

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.**

ROBERT S. EVANS II

JUNE 19, 2006

1 EXCELSIOR ENERGY, INC.

2 BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

3 PREPARED SUPPLEMENTAL TESTIMONY OF

4 ROBERT S. EVANS II

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

6 A Robert S. Evans II. I am the Vice President, Environmental Affairs for
7 Excelsior Energy Inc. (“Excelsior”). My business address is Excelsior Energy Inc.,
8 Crescent Ridge Corporate Center, 11100 Wayzata Boulevard, Suite 305, Minnetonka,
9 Minnesota 55305

10 **Q Would you please describe your educational and professional background?**

11 A I have 26 years of experience in environmental and regulatory activities,
12 primarily dealing with electric generation. Most recently, I led the environmental
13 affairs services team of an international independent power production company. In
14 addition, I supervised the environmental licensing processes for new and existing
15 generating plants, including a nominal 550 MW (net) dual-fuel fired peaking plant
16 located in Southern Minnesota. I have directed the work of professional
17 environmental staff, consultants, and legal counsel on matters relating to
18 environmental due diligence, permitting, regulatory negotiations, compliance
19 strategies, contractual conditions, and remedial actions. I hold a M.A. in chemistry
20 from Drake University in Des Moines, Iowa and a B.A. in Biology from Luther
21 College in Decorah, Iowa. My resume is attached as Exhibit RSE-1 to this testimony.

22 **Q On whose behalf are you testifying?**

23 A I am testifying on behalf of Excelsior Energy.

INTRODUCTION

Scope and Summary

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

A The purpose of my testimony is to incorporate several Subsections of Sections I and IV of Excelsior’s original Petition that was filed on December 27, 2005 in this docket. In particular, I am incorporating by reference the following Subsections of Sections I and IV into my testimony:

Section I

1. Subsection E: The Mesaba Project Will Achieve Significant Emission Reductions Compared To Other Solid Fuel Base Load Technologies.

Section IV

2. Subsection E: Project Discharges and Products.
3. Subsection M: Human Health benefits Associated With Operation of the Mesaba Energy Project.

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

Section I

Q Please briefly describe the information contained in Section I, Subsection E?

A Minn. Stat. § 216B.1694, the so-called Innovative Energy Project (“IEP”) Statute, directs the Commission to consider the Mesaba Energy Project’s emission

1 reductions compared to other solid fuel base load technologies. In part, Section I,
2 Subsection E demonstrates that the overall air emissions profile characterizing the
3 Mesaba Energy Project is superior to that of any other conventional coal-fueled
4 electric generating unit in the nation.

5 **Q What is the basis for your conclusion that the Mesaba Energy Project is superior**
6 **to that of any other conventional coal-fueled electric generating unit in the**
7 **nation?**

8 Excelsior undertook comparative analyses of the emissions profile of the
9 Mesaba Project with (1) those of recently permitted state-of-the-art supercritical
10 pulverized coal-fueled boiler (“SCPC”) plants; (2) the existing fleet of coal plants in
11 Minnesota; and (3) the lowest-emitting conventional coal-fueled power plants in the
12 nation. Comparisons are made for sulfur dioxide, nitrogen oxide, particulate matter,
13 volatile organic compounds, carbon monoxide, and mercury emissions. The analyses
14 are described in detail in Section I, Subsection E of the Petition.

15 **Q Briefly describe the conclusions that were reached with respect to the**
16 **comparative analyses of the emissions profile of the Mesaba Project?**

17 A The principal conclusion is the air emissions profile characterizing the Mesaba
18 Project is superior to that of any other utility-scale conventional coal-fueled electric
19 generating unit in the nation. For instance, the Mesaba Project’s sulfur dioxide
20 emissions are 75-85% less than the permitted rates for recently permitted SCPC
21 facilities. NOX emissions from the Mesaba Project are lower than the emissions rates
22 of the SCPC plants by approximately 15%. The Mesaba Project’s volatile organic
23 compounds (VOCs) emission rate is comparable to two of the comparison units, but
24 about 80 percent less than one of the comparison units. Compared to the most

1 recently permitted SCPC facilities, carbon monoxide (CO) emission rates for the
2 Mesaba Project would be reduced by 70-80%. Particulate matter emissions from the
3 Mesaba Project are 30-60% less than those from the SCPC comparison plants. The
4 differences between the permitted emission rates for these SCPC plants and the rates
5 noted for the Mesaba Project are striking and call attention to the potential
6 environmental benefits that can be delivered to Minnesota and the nation from use of
7 IGCC technology.

