MPUC Docket No. E-6472-/M-05-1993
OAH Docket No. 12-2500-17260-2

BEFORE THE
MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS
100 Washington Square, Suite 1700
Minneapolis, Minnesota 55401-2138

FOR THE
MINNESOTA PUBLIC UTILITIES COMMISSION
127 7th Place East, Suite 350
St. Paul, Minnesota 55101-2147

In the Matter of the Petition of Excelsior Energy Inc. and Its Wholly-Owned Subsidiary MEP-I, LLC For Approval of Terms and Conditions For The Sale of Power From Its Innovative Energy Project Using Clean Energy Technology Under Minn. Stat. § 216B.1694 and a Determination That the Clean Energy Technology Is Or Is Likely To Be a Least-Cost Alternative Under Minn. Stat. § 216B.1693

SUPPLEMENTAL TESTIMONY AND EXHIBITS OF

EXCELSIOR ENERGY INC.

STEPHEN D. SHERNER

JUNE 19, 2006

EXCELSIOR ENERGY, INC.

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

PREPARED SUPPLEMENTAL TESTIMONY OF

STEPHEN D. SHERNER

Q Please state your name, current employment position and business address.

A Stephen D. Sherner. I am the Principal of Sherner Power Consulting, LLC. I have been working with Excelsior Energy, Inc. ("Excelsior") for the nearly three years in connection with evaluating transmission infrastructure needs associated with the delivery of energy from the Mesaba Energy Project Units One and Two to the Xcel Energy (NSP) control area for ultimate delivery to retail customers. As part of my responsibilities, I have worked directly with Excelsior, the Midwest Independent Transmission System Operator, Inc. ("MISO") and affected transmission owners related to the interconnection of the Mesaba Energy Unit One to the bulk transmission system.

My business address is Sherner Power Consulting, LLC, 6890 Fitch Avenue, Lake Nebagamon, Wisconsin 54849. My resume is attached as Exhibit SDS-1 to this testimony.

Q Would you please describe your educational and professional background

A I have served in many senior executive roles in the power industry and was most recently the president of the Minnesota Power unit responsible for unregulated power development and marketing. I have more than three decades of experience in power generation, transmission, systems planning and operation and business development, and was integrally involved in the formation of the Mid-Continent Area Power Pool ("MAPP") and MAIN reliability organization and the merger of MAPP and MISO.

I hold an Associates Degree in Applied Science from Alfred Agricultural and Technical College and a Bachelor in Engineering Technology from the Rochester Institute in Technology. I have also completed the University of Michigan's Utility Executive Program, EEI's Senior Middle Management Program, and the University of Minnesota's Executive Program. I am a registered Professional Engineer in the State of Wisconsin.

Q On whose behalf are you testifying?

A I am testifying on behalf of Excelsior Energy Inc.

Scope and Summary

Q What is the scope of your testimony in this proceeding?

A The primary purpose of my testimony is to incorporate a single Subsection of Section IV of Excelsior's original Petition that was filed on December 27, 2005 in this docket. In particular, I am incorporating by reference Subsection I "Transmission Infrastructure Requirements" of Section IV into my testimony.

During the preparation of the original Petition filed in this matter, I worked closely with Excelsior in reviewing and preparing this Subsection and I am available to answer any questions related thereto. The referenced Subsection is included in the original Petition, which is appended as Exhibit TLO-2 to the Supplemental Testimony of Thomas L. Osteraas.

Q Are there any parts of Subsection I that you would like to supplement or clarify at this time?

A Yes. Since Excelsior filed its original Petition in December 2005, Excelsior's request to interconnect the Mesaba Energy Project Unit One to the bulk transmission system has moved further along in the MISO interconnection process. As a result, the

parts of Subsection I related to the "Status of Mesaba Energy Project Unit 1 Interconnection Requests" and the "Transmission Development Plan" need to be updated. Simply, we know more now than we did then.

Finally, since the filing of Excelsior's Petition, the Federal Energy Regulatory Commission ("FERC") has accepted revisions to Attachment X to MISO's Open Access Transmission and Energy Markets Tariff ("MISO Tariff") relating to the allocation of costs associated with generator interconnections. As such, it is necessary to incorporate FERC's determinations into the transmission discussion set forth in Subsection I.

