages, the parties involved bring the results to the MAPP NM-SPG and report findings to this regional transmission planning group. Steve Sherner of Excelsior has made at least 4 such presentations.

Excelsior provided updates to the MN-SPG group, the MISO/MAPP group responsible for transmission planning and interconnection studies. On March 30, 2004, a generic introduction of the project was made to the group.<sup>22</sup> At that time, the “Key Study Parameters” were delivery of 750MW for Phase I and another 750MW for Phase II, to markets in the Twin Cities, Eastern Wisconsin, NW Ontario and NW Wisconsin, evaluating with and without the Arrowhead project (called “Duluth-Wausau” in presentation). Both 500kV and 345kV lines were considered, from Hoyt Lakes to Forbes and from there either south to the Metro or over Arrowhead to points east.<sup>23</sup> At that time, “major new transmission development will be necessary to deliver plant output.”<sup>24</sup>

#### 1. Excelsior Studies G477 and G519

The Excelsior update to the NM-SPG transmission planning group of October 26, 2004,

<sup>18</sup> Transmission Study Reports: [https://oasis.midwestiso.org/documents/miso/transmission\\_studies.html](https://oasis.midwestiso.org/documents/miso/transmission_studies.html); the SIS of 1/4/07 was posted 1/6/07, but the two deliverability studies are not posted.

<sup>19</sup> EE \_\_\_\_\_, Interim Report, MISO Project A324, 1/4/07:

[http://oasis.midwestiso.org/documents/Miso/A324\\_Interim\\_Report-OASIS\\_Addendum1.pdf](http://oasis.midwestiso.org/documents/Miso/A324_Interim_Report-OASIS_Addendum1.pdf)

<sup>20</sup> MCGP \_\_\_\_\_, **G477 Hoyt Lakes) Studies:**

G477 Feasibility in zip: [http://www.midwestmarket.org/publish/Document/469a41\\_10a26fa6c1e\\_-72b60a48324a](http://www.midwestmarket.org/publish/Document/469a41_10a26fa6c1e_-72b60a48324a)

G477 System Impact in zip: [http://www.midwestmarket.org/publish/Document/469a41\\_10a26fa6c1e\\_-72b80a48324a](http://www.midwestmarket.org/publish/Document/469a41_10a26fa6c1e_-72b80a48324a)

(including 1/6/07 Deliverability Update and 7/28/06 Short Circuit Update.

**MCGP \_\_\_\_\_, G519 (Taconite) Studies:**

G519 Studies in zip: [http://www.midwestmarket.org/publish/Document/7bc606\\_10b7aacd66e\\_-7ad90a48324a](http://www.midwestmarket.org/publish/Document/7bc606_10b7aacd66e_-7ad90a48324a)

<sup>21</sup> MCGP \_\_\_\_\_, MISO Generator Deliverability Study Method:

[http://www.midwestmarket.org/publish/Document/3c2d0\\_106c60936d4\\_-767f0a48324a/MISO\\_Generator\\_Deliverability\\_Draft\\_8-11-06.pdf?action=download&\\_property=Attachment](http://www.midwestmarket.org/publish/Document/3c2d0_106c60936d4_-767f0a48324a/MISO_Generator_Deliverability_Draft_8-11-06.pdf?action=download&_property=Attachment)

<sup>22</sup> MCGP 5041, Excelsior Sherner Presentation to NM-SPG 03-30-04.

<sup>23</sup> Id., slides 11-14.

<sup>24</sup> Id., slide 17.

presented at the same time that Mesaba at Hoyt Lakes joined the MISO queue, reveals seriously problematic “Key Study Findings” where:

- The studies showed that development of 345kV lines into and out of Arrowhead Substations causes the 230kV phase shifter installed to control the flows onto the Arrowhead-Weston 34kV line to become ineffective as the phase shifter is effectively by-passed.
- This issue has been brought to the attention of the project developers Minnesota Power and American Transmission Company and is being evaluated.
- Two new 345kV circuits from Forbes to Arrowhead and at least one new 345kV circuit from Arrowhead south to the Twin Cities will be necessary to deliver both units.