8 The second category of comparison plants are the existing fleet of Minnesota
9 coal plants. Compared to Sherco, the resource exhibiting the lowest SO₂ emission
10 rates in 2003, the Mesaba Project's emissions are about 93% less. Moreover, Nitrogen
11 oxides are emitted from Minnesota's existing coal-fired electric generating units at
12 rates six to fifteen times that of Mesaba. Because NO_x, in addition to SO₂, is a
13 precursor of fine particulate matter, these emissions also add significantly to the fine
14 particulate matter burden in the State. With respect to particulate matter, no
15 comparisons with other Minnesota sources are available. However, the existing
16 Minnesota coal plants, with their relatively high emissions of sulfur dioxide and
17 nitrogen oxides can be expected to be the source of increased ambient fine particulate
18 matter (*i.e.*, PM_{2.5}) relative to the Mesaba Project. Finally, the rate at which mercury
19 will be emitted from the Mesaba Project will be reduced from about 74% (versus the
20 Allen S. King Station, prior to its refurbishment under Xcel Energy Inc.'s Metro
21 Emission Reduction Program or "MERP") to 91% (versus Sherco) relative to the rates
22 of existing facilities in 2004 (the most recent date that data under the Toxic Release
23 Inventory were available). Even after the MERP retrofit at the King Plant, the Mesaba
24 Project's mercury emission rate will be less than 50% of the expected rate from King.

1 Finally, even when compared to the cleanest existing utility-scale coal-fueled
2 power plants in the nation, the Mesaba Project achieves substantially better across-
3 the-board emission results. The comparisons set forth in Subsection E illustrate that
4 whenever a combustion facility achieves emission parity with IGCC for one pollutant,
5 that same facility has significantly, and often, dramatically higher emissions of other
6 pollutants than does IGCC. The fact that the Mesaba Project's emissions of each
7 category of pollutant are essentially equal to or lower than domestic plants permitted
8 over the past ten years and having the most stringent permitted limits in the nation for
9 a given category of pollutant underscores IGCC's superior environmental profile.

10 Section IV

11 **Q Please briefly describe the information contained in Section IV, Subsection E,**
12 **Project Discharges and Products?**

13 A This Subsection discusses the primary discharges and emissions resulting from
14 the gasification process at the Mesaba Energy Facility as designed and engineered. In
15 particular, a discussion of the resulting air pollutants, criteria pollutants, and water
16 effluents is set forth in this Subsection. Emission levels for criteria pollutants (sulfur
17 dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds and
18 particulate matter), and mercury are expected to be equal to or below those now
19 considered to represent the lowest emission rates for utility-scale, coal-based
20 generation fueled by similar feedstocks. In addition, carbon dioxide emissions are
21 expected to be 15 to 20% lower than the current average for U.S. coal-based power
22 plants fueled by similar feedstocks, due to the higher efficiency of the IGCC process.

1 **Q Please briefly describe the information contained in Section IV, Subsection M,**
2 **Human Health benefits Associated With Operation of the Mesaba Energy**
3 **Project?**

4 A. This Subsection demonstrates that because of its relatively low emissions of
5 sulfur dioxide, nitrogen oxides, particulate matter, and mercury, IGCC technology can
6 provide substantive health-related and environmental benefits relative to a comparably
7 sized, well controlled conventional coal-fueled plant located in central Minnesota.
8 The reduced emissions of SO₂ and NO_x from the Mesaba Project result in lowered
9 mortality (deaths) and morbidity (acute and/or chronic sickness) associated with
10 exposures to fine particulate matter (*i.e.*, particulate matter having an aerodynamic
11 diameter less than or equal to 2.5 microns, or PM_{2.5}) emitted and/or formed
12 downwind from the plume of the comparison conventional coal-fueled power plant
13 located in central Minnesota. Additional health-related and environmental benefits are
14 expected from reductions in mercury emissions.