The MISO Interconnection Process

Q Briefly describe the MISO interconnection process?

A Each generating resource greater than 20 MW seeking to interconnect with the bulk transmission system within the MISO footprint (whether being developed by an independent power producer or an investor owned utility) is required to adhere to the MISO Large Generator Interconnection Procedures ("LGIP"). These procedures are approved by, and on file with, FERC. The LGIP provide step-by-step procedures for completing necessary studies and establish the framework for negotiations leading to the execution of a Large Generator Interconnection Agreement ("LGIA"), which is a pro forma agreement approved by FERC.

Because Excelsior is proposing to interconnect an electric generation facility greater than 20 MW, it must adhere to the MISO interconnection process.

Q Has Excelsior submitted a request to interconnect the Mesaba Energy Project Unit One to the transmission system?

A Yes. In fact, Excelsior has submitted two separate interconnection requests with MISO associated with the Mesaba Energy Project Unit One. In October of 2004, Excelsior submitted a Large Generator Interconnection Request for the Mesaba Unit One requesting Network Resource Interconnection Service ("NRIS") with Minnesota Power's control area from the proposed East Range site with the designated point of interconnection (POI) proposed at Minnesota Power's Forbes 230kV Substation. MISO designated this request as Project G477 and assigned a Queue number of 38280-01.

Excelsior submitted a second request for NRIS in May 2005 for Mesaba Unit One for the West Range site with the proposed point of interconnection at Minnesota Power's Blackberry 230kV Substation. MISO designated this as Project G519 and assigned a Queue number of 38491-01.

The interconnection process has several different components, but primarily consists of three separate studies undertaken by MISO and the applicable transmission owner(s): Feasibility Study, System Impact Study and Facilities Study. Each of these studies is described in Subsection I and no further discussion is necessary here.

Q. What is the current status of the Mesaba Energy Project Unit One pending interconnection requests?

A At the time Excelsior filed its Petition in December 2005, Excelsior noted that both interconnection requests for Mesaba Unit One were in the System Impact Study phase under MISO's LGIP. Excelsior noted that it expected to receive the System Impact Study reports in first quarter of 2006.

In April and May 2006, respectively, Excelsior received the results of the MISO's System Impact Studies for the East and West Range Sites. The SIS reports provided a preliminary list of transmission facilities that are required as a result of the interconnection request and provided a good faith estimate of costs for the Network Upgrades associated with the Blackberry POI in its System Impact Study.

Q Excelsior's Petition notes that a deliverability analysis would be undertaken as part of the MISO System Impact Studies. Has MISO performed such analyses and reached any conclusions?

A Yes. Like other existing and proposed resources within the MISO footprint, to be designated as a Network Resource, Mesaba Unit One must pass a Deliverability Analysis across the entire MISO footprint. In order to pass, a resource located in Minnesota, for instance, must be able to deliver power to load in Indiana (or anywhere within MISO). As one can imagine, in order to pass such a test, the transmission system may require Network Upgrades locally and/or remotely within the MISO members' transmission systems to maintain necessary levels of system reliability. MISO informed Excelsior that the Mesaba Unit One did not pass the Deliverability Analysis. This was not unexpected since many of the higher queued generation projects in the MAPP region (which includes Minnesota), including the Big Stone II Project, have also failed this test.

Q. Is the failure to pass the deliverability test fatal to the Mesaba Energy Project Unit One being designated as a Network Resource by Xcel?

A. Not at all. While MISO is currently struggling with how to administer and evaluate the results of the Deliverability Analysis, Excelsior is currently evaluating its options and may seek designation from MISO as a local capacity resource. Designation

as a local capacity resource would allow Mesaba Unit One to be treated as a Network Resource for firm power delivery to the Xcel Energy control area, but not to the broader MISO region. Under such circumstances, Mesaba Unit One could contribute to Xcel's firm reserves for resource adequacy purposes under Module E of MISO's Tariff, but not for other Network Customers. Because Excelsior proposes to sell the entire output of the project (energy and capacity) to Xcel under a long-term Power Purchase Agreement, it is not necessary for the Facility to be designated as a resource for other Network Customers (*i.e.*, load serving entities). A local capacity resource designation could have the advantage of ensuring that remote transmission upgrades that are unnecessary to enable the reliable delivery of power to Xcel are not required.

