January 29, 2015

TO: INTERESTED PARTIES

RE: The University of Minnesota Twin Cities Combined Heat and Power Project Environmental Impact Statement

On January 27, 2015, the Minnesota Pollution Control Agency (MPCA) Citizens’ Board voted to approve the Findings of Fact, Conclusions of Law, and Order for the adequacy decision on the Environmental Impact Statement (EIS) for the proposed University of Minnesota Twin Cities Combined Heat and Power Project, Hennepin County. The MPCA has determined that the University of Minnesota Combined Heat and Power Project EIS is adequate.

On January 27, 2015, the MPCA Citizens’ Board also voted to approve the Findings of Fact, Conclusions of Law, and Order authorizing the Air Emissions Permit No. 05301050-007 for the proposed University of Minnesota Twin Cities Combined Heat and Power Project, Hennepin County.

We appreciate the time and effort of those who submitted comments on the Draft EAW and Draft Air Permit.

Sincerely,

[Signature]

John Linc Stine
Commissioner

JLS:bt
This matter came before the Minnesota Pollution Control Agency (MPCA) Citizens' Board (Board) at a regular meeting held in St. Paul, Minnesota on January 27, 2015. Based on the information gathered during the Environmental Assessment Worksheet (EAW) process, the comments received on the EAW, input from MPCA staff, and other information in the record, the MPCA hereby makes the following Findings of Fact, Conclusions of Law, and Order.

FINDINGS OF FACT

Project Description

1. The University of Minnesota Twin Cities Campus (University) is a teaching and research institution covering an area of approximately 1,154 acres and containing about 22 million square feet of buildings.

2. The University of Minnesota Board of Regents proposes to construct a new combined heat and power (CHP) project ("Project") to provide steam for the Twin Cities campus steam distribution system and electricity. The Project includes the following equipment:
   a. A 22.8 MW Combustion Turbine Generator (CTG) (EU 161); the CTG will use a stage, dry low NOx combustor;
   b. A 210 MMBTU/hr duct burner system (EU 162);
   c. A 270,000 lb steam/hr heat recovery steam generator (HRSG) using exhaust gases from the system;
   d. An aqueous ammonia-based selective catalytic reduction (SCR) system to control nitrogen oxides;
   e. An oxidation catalyst to control carbon monoxide (CO) emissions

3. The University also proposes to install a 500 kW emergency generator that would use ultra-low sulfur distillate (ULSD) oil for fuel. The Project will use natural gas as primary fuel and ULSD oil when gas is curtailed or physically unavailable. ULSD contains no more than 15 parts per million (ppm) sulfur, which will minimize both sulfur dioxide and particulate emissions from the generator.
4. The Project emission units will be installed in the existing Main Plant Building. The University’s Southeast Steam Plant, located at 600 Main Street SE, Minneapolis, about one-half mile from the Main Plant Building, is now the primary source of steam for the campus and the University’s Medical Center.

5. The Southeast Steam Plant has five operational boilers:
   a. One fluidized bed boiler capable of burning coal, wood, oat hulls or natural gas [EU001]. This boiler uses acid gas controls and a fabric filter to control Particulate Matter (PM).
   b. Two natural gas- or No. 2 fuel oil-fired package boilers [EU002 and EU003]. These boilers are not equipped with any control equipment, but incorporate flue gas recirculation to limit emissions of nitrogen oxides (NOx).
   c. Two coal-fired boilers also capable of firing No. 2 fuel oil [EU004 and EU005]. The coal-fired boilers are each equipped with acid gas controls and with fabric filters to control PM emissions.

6. The two coal-fired boilers are more than 60 years old and the University indicates they no longer meet the University’s reliability requirements or sustainability goals. The two coal fired boilers will be retired when the CHP project commences commercial operations. The University will continue operating the remaining three boilers at the Southeast Plant. The Southeast Plant will become the secondary source of steam, as a back-up to the CHP facility.

7. Outside of the Southeast Plant, the University has a number of diesel-fired generators and pumps, natural gas-fired generators, and natural gas-fired boilers. These units are not being modified, although the air quality permit will include some updates to the regulatory requirements for these units.

ENVIRONMENTAL REVIEW OF THE PROJECT

8. Because this Project will generate more than 100,000 tons per year of greenhouse gas emissions, Minn. R. 4410.4300, subp 15(B) requires the preparation of an Environmental Assessment Worksheet (EAW).

9. An EAW is a brief document designed to set out the basic facts necessary to determine whether an EIS is required for a proposed project or to initiate the scoping process for an EIS. (Minn. R. pt. 4410.0200, subp. 24) The MPCA is the Responsible Governmental Unit (RGU) for preparing the EAW for this Project.