October 26, 2005 Shermer Presentation to NM-SPG.<sup>25</sup>

The MISO presentation on May 5, 2005, revealed further problems:

- **Project location is Cliffs-Erie property (old LTV mining site) north of Hoyt Lakes, MN**
- No fatal flaws or insurmountable problems with interconnection to Forbes 230kV bus
- Some transfer capability exists
  - **Could be as lower as 90MW (sic)**
  - Or over 300MW
- Have some confidence that sufficient facilities will be put in place to minimize the potential for unit output being constrained

This list of transmission interconnection and network system problems is only the beginning.<sup>26</sup> Shermer’s most recent report for the East site G477<sup>27</sup> noted:

- MISO Study Results
  - Project G477 SIS (Forbes POI)
    - Powerflow: No problems identified
    - Short Circuit: Several pre-existing over-dutied breakers but no new ones caused by G477
    - Stability: All simulations are stable and within damping criteria. No transient low voltage violations.
    - Deliverability Analysis: **Failed**
      - Awaiting MISO study proposal to continue NRIS process
      - TSR submitted by Xcel for NITS (local capacity resource)

And update on the West site G519<sup>28</sup> study:

- MISO Study Results
  - Project G519 SIS (Blackberry POI)

<sup>25</sup> MCGP 5041, slide 6, 9, Excelsior Shermer Presentation to NM-SPG 10-26-04.

<sup>26</sup> MCGP 5043, slide 2, 4, 8, Shermer Excelsior Energy Presentation NM-SPG, May 5, 2005 (**emphasis added**).

<sup>27</sup> MCGP 5044, Slides 8-9, Excelsior Shermer Presentation to NM-SPG, 08-16-06

<sup>28</sup> MCGP 5044, Slides 8-9, Excelsior Shermer Presentation to NM-SPG, 08-16-06.

- Powerflow: Some issues identified during contingencies. Resolved with the addition of a new Boswell-Riverton 230kV line
- Short Circuit: Several pre-existing over-dutied breakers [plus four new 115kV breakers at Nashwauk Sub due to G519]
- Stability: All simulations are stable and within damping criteria. No transient low voltage violations.
  - New Boswell-Riverton line was included in these studies
- Deliverability Analysis: **Failed**
  - Awaiting MISO study proposal to continue NRIS process
  - TSR submitted by Xcel for NITS (local capacity resource)

A problem with the G477 is that it is an “Energy Resource” request and states, as a premise, that “[t]he proposed use of the output of G477 is to displace other generation for Xcel Energy; for this study, the displaced generation was from the Blue Lake and High Bridge generating facilities.<sup>29</sup> The Mesaba Project is to be additional generation. By backing down generation elsewhere for the purposes of the study, the impact of the addition of generation is decidedly different.

The G519 study does not indicate the proposed use, as the G477 does, but it does note that generation must be backed down elsewhere for the Mesaba Project to be put on line, and this report specifies the following cuts in generation:

- Reduced generation in SW MN to approximately 825 MW and reduced load in the XEL area (zone 601) by a corresponding amount.
- Adjusted power flow to load NDEX to 2450 MW, MHEX to 2175 and MWSI to 1480 (A-W open)
- Adjusted Stinson Phase Shifting Transformer to 110 MW
- Flow on NDEX reduced to 2080MW by keeping output of Big Stone II in Northdakota
- Arrowhead Phase Shifting Transformer adjusted to reduce flow to 650MW

It is not known how Excelsior will address these problems and what the cost will be to Excelsior and to all other affected parties, such as the Big Stone owners, Minnesota Power, owner of the Arrowhead line, Manitoba Hydro for reduction of flow on MHEX, etc. These adjustments to accommodate interconnection are costly, and must be identified.

---

<sup>29</sup> MCGP 5037, G477, p. v, 1-2, 2-3.

## 2. Xcel System Impact Study A324

Xcel's NITS Transmission Service requests resulted in System Impact Study A324, for transmission requests for firm long term network transmission service for 450MW and 153MW, #7642398 and #7642399, released on January 4, 2006.<sup>30</sup> This study had pages of network system upgrades that must be made prior to interconnection, and denied interconnection:

The request for 603MW for firm transmission service cannot be granted at this time. Constraints are listed in Tables 201 through 2014. All constraints must be mitigated before service can be granted.<sup>31</sup>

This report is 17 pages long and has detailed findings, listing different violations to be corrected, but in detail consistent with and more expansive than the preliminary report of Branch Violations released previously.<sup>32</sup>

The following day, the most recent Excelsior Deliverability Studies were released. They are important because both the G477 and G519 studies now state that Mesaba output is deliverable.<sup>33</sup> However, these "studies" are just two pages, with an identical set of two boilerplate pages attached to both the 600MW and 531MW results. These results, though appearing positive, are a supplement, just one part of the full interconnection study process, and not determinative.<sup>34</sup> These results address one part, and even if sufficient to certify deliverability, these reports do not address the other sections of G477 and G519 that set out transmission network interconnection issues and system upgrades that must be made.<sup>35</sup>