Q. How does a resource become designated as a local capacity resource?

While MISO's rules remain in flux, designation as a local capacity resource is initiated by a specific request on the MISO open-access same-time information system ("OASIS") for firm transmission service from Mesaba Unit One to the Xcel control area. Excelsior is currently working with MISO on issues related to this designation.

It should also be noted that there are cost implications depending on whether the Network Customer or the project developer, Excelsior Energy in this case, makes the request. If Xcel makes the required transmission service request for Network Service and it is studied and approved by MISO, there is no additional transmission charge. Conversely, if Excelsior makes the transmission service request (as a non-load serving entity), it would be required to request Firm Point-to-Point Transmission Service for a specific amount of capacity, and if studied and approved by MISO, there would be an additional transmission service charge (TSC). The magnitude of that charge is

currently being examined. Under the MISO tariff, the revenue from the TSC goes to the receiving control area.

Since Xcel would be receiving control area for the power, it likewise, would receive the TSC revenues. Based upon this, Excelsior Energy would have to pay the transmission service charge which would increase the purchased power costs, but the TSC revenue would go to Xcel so ultimately Xcel customers should be unharmed (neutral) by this TSC.

In either case, obtaining firm transmission would allow MISO to designate Mesaba Unit One as a local capacity resource. The PPA filed with the Petition requires that Xcel submit the relevant request for transmission service with MISO in the event designation as a local capacity resource is sought by Excelsior because it would allow Xcel greater flexibility in the use of Mesaba Unit One and the associated transmission service within its resource portfolio, thereby, saving Minnesota ratepayers monies.

Q. What is the next step in the interconnection process?

A The next step is the completion of the Interconnection Facilities Studies, which will result an engineering plan that includes equipment definition and estimated construction cost and schedule for required facilities needed to interconnect the Mesaba Energy Project Unit One to the transmission system as an Energy Resource. The study report will provide solutions for all the relevant issues identified in the System Impact Study. As the interconnecting transmission owner, Minnesota Power has agreed to undertake this analysis pursuant to MISO's Tariff.

Simultaneous to the start of the Interconnection Facilities Study, negotiations begin on the appendices for the LGIA, which provide the details unique to the specific generator's interconnection to the system, *i.e.*, construction schedule, identification of

upgrades etc. The development of the LGIA and its appendices is where the final agreement negotiated between Excelsior (the Interconnection Customer), the affected Transmission Owners and MISO for the Interconnection Facilities and Network Upgrades is documented.

Transmission Cost Estimates

Q Did any of the results of the System Impact Studies provided by MISO come as a surprise to you?

A No. However, I confess that the process has taken longer than I expected. The System Impact Studies received from MISO largely confirmed Excelsior's understanding of the transmission infrastructure (and associated costs) necessary to deliver power to Xcel's load. As Excelsior noted in its Petition, a tremendous amount of work has gone into analyzing transmission issues associated with the Mesaba Energy Project since 2003. Indeed, transmission costs factored into Excelsior's decision to choose the West Range site as the preferred location for Mesaba Unit One.

Q Did the System Impact Studies provide Excelsior with any additional information related to the Generator Interconnection Facilities and Network Upgrades that would need to be constructed to deliver power to Xcel from the Mesaba Energy Plant?

A. For the West Range site, the studies confirmed Excelsior's earlier study results and indicate the need for some network upgrades beyond the Blackberry POI to allow the generator interconnection and injection of the full 600MW Mesaba Unit One output. A new 73 mile 230kV line from Boswell Generating Station to the Riverton Substation along with the replacement of four potentially overdutied 115kV circuit breakers at the Nashwauk Substation resolve all adverse impacts for Energy Resource Interconnection

Service (ERIS). The good faith estimate for these upgrades is $53 million, which is less than the $75 million Excelsior had estimated in the December filing. The costs are less because the MISO studies found that the Grand Rapid-Hill City-Riverton 115kV line could be replaced by the new 230kV line rather than having to build 230/115kV double circuit structures along the right-of-way corridor as had been earlier assumed.