10. The MPCA provided public notice of the Project as follows:
    a. Notice of the availability of the EAW for public comment was published in the EQB Monitor on October 27, 2014, as required by Minn. R. 4410.1500.
    b. The EAW was available for review on the MPCA website at http://www.pca.state.mn.us/news/eaw/index.html.
    c. The MPCA provided a news release to media, Twin Cities metro counties, and other interested parties on October 27, 2014.
11. During the 30-day public comment period ending on November 26, 2014, the MPCA received comment letters from the Minnesota Department of Natural Resources, Metropolitan Council, and four citizens. A list of the comment letters received and copies of the letters are included as Appendix A to these Findings.

12. The MPCA prepared written responses to the comment letters received during the public comment period. The responses are included as Appendix B to these Findings.

Standard for Decision on the Need for an EIS

13. The MPCA shall base its decision on the need for an EIS on the information gathered during the EAW process and the comments received on the EAW. (Minn. R. 4410.1700, subp. 3) The agency must order an Environmental Impact Statement (EIS) for projects that have the potential for significant environmental effects. (Minn. R. 4410.1700, subp. 1) In deciding whether a project has the potential for significant environmental effects, the MPCA must compare the impacts that may be reasonably expected to occur from the Project with the criteria set forth in Minn. R. 4410.1700, subp. 7. These criteria are:

A. Type, extent, and reversibility of environmental effects.

B. Cumulative potential effects. The responsible governmental unit (RGU) shall consider the following factors: whether the cumulative potential effect is significant; whether the contribution from the project is significant when viewed in connection with other contributions to the cumulative potential effect; the degree to which the project complies with approved mitigation measures specifically designed to address the cumulative potential effect; and the efforts of the proposer to minimize the contributions from the project.

C. The extent to which the environmental effects are subject to mitigation by ongoing public regulatory authority. The RGU may rely only on mitigation measures that are specific and that can be reasonably expected to effectively mitigate the identified environmental impacts of the project.

D. The extent to which environmental effects can be anticipated and controlled as a result of other available environmental studies undertaken by public agencies or the project proposer, including other EISs.

Type, Extent, and Reversibility of Environmental Effects

14. The MPCA finds that the types of impacts that may reasonably be expected to occur from the Project include:

   a. Air Quality impacts related to greenhouse gases.
   b. Air Quality impacts related to criteria pollutants (particulate matter, sulfur dioxide, nitrogen oxide, and carbon monoxide).

15. Written comments received during the comment period raised additional issues, as follows:
   
   • Public Safety issues related to natural gas explosions.
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- Site Security.
- Stormwater Runoff impacts to the Mississippi River.

16. With respect to the extent and reversibility of impacts that are reasonably expected to occur from the Project, the MPCA makes the following findings.

Findings on greenhouse gas impacts.

17. The Project's greenhouse gas emissions will be generated from the combustion of fuel.

18. Combined heat and power systems, such as the system proposed in this Project, have been recognized by the EPA as an inherently lower-emitting design for GHG pollutants.

19. Total Project system efficiency will be approximately 80 percent. In comparison, a utility boiler will use no more than 38 percent of available energy to produce electricity.

20. The Project will use natural gas, which releases fewer greenhouse gases compared to coal, as the primary fuel and ULSD distillate oil when gas is curtailed or physically unavailable.

21. The Project will eliminate the use of two coal-fired boilers, reducing the need for coal as a fuel.

22. With respect to the reversibility of greenhouse gas impacts that are reasonably expected to occur from the Project, greenhouse gas emissions from the facility will continue while the facility remains in operation, and would cease only if the Project were to be temporarily or permanently closed.

23. The MPCA finds that information presented in the EAW and other information in the environmental review record is adequate to address the concerns related to air quality impacts of greenhouse gases. The greenhouse gas impacts on air quality that are reasonably expected to occur from the Project have been considered during the review process.

24. The MPCA finds that the Project, as it is proposed, does not have the potential for significant environmental effects based on the type, extent, and reversibility of greenhouse gas impacts related to air quality that are reasonably expected to occur from the Project.

Findings on impacts of criteria pollutants (particulate matter, sulfur dioxide, nitrogen oxide, and carbon monoxide).

25. The Project will eliminate the use of two coal-fired boilers, reducing the need for coal as fuel.

26. The Project will use natural gas as the primary fuel and ULSD distillate oil when gas is curtailed or unavailable.

27. The Project includes an oxidation catalyst to reduce carbon monoxide. In addition, the combustion turbine generator will use a stage, dry low NOx combustor as well as an aqueous ammonia-based
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selective catalytic reduction system to control NOx. The use of these control techniques will reduce the amount of CO and NOx release to the environment.

