



## BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

### COMMENTS AND RECOMMENDATIONS OF THE MINNESOTA DEPARTMENT OF COMMERCE ENERGY FACILITY PERMITTING STAFF

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**In the Matter of** Excelsior Energy's Site Permit for the Mesaba Energy Project in Itasca county.

**Issues Addressed:** These Energy Facility Permitting (EFP) staff's comments address Excelsior Energy's request that the Commission confirm the validity of the existing permits and environmental review relative to the recently enacted Minnesota Statutes 216B.1694, Subd. 3.

### Introduction and Background

On March 12, 2010, the Minnesota Public Utilities Commission (Commission) issued a large electric power generating plant (LEPGP) site permit to Excelsior Energy to construct the Mesaba Energy Project in Itasca county.<sup>1</sup>

On May 31, 2012, the Commission received a letter from Excelsior Energy requesting that the Commission confirms, pursuant to Minnesota Statutes 216B.1694, subdivision 3, that the LEPGP Site Permit issued on March 12, 2010, for the Mesaba Energy Project is valid for a natural gas-fired plant located at the same site and that no additional environmental review is required.<sup>2</sup>

The approved LEPGP Site Permit authorized Excelsior Energy to construct and operate a fuel-flexible Integrated Gasification Combined Cycle (IGCC) power plant. The permitted power plant is to be constructed in two phases; each phase capable of producing approximately 600 MW (net) of baseload power.

<sup>1</sup> Minnesota Public Utilities Commission Order, March 12, 2010, eDocket ID: [20103-47959-01](#)

<sup>2</sup> Excelsior Energy *Request for Confirmation of Site Permit*, May 31, 2012. eDocket Document ID: [20125-75185-01](#)

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The site selected through the power plant siting process, referred to as the West Range site (approximately 1,727 acres), is located in the city of Taconite in Itasca County, Minnesota.

In the IGCC process designed for this project, coal, petroleum coke, or blends of coal and petroleum coke are crushed, slurried with water, and pumped into a pressurized vessel (the gasifier) along with purified amounts of oxygen. In the gasifier, controlled reactions take place, thermally converting feedstock materials into a gaseous fuel known as synthetic gas, or syngas. The syngas is cooled, cleaned of contaminants, and then combusted in a combustion turbine (CT), which is directly connected to an electric generator. The assembly of the CT and generator is known as a combustion turbine generator (CTG). The expansion of hot combustion gases inside the CT creates rotational energy that spins the generator and produces electricity. The hot exhaust gases exiting the CTG pass through a heat recovery steam generator (HRSG), a type of boiler, where steam is produced. The resulting steam is piped to a steam turbine that is connected to an electric generator. The expansion of steam inside the steam turbine spins the generator to produce an additional amount of electricity. When a CTG and a steam turbine generator (STG) are operated in tandem at one location to produce electricity, the combination of equipment is referred to as a combined cycle electric power plant. Combining the gasification process with the combined cycle design is known as integrated gasification combined cycle (IGCC).

Excelsior Energy now intends to develop only the combined-cycle power block portion of the project, eliminating the syngas production portions (i.e., gasification island, air separation unit, coal/pet-coke feedstock handling and storage, Syngas treating unit, sulfur recovery and tail gas recycle units, etc.) of the project and operating the facility as a natural gas-fueled combined-cycle (NGCC) plant.

## **Regulatory Process and Procedures**

Recently the Minnesota legislature enacted Minnesota Statutes 216B.1694, subdivision 3, which provides for the construction of a natural gas-fired plant located at the site designated by the Commission for the Mesaba Energy Project and confers the rights and approvals granted to the original IGCC design to the proposed NGCC facility. The legislation states:

### ***Subd. 3. Staging and permitting.***

*(a) A natural gas-fired plant that is located on one site designated as an innovative energy project site under subdivision 1, clause (3), is accorded the regulatory incentives granted to an innovative energy project under subdivision 2, clauses (1) to (3), and may exercise the authorities therein.*

*(b) Following issuance of a final state or federal environmental impact statement for an innovative energy project that was a subject of contested case proceedings before an administrative law judge:*

*(1) site and route permits and water appropriation approvals for an innovative energy project must also be deemed valid for a plant meeting the requirements of paragraph (a) and shall remain valid until the earlier of (i) four years from the date*

*the final required state or federal preconstruction permit is issued or (ii) June 30, 2019; and*

*(2) no air, water, or other permit issued by a state agency that is necessary for constructing an innovative energy project may be the subject of contested case hearings, notwithstanding Minnesota Rules, parts 7000.1750 to 7000.2200.*

Excelsior Energy revised and resubmitted their air permit application to the Minnesota Pollution Control Agency (MPCA) to reflected the proposed changes in the project; upon receipt of the revised application the MPCA stated that it would require assurances from the responsible governmental unit (RGU) that no further environmental review or revisions to the environmental impact statement were deemed necessary.