For the East Range site, the MISO studies indicate no adverse impacts requiring network upgrading to resolve for ERIS. While Excelsior had included cost estimates for network upgrades for this site in the December filing, these network upgrades were assumed necessary for satisfying the Deliverability Analysis (DA) for Network Resource Interconnection Service (NRIS). Although Excelsior has been informed that Mesaba Unit One failed the DA, we have not yet seen the results and been able to evaluate the adverse impacts and what might be done to resolve them.

Q Have the "Capital Cost Estimates of Generator Outlet Facilities" set forth in Table 15 of Subsection I changed as a result of the System Impact Studies?

A The MISO studies did not cause any changes, however, Excelsior's own engineering design efforts, system studies and economic analysis of various generator outlet (GO) facilities development concepts for Mesaba Unit One and Two have resulted in some changes.

For the West Range site, the preferred GO facilities plan is to construct two 9 mile 345kV circuits on double circuit steel pole structures from the site to Blackberry POI but operate these circuits at 230kV for Mesaba Unit One.

For the East Range, the preferred GO facilities plan is to also construct two 345kV circuits approximately 35 miles from the site to the Forbes POI. These would be routed primarily along existing 115kV line ROWs by replacing the existing structures

with double circuit 345/115kV steel pole structures. Again for Mesaba Unit One operation, the 345kV circuits would be operated at 230kV.

The following is the revised table illustrating the changes:

Revised Table 15. Capital Cost Estimates of Generator Outlet Facilities

Generator Outlet Capital Estimates (OSBL) ($millions)

	Mesaba One	Mesaba Two	Total
East Range Site	$73	$31	$104
West Range Site	$17	$29	$46

The cost of the West Range GO facilities development is nearly the same for Mesaba Unit One but is over $20M less in total, mainly because of one less GO circuit having to be built and the elimination of the $10M "plug" for unknown equipment upgrades. The cost for the East Range site dropped $26M for Mesaba Unit One because the need for two 345/230kV large autotransformers is deferred until Phase II. The overall costs are down $12M mainly reflective of the elimination of the $10M "plug" for unknown equipment upgrades. Of course, these are estimates and are subject to change.

Q Have the "Key Measurements Associated with Generator Outlet Facilities" set forth in Table 16 of Subsection I changed as a result of the System Impact Studies or further Excelsior engineering efforts?

A Yes, as we previously noted, Table 16 was developed to enable a comparison of some key measures associated with the GO facilities development for each site. Since the filing of the Petition, some changes are necessary to reflect the preferred GO facilities plans. The following is a revised table that illustrates the changes:

Table 16. Key Measurements Associated with Generator Outlet Facilities

MEASURE	EAST RANGE SITE	WEST RANGE SITE
MESABA ONE	**D/C 345kV Plan Operate 230kV in Ph I**	**D/C 345/115kV Plan Operate 230kV in Ph I**
Circuit miles	68.3	17.4
ROW miles	68.3	8.7
• New ROW miles	4	6.2
• Widened ROW miles	31.5	0
Land Use (acres)	166	134
Capital Expenditure ($M)	73	17
Losses (MW)	5.6	1.4
TOTAL FOR MESABA ONE AND TWO		
Circuit miles	68.3	17.4
ROW miles	68.3	8.7
• New ROW miles	4	6.2
• Widened ROW miles	31.5	0
Land Use (acres)	166	134
Capital Expenditure ($M)	104	46
Losses (MW)	11.5	3.4

Q Are there any changes to Table 17 "Capital Estimates of the Cost of Network Upgrades" at this time?

A Yes and no. Table 17 was an attempt to identify the Network Upgrade costs associated with both the generator interconnection and delivery of power to the Xcel control area (*i.e.,* Network Resource Interconnection Service). From the System Impact Studies we now know what Network Upgrades are necessary for Energy Resource Interconnection Service. As stated earlier these are $53 million for the West Range site and zero for the East Range site for Mesaba Unit One.