28. Screening modeling was conducted following an MPCA-approved protocol. The MPCA used the AERSCREEN dispersion model. Worst-case hourly emissions (ULSD as fuel, cold-weather operation) and stack temperature (226 F) were input to the model, along with actual local geography. Neighboring building dimensions were also input to the model.

29. Modeling results were compared to a screening value known as a Significant Impact Level (SIL), provided by the EPA. A SIL value is considered a de minimis or insignificant pollutant concentration that is used as a measure of whether a source may cause or contribute to a violation of the NAAQS, i.e. a significant deterioration of air quality. If any of the analysis conducted as part of this project modeled a pollutant concentration greater than the SIL, the MPCA would have requested additional analysis. The results of the air quality assessment demonstrate that the total ambient pollutant concentrations of the new project are at or below the EPA Significant Impact Level (SIL) of each criteria pollutant. With concentrations at or below the SIL for all criteria pollutants, further analysis based on AERSCREEN results is not needed.

30. With respect to the reversibility of air quality impacts from criteria pollutants that are reasonably expected to occur from the Project, air emissions from the facility will continue while the facility remains in operation, and would cease only if the Project were to be temporarily or permanently closed. While in operation, the Project is expected to meet applicable air quality standards and criteria. If excessive air emissions or violations of the ambient air standards were to occur, air quality impacts are likely to be temporary in nature and corrective measures could be implemented. Such measures could include the initiation of a complaint investigation by the MPCA and requiring the Project Proposer to make operation and maintenance changes.

31. The MPCA finds that information presented in the EAW and other information in the environmental review record is adequate to address the concerns related to air quality. The impacts on air quality that are reasonably expected to occur from the Project have been considered during the review process and appropriate mitigation measures are available and will be required to prevent significant adverse impacts.

32. The MPCA finds that the Project, as it is proposed, does not have the potential for significant environmental effects based on the type, extent, and reversibility of impacts related to air quality that are reasonably expected to occur from the Project.

Findings on public safety related to natural gas explosion (raised in public comments).

33. Natural gas is used throughout the Twin Cities as a fuel source for home and business use. The risk of an explosion or fire is low.

34. In the unlikely event of a natural gas explosion at the Project site, the main hazard would be related to the direct impacts from the potential fire and/or explosion, which primarily would be expected to be limited to the immediate area. In the event of a fire, smoke may impact the local
area depending on extent of the fire and the prevailing wind speed and direction. The impacts would be of a limited duration.

35. Precautions have been designed into the Project for construction and operation to reduce the risk of an explosion inside the Project site.

36. The gas turbine will be inside a building that contains infrared, temperature and gas monitors. These monitors will be tied to an automated carbon dioxide fire suppression system. The monitors also automatically call for fuel and air supply systems to shut down in the case of a potential fire.

37. Natural gas will be compressed prior to injection into the turbine. Only enough natural gas to fill the three-inch diameter supply pipe will be under compression. No compressed gas storage will be included in the project. Block and bleed valves will be located outside the plant to relieve gas pressure caused by a plant shutdown.

38. The University will comply with all State Fire Code and Minneapolis Fire Department guidelines including a fire hydrant coverage plan.

39. A fire sprinkler system will be installed.

40. The University has an ongoing relationship with the city of Minneapolis Fire Department regarding the Southeast Plant and will work with the City to ensure proper coordination in case of fire at the Main Plant.

41. The MPCA finds that information presented in the EAW and other information in the environmental review record is adequate to address the concerns related to public safety. The impacts on public safety related to natural gas explosion that are reasonably expected to occur from the Project have been considered during the review process and methods to prevent significant adverse impacts have been developed.

42. The MPCA finds that the Project, as proposed, does not have the potential for significant environmental effects based on type, extent, and reversibility of impacts related to public safety that are reasonably expected to occur from the Project.

Findings on site security (raised in public comment).

43. During construction, the construction site will be surrounded by a perimeter fence that will be locked at the end of each day.

44. During operation, an eight foot tall security fence with three strands of barbed wire will surround the Project site. Access will be provided by a vertical pivot-lift gate equipped with an intercom and security card reader. Security cameras will be monitored and operated from the Project control room.

45. The MPCA finds that information presented in the EAW and other information in the environmental review record is adequate to address the concerns related to site security. The
impacts on site security related to natural gas explosion that are reasonably expected to occur from the Project have been considered during the review process and methods to prevent significant adverse impacts have been developed.