## **Permittee's Position**

Excelsior Energy maintains that under Minnesota Statutes 216B.1694, subdivision 3, it is clear that the site and route permits granted to the Mesaba Energy Project by the Commission are valid, and that no additional environmental review is required if a NGCC plant is constructed at the West Range site.

Relative to the air permit, Excelsior Energy further explains that each emission unit contained in the revised air permit application (two CTG/HRSG per phase, one auxiliary boiler per phase, the cooling towers, and the emergency diesel engines/fire pumps) was part of the original project and covered in the environmental review; the revised air permit application simply eliminates those parts of the original project that dealt with the coal/coke gasification island.

Relative to environmental review, Excelsior Energy continues, that removal of the gasification island and limiting the project to just the NGCC power block will result in significant reductions in criteria pollution emissions. Mercury emissions will be virtually eliminated, 19 of the project's original 33 emission units will be removed, along with 13 of its original 27 stack vents, and 44 of its original 46 fugitive sources. The revised project will fit within the original physical footprint.

Excelsior Energy has stated that in proposing to construct a subset of the permitted project that fits within the physical footprint of the original proposal and would result in substantial reductions in the impacts examined in the Final Environmental Impact Statement, there is no need to conduct additional environmental review.

## **EFP Staff Analysis and Comments**

The language contained in the recently enacted Minnesota Statutes 216B.1694, Subd. 3, implies that the current LEPPG Site Permit is valid for the construction of a natural gas-fueled LEPPG on the approved site (West Range) and that the allotted time to commence construction of said natural gas-fueled plant extends to the earlier of (i) four years from the date the final required state or federal preconstruction permit is issued or (ii) June 30, 2019.

It should be noted that in the LEPGP Site Permit (Section IV, E) issued for the Mesaba Energy Project, construction of the IGCC facility must commence within four years from the date of issuance of the LEPGP Site Permit (March 12, 2010) or the Commission shall consider suspension of the Permit in accordance with Minnesota Rule 4400.3750 (since renumbered 7850.4700).

From the Permittee's request, it is unclear whether Excelsior Energy plans on adding the gasification island at some later date, if at all, beyond the time frames outlined in the LEPGP Site Permit.

Minnesota Statutes 216E.02, gives the Commission the authority to select sites and grant permits for the construction of large electric power facilities; tied to this authority is the preparation of an environmental review document, prepared by the Department of Commerce, for each LEPGP Site Permit Application deemed complete by the Commission. Minnesota Statutes 216E.03, states that no other state environmental review documents shall be required for those large electric power facilities.

Should the Commission find that the current LEPGP Site Permit is valid for the construction of a natural gas-fueled plant pursuant to Minnesota Statutes 216B.1694, Subd. 3, no other State environmental review would be required.

As to the need to supplement the existing environmental review document to account for any issues arising from Excelsior Energy's proposal to construct a NGCC plant on the approved site, EFP staff agrees with Excelsior Energy that by constructing and operating only a subset of the original project, that being the combined-cycle power block (CTGs and HRSGs), the result will be a substantial reduction in the resources utilized and a dramatic lessening of the potential impacts of the project. Additionally, the components and resources required for the combined-cycle power block were part of the original project and covered in the environmental impact statement.

Given this information (resource requirements and potential impacts), EFP staff would most likely concur with Excelsior Energy concerning the lack of need for supplementing the environmental review document. However, while EFP staff concurs with Excelsior Energy based on this qualitative analysis, staff also believes that the record would be better served if the Permittee were to submit a more quantitative analysis of the specific differences into the record.

To serve this purpose, a matrix table could be developed that lists in "line-item" format the specific differences in system components, resource requirements and potential impacts of the IGCC versus the NGCC facility, to include such topics as:

- Major process/operational equipment
  - Components
  - Infrastructure
- Effluents, emissions, and waste
  - Solid waste
  - Hazardous waste
  - Air emissions and sources

### Water discharge

- Resource requirements
  - Water
  - Fuel
  - Land
  
- Potential impacts
  - Aesthetics
  - Air Quality and Climate
  - Geology and Soils
  - Water Resources
  - Floodplains
  - Wetlands
  - Biological Resources
  - Cultural Resources
  - Noise

## **EFP Staff Recommendations**

EFP staff recommends that the Commission:

1. Request Excelsior Energy clarify its future plans concerning the construction of the gasification island.
  
2. Require Excelsior Energy to file additional information specifying the differences in system components, resource requirements and potential impacts of the IGCC versus the NGCC facility.