At this point, what we know are the transmission cost estimates associated with delivery of Mesaba Unit One output to the point of interconnection (GO facilities), and to obtain MISO designation as an Energy Resource. These are shown for both sites in the table that follows:

Site	GO Facilities Cost	Network Upgrade Costs	Total
East Range	$73M	$0	$73M
West Range	$17M	$53M	$70M

What we do not yet know is what Network Upgrades are necessary for either MISO Network Resource or local capacity resource (*i.e.*, firm transmission delivery to Xcel control area) designation.

The $75 million shown in the original Table 17 for Mesaba Unit One for the West Range site was in fact the cost estimate associated with the new Boswell-Riverton 230kV line (now $53 million) which the Excelsior studies showed eliminated the adverse impact of the generator interconnection and power injection AND also increased transfer capability (*i.e.*, improved deliverability) between the Minnesota Power and Xcel control areas. Further studies must be undertaken with MISO to determine what Network Upgrades are necessary for firm delivery of the Mesaba Unit One capacity to Xcel.

Q When do you expect the interconnection process to be completed?

A That's a good question and, unfortunately, is dictated largely by the speed at which MISO and the impacted transmission owners perform the necessary studies. As such, it is not known with any precision at this time when the process will be complete. The Facilities Studies for Energy Resource Service to both sites should be done in 3-4 months. Resolving the deliverability question could take significantly longer and until done I'm not sure the Large Generator Interconnection Agreement can be completed and filed with FERC.

MISO Tariff Changes

Q You previously noted that FERC issued an Order accepting MISO's Tariff regarding appropriate cost allocation associated with generator interconnections. Please explain?

A As Excelsior noted in its original Petition, on October 7, 2005, MISO filed with FERC proposed cost allocation provisions, which among other things, addressed costs associated with new Network Upgrades on the MISO transmission system in Docket No. ER06-18-000. Under MISO's proposal, 50% of the Network Upgrade costs associated with generator interconnection that are not determined to be Baseline Reliability Upgrades by MISO, would be borne solely by the interconnecting generator, without regard to the broader benefits the Network Upgrades provide to the transmission system generally. This was a change from a 0% allocation to the interconnecting generator.

MISO also proposed that the interconnecting generator would be required to pay 100% of the costs of generator interconnection projects, unless the interconnecting generator is able to demonstrate that prior to commercial operation (1) the Generating Facility has been designated as a Network Resource, or (2) has a contractual commitment with a Network Customer for a period of one year or more.

Q Has FERC acted on MISO's Tariff Proposal since the filing of the Petition in December 2005?

A Yes. On February 6, 2006, the Commission issued an Order accepting MISO's proposals on these two issues. *See Midwest Independent Transmission System Operator, Inc.*, 114 FERC ¶ 61,106 (2006). Under FERC's Order, the Tariff changes apply to any interconnection agreement filed after February 5, 2006.

Q Does FERC's Order accepting MISO's allocation of interconnection costs to the generator impact the economics of the Mesaba Energy Project?

A. Yes and no. First, the Order applies to any interconnecting generator in the MISO region, including Xcel, should it decide to interconnect a plant with a capacity of greater than 20 MW. While the costs have not changed, FERC has determined that costs associated with Network Upgrades to the transmission system will be allocated in a different manner.

While 50% of the costs will now be borne by the generator, from a practical standpoint, this simply means that 50% of the costs of a generator interconnection will be borne by a specific group of ratepayers (either as reflected in a PPA with an independent power developer or imbedded in retail rates in the case of a vertically integrated utility self-build), rather than the larger MISO market, which will now only bear 50% of the costs. In other words, 100% of the costs will no longer be socialized across the MISO footprint. Therefore, while Excelsior may have to bear more transmission infrastructure costs under the new rules, all things being equal, these costs are no different than the costs Xcel would incur if it built its own plant to serve its customers.

Q How does Excelsior account for the fact that under MISO's Tariff it could be allocated 50% of the costs of necessary Network Upgrades associated interconnecting to the bulk transmission system?