15 The results presented in this Subsection are taken from a study commissioned
16 by Excelsior earlier in 2005 by ICF Consulting, the consulting firm that provides
17 modeling services to the U.S. Environmental Protection Agency. ICF provided a
18 detailed analysis of the comparative expected human health impacts between a new
19 state-of-the-art SCPC plant located in Central Minnesota and the Mesaba Project. The
20 full ICF Health Benefits Report is attached as Exhibit D to Excelsior's Petition, and is
21 being supported by the Supplemental Testimony of Baxter Jones.

22 I was the person responsible for providing ICF the final stack parameters used
23 to characterize the Mesaba Project and the comparison SCPC plant.

1 **Q** **Are there any parts of these Subsections that you would like to supplement or**
2 **clarify at this time?**

3 **A** Not at this time.

4 **Q** **Does this conclude your prepared supplemental testimony?**

5 **A** Yes.

EXHIBITS

EXHIBIT NO. ____ (RSE-1)

Robert S. Evans II

Career History

Excelsior Energy Inc., (May 2004 – Present)

Wayzata, MN

Vice President, Environmental Affairs, Responsible for licensing, permitting and environmental compliance activities/strategies associated with projects under development and extending through financial close.

NRG Energy, Inc.,

Worldwide Operations (May 1992 – May 2004)

Minneapolis, MN

Corporate Director Environmental Services, Created environmental department, mission and vision for major international independent power company. Designed and principal author of corporate environmental policies and procedures instituted to achieve said mission/vision. Responsible for Worldwide Operations' environmental compliance programs. Created and implemented Environmental Performance Assessment System and implemented it on NRG intranet site. Directed efforts to establish and implement Key Performance Indicator metric providing assessment of NRG's domestic operations. Created & implemented Environmental Information Management System as stand-alone and then web-based system for tracking compliance activities. Instituted effective auditing program to verify domestic and European facilities' multimedia compliance. Responsible for assuring worldwide power plant acquisitions based on sound environmental decision-making. Directed activities of seven professional staff and responsible for oversight of 21 professional staff worldwide.

North Star Steel Company (March 1989 April 1992)

Minnetonka, MN

Environmental Affairs Manager, Developed, instituted, and implemented organizational plan to achieve and manage environmental compliance at 14 corporate facilities located in eight states (MN, MI, IA, OH, KY, TX, PA, & LA). Reported to president of company and supervised three regional managers.

Northern States Power Company

Environmental & Regulatory Affairs Department (January 1980 – March 1989)

Minneapolis, MN

Supervisor Air Programs, Provided technical assistance within Environmental & Regulatory Affairs Department and to operating facilities. Analyzed on routine basis implications/impacts of regulatory/legislative proposals on corporate assets. Participated in all facets of regulatory process at state and federal level: legislative, rulemaking, administrative hearings and legal intervention. Specified, implemented and successfully operated air/stack monitoring programs/studies for both criteria and non-criteria pollutants. Prepared QA/QC Manual guiding all aspects of ambient air quality monitoring program. Testified on environmental impacts of major, Midwestern coal-fired power plant during licensing/permitting processes and on atmospheric transport, transformation and deposition during acid rain hearings.

Gulf Oil

Biochemical Technology Section (October 1978 – September 1979)

Merriam, Ks

Research Technician, Analyzed potential feedstocks for cellulose, lignin and plastic content as part of research project to demonstrate commercial enzymatic conversion of cellulose to ethanol. Independently developed internal testing methodology for determining total thermoplastic content of municipal solid waste.

Natural Dynamics (September 1975 – July 1978)

Des Moines, IA

Research Assistant, Set up series of lab-scale anaerobic digestion systems to demonstrate fast methane production. Modified commercial equipment to suit research demands. Successfully operated systems over extended time period and characterized them through the conduct of comprehensive analytical tests.

Education

Luther College, Decorah, Iowa (1968 – 1972)

Bachelor of Arts, Biology (1972)

Drake University, Des Moines, Iowa (1973 – 1975)

Master of Arts, Chemistry (1975)