## 3. Excelsior transmission plan is lacking

As noted by Shiro, there are major parts of a transmission plan missing, fundamental pieces that are contained in every transmission proceeding before the Commission. At this late date, we still do not

<sup>30</sup> EE \_\_\_\_\_, Interim Report, MISO Project A324, 1/4/07:  
[http://oasis.midwestiso.org/documents/Miso/A324\\_Interim\\_Report-OASIS\\_Addendum1.pdf](http://oasis.midwestiso.org/documents/Miso/A324_Interim_Report-OASIS_Addendum1.pdf)

<sup>31</sup> Id., p. 4, 12.

<sup>32</sup> MCGP 5039, G519 Initial2post – Branch Violations

<sup>33</sup> See MCGP \_\_\_\_\_ G477 and G519 Deliverability reports, 1/5/07.

<sup>34</sup> MCGP \_\_\_\_\_, MISO Generator Deliverability Study Method:

[http://www.midwestmarket.org/publish/Document/3e2d0\\_106c60936d4\\_-\\_767f0a48324a/MISO\\_Generator\\_Deliverability\\_Draft\\_8-11-06.pdf?action=download&\\_property=Attachment](http://www.midwestmarket.org/publish/Document/3e2d0_106c60936d4_-_767f0a48324a/MISO_Generator_Deliverability_Draft_8-11-06.pdf?action=download&_property=Attachment)

<sup>35</sup> MCGP 5037, G477 Interconnection Feasibility Study March 10 2005; MCGP 5038, G519 System Impact Study 2nd Revision June 6 2006 and G519 Short Circuit Study July 27 2006; MCGP 5039, G519 Initial2post – Branch Violations.

have sufficient information to determine just what upgrades must be made and the cost, which, in the case of A 324, would be hundreds of millions. Specifically, we do not know:

- The expected transmission line and substation additions and upgrades including facility ratings and configurations;
- The actions needed to implement required transmission upgrades, considering the various applicable regulator and environmental requirements;
- Schedule requirements (lead times and sequencing information) for implementation of the transmission additions and upgrades;
- Cost estimates for each component of work.

XE 2027, Shiro Surrebuttal, p. 3.

The MISO study noted that the cost estimate for transmission upgrades was nominally a good faith estimate, but it is far short of even Excelsior's estimate for the West site:

Generator Interconnection:	\$ 82,800,000
Network upgrades	<u>\$295,000,000</u>
	\$380,800,000

EE 1020, Excelsior's PPA Petition, Project Description, Section IV, p. 89-90. And because the components comprising these estimates are not disclosed, it's impossible to determine whether this is a reasonable estimate. Other transmission proceedings require specific breakdowns, such as that found in the Arrowhead transmission proceeding. The Arrowhead-Weston project remains a reasonable guide because of the similar geographic and physical situation, utilizing primarily existing right of way, with significant forest and wetlands and granite. That 220 mile line was estimated at \$314,441,178, or \$1.5 million per mile.<sup>36</sup> Another estimate in the same proceeding, by Black & Veatch, was \$1,652,296 per mile excluding substations. The Mesaba estimates should be higher than these, given the time frame.

The cost analysis of this case has a broader reach than a typical "least cost" analysis, and specifically is to include the costs of transmission and ancillary services. Excelsior has not met its burden of proof. That level information necessary has not been provided here, only the most basic of information that is impossible to evaluate, and the record is grossly incomplete, leaving too many questions and an insufficient basis on which to grant the Petition.

---

<sup>36</sup> MCGP 5062, p. ES-3, R.W. Beck Final Report, Independent Cost Review of the Arrowhead-Weston Project, #RPA-PSID-160, July 2003.

IV. CONCLUSION

The Commission should deny Excelsior's Petition because the Mesaba Project is not nor ever will be a least-cost source of electricity, and it is not in the public interest. Excelsior has not met its burden of proof. The Commission was legislatively charged to review the Mesaba Project with specific criteria, and where Mesaba fails to measure up, denial of this Petition is within the Commission's statutory authority.

January 19, 2007



Carol A. Overland #254617  
Attorney for MCGP  
OVERLAND LAW OFFICE  
P.O. Box 176  
Red Wing, MN 55066  
(612) 227-8638  
[overland@redwing.net](mailto:overland@redwing.net)