A. The short answer is that unrecovered amounts would be passed through the PPA. In this case, MISO has identified $53 million of Network Upgrades associated with the preferred West Range Site. Assuming, the $53 million estimate does not change, 50% of this amount would be recovered from Xcel's ratepayers through the

proposed PPA. As noted above, the cost of transmission is an inherent component of the cost of delivered power, which is unavoidable regardless of whether you're a vertically integrated utility like Xcel, or an independent power developer like Excelsior.

Q Does this conclude your prepared supplemental testimony?

A Yes.

EXHIBITS

EXHIBIT NO. ____ (SDS-1)

Resume

STEPHEN D. SHERNER Home: (715) 374-3286
6890 Fitch Avenue Mobile (218) 343-9159
Lake Nebagamon, WI 54849 E-Mail: ssherner@centurytel.net

SUMMARY

An executive with extensive experience in strategic planning, system planning, generation planning and business development, fuels planning, bulk power marketing, system operations and power pooling. Demonstrated negotiating skills and ability to develop strategic (win-win) alliances with key suppliers and customers. Proven proactive, change oriented leadership and team building skills.

PROFESSIONAL EXPERIENCE

SHERNER POWER CONSULTING, Lake Nebagamon WI 2002-Present

Principal

Established independent consulting business to provide high level management and technical advisory consultation in the areas of strategic planning and business development, power system planning and operations, generation and transmission project development, fuel planning, power marketing and contracting, and regional transmission operations/ pooling.

MINNESOTA POWER, Duluth MN 1973-2002(Retired)

President – Rainy River Energy and MP Enterprises 2000-2002
and Sr. Vice President – MP Electric

Responsible for leading unregulated power-sourcing development and related power-marketing activities. Leading company-wide strategic fuels planning activities. Key strategic planning role related to industry restructuring and emerging technologies.

- Lead efforts between MAPP and MAIN to create new reliability organization(RRO) and participated in MAPP/MISO merger discussions.
- Facilitated internal regional transmission organization(RTO) decision process.
- Developed distributed generation strategy and opportunities assessment.
- Developed strategy for natural gas supply for new generation positions.
- Developed rail build-out strategy to gain new concessionary contract from rail provider
- Negotiated several long term power sales “off take” contracts for new projects
- Developed 160MW natural gas fired peaking project and necessary approvals to build.

Sr. Vice President – Energy Sourcing and 1998-2000
President – Rainy River Energy and MP Enterprises

Provided leadership for all aspects of energy sourcing, fuels and business units. That includes generation operations and development, fuels and coal mining, power marketing and power pooling. Responsible for over 500 employees and operating and construction budgets exceeding $250 million. Served in both oversight (BOD) and leadership (officer) roles for MP Electric unregulated subsidiaries.

Sr. Vice President – Energy Sourcing and **(continued)**
President – Rainy River Energy and MP Enterprises

- MPEX continued to implement growth plan with expansion to new Minneapolis offices and exceeded margin goals.
- New 20-year PPA for 225-325MW implemented as part of Square Butte Project refinancing
- Agreements reached for coal supply portfolio through 2003
- Unregulated subsidiary, RREC, committed to long-term PPA for 275MW of output of new combined cycle plant near Chicago
- Restarted two mothballed wood/coal fired generators for summer peaking use
- Generation achieved near record production and availability
- RREC developed and announced plan for new 90MW peaking project

Sr. Vice President - Strategy & Growth/President MP Enterprises **1997-1998**

Provided leadership in the identification, assessment and implementation of strategic growth initiatives for MP Electric. Provides liaison and coordinating services between departments and MP Electric leadership group to assure integration of strategies and growth activities. Serves in both oversight (Board of Director) and leadership (Officer) roles for MP Electric unregulated subsidiaries.

- Successful launch of MP Telecom as regional wholesale telecommunication provider.
- Leading the development and facilitation of MP Electric's strategy process.
- Investigating an array of alliance, joint venture and partnering possibilities.

Vice President - Marketing & Customer Service **1995-1996**

Provided leadership over MP Electric's marketing and customer service and sales activities with revenues exceeding $400M annually. Responsible for establishing the vision and strategies to retain and expand the customer base for the coming competitive environment.

- Initiated independent assessment of relationship satisfaction of large industrial accounts, which led to the development of a new key account program with senior executive involvement.
- Participated in negotiation with MP Electric's largest industrial customers that resulted in several new long-term contracts with commitments over $500MM.
- Launched a new power marketing division (MPEX) which has become the regions most aggressive and fast growing, achieving a tripling of sales in 24 months.
- Launched new industrial energy management and retail marketing initiatives.
- Implemented a new "pool in pool" concept with self generating municipal and industrial customers that resulted numerous multi-year contract extensions.

Vice President - Power Marketing and Delivery **1994-1995**

Leadership for all aspects of transmission business unit; planning, engineering, construction, operation and maintenance. Responsible for transmission access and pricing decisions. Responsible for all bulk power, wholesale, and large industrial customer marketing. Responsible for 155 employees and an operating budget of over $100 million.

- Power Marketing customers represent 70% of the electric utility revenue.
- Negotiated new 10-year contract worth $142 million in revenue guarantees with National Steel Pellet Company to assist their plant reopening.
- Developed new standby and control area services contract with large industrial self-generator that provided company with over $2 million in annual revenues.
- Initiated preparation of generic transmission tariff filing including unbundled control area services.

Vice President - Power Sourcing and Delivery **1993-1994**

- Prepared and testified in recent rate case on large industrial customer rate design and contract issues, bulk power marketing activities, fuels planning and procurement activities, and future plans.
- Developed innovative fuel pricing partnership arrangements with coal and rail supplies for special off-system sales and competitive real time energy situations.
- Developed new interruptible service offering for large industrial customer. Negotiated required contract extension worth over $100 million in revenue guarantees.
- Obtained first FERC approvals for innovative capacity option agreement, and energy price risk sharing contract, and an energy price performance contract.
- Chaired pool committee that recently developed and filed a pool wide transmission service charge tariff with FERC.

Vice President - Strategic Resource Management **1991-1993**

- Established cross-functional strategic fuels planning activities to develop supply alternatives and procurement approaches.
- Negotiated coal contract buyout and renegotiated rail contracts resulting in a 25% reduction in delivery coal costs. Savings nearly $25 million annually.
- Established company integrated resource planning capabilities. Utilized stakeholder advisory group to provide guidance. First plan approved by Minnesota commission with minimal issues.

Vice President - System Operations & Planning **1988-1993**

- Negotiated and developed $82 million sale contract and associated O&M partnership agreements for equity sale of 20% interest in largest unit (535MW) to Wisconsin Public Power, Inc.
- Established strategic direction for company to become regional power marketer. Tripled revenue margins over three-year period.

MINNESOTA POWER (Continued)

Director of System Operations	**1982**
Director of Project Administration	**1980**
Manager of System Planning	**1978**
System Performance Engineer	**1976**
Assistant Transmission Planning Engineer	**1975**
Assistant Relay Engineer	**1973**

ROCHESTER GAS & ELECTRIC, Rochester, NY **1970-1973**
Intern Engineer

INDUSTRY AFFILIATIONS

Mid Continent Area Power Pool (MAPP)	
Management and Executive Committee	1991-2002
Transmission Service Charge Advisory Committee - Chairperson	1993-1995
Engineering Committee	1991
Operating Committee (Chairperson 1989)	1982-1990
MAPPCOR Board of Directors	1991-2002
NERC Operating Committee	1987-1988
EPRI Integrated Energy System Divisional Advisory Council	1992-1994
Lignite Energy Council Executive Committee	1990-1994
North Dakota Lignite Research Council Executive Committee	1991-1994

EDUCATION

Alfred Agricultural and Technical College - Associates in Applied Science	1970
Rochester Institute in Technology - Bachelor in Engineering Technology	1973
University of Michigan - Utility Executive Program	1981
EEI Senior Middle Management Program	1987
University of Minnesota - Executive Program	1990

REGISTERED PROFESSIONAL ENGINEER in Wisconsin (No. 20552)

REFERENCES

Available upon request.