46. The MPCA finds that the Project, as proposed, does not have the potential for significant environmental effects based on the type, extent, and reversibility of impacts related to site security that are reasonably expected to occur from the Project.

Impacts related to stormwater runoff (raised in public comments).

47. One concern raised during the public comment period is whether stormwater could impact the Mississippi River during construction and operation. This issue is addressed as follows.

48. The University will develop a stormwater pollution prevention and management plan (SWPPP), which include best management practices (BMPs) for the construction and operation of the Project, as required by the MPCA National Pollution Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater General Permit and NPDES/SDS Industrial Stormwater General Permit. These measures will mitigate the potential for adverse impacts to surface water quality related to stormwater runoff. The quality of surface waters is not expected to significantly change if managed in accordance with the BMP required by the NPDES/SDS Permit.

49. Although significant adverse impacts to water quality are not expected, if water quality impacts were to occur, the operation and management of the Project and the BMPs can be modified and impacts to waters could be reversed. Therefore, the water quality impacts that are reasonably expected to occur from the proposed project are found to be reversible.

50. The MPCA finds that information presented in the EAW and other information in the environmental review record is adequate to address the concerns related to stormwater runoff erosion prevention and sediment control BMPs. The impacts on stormwater runoff that are reasonably expected to occur from the Project have been considered during the review process and methods to prevent significant adverse impacts have been developed.

51. The MPCA finds that the Project, as it is proposed, does not have the potential for significant environmental effects based on the type, extent, and reversibility of impacts related to stormwater runoff that are reasonably expected to occur from the Project.

Cumulative Potential Effects

52. The second criterion that the MPCA must consider when determining if a project has the potential for significant environmental effects is the "cumulative potential effects." In making this determination, the MPCA must consider "whether the cumulative potential effect is significant; whether the contribution from the project is significant when viewed in connection with other contributions to the cumulative potential effect; the degree to which the project complies with approved mitigation measures specifically designed to address the cumulative potential effects; and the efforts of the proposer to minimize the contributions from the project." (Minn. R. 4410.1700 subp.7.b). The MPCA findings on this criterion are set forth below.
53. The EAW, public comments, and MPCA follow-up evaluation did not disclose any related or anticipated future projects that may interact with this Project in such a way as to result in significant cumulative potential environmental effects.

54. The EAW evaluated the cumulative potential effects for the Project on air quality.

Cumulative potential impacts on air quality.

43. The MPCA evaluated the cumulative potential effects on air quality by considering background concentrations for the downtown Minneapolis area. For each National Ambient Air Quality Standard (NAAQS), the background plus SIL was less than 90 percent of the NAAQS. Project impact for each NAAQS was equal or less than the SIL; therefore, the cumulative potential effects on air quality are not believed to be significant in the Project Area, and the Project is not expected to contribute significantly to adverse cumulative potential effects on air quality.

33. Based on information on the Project obtained from air screening modeling and permit application review processes, and presented in the EAW, and in consideration of potential effects due to related or anticipated future projects, the MPCA does not expect significant cumulative effects from the Project.

34. The MPCA finds that the Project does not have a significant cumulative potential effect.

The Extent to Which the Environmental Effects Are Subject to Mitigation by Ongoing Public Regulatory Authority

35. The third criterion that the MPCA must consider when determining if a project has the potential for significant environmental effects is the extent to which the environmental effects are subject to mitigation by ongoing public regulatory authority. Only mitigation measures that are specific and that can be reasonably expected to effectively mitigate the identified environmental impacts of the project can be considered. (Minn. R. 4410.1700, subp. 7.C) The MPCA findings with respect to this criterion are set forth below.

36. The following permits or approvals will be required for the Project:

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<tr>
<th>Unit of Government</th>
<th>Permit or Approval Required</th>
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<tr>
<td>MPCA</td>
<td>Air Emissions Permit Amendment</td>
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<tr>
<td>MPCA</td>
<td>National Pollution Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater General Permit</td>
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<td>MPCA</td>
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<td>MPCA</td>
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<td>Metropolitan Council Environmental Services (MCES)</td>
<td>Industrial Waste Discharge Permit</td>
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<td>University of Minnesota</td>
<td>Building Permit</td>
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37. **MPCA Air Emissions Permit Amendment.** An Air Emissions Permit Amendment to the University’s existing Federal Part 70 permit must be issued before construction can begin. The Air Emission Permit will contain operational and emission limits, including requirements for use of control equipment, that will help prevent or minimize the potential for significant environmental effects.

38. **MPCA NPDES/SDS Construction Stormwater General Permit.** An NPDES/SDS Construction Stormwater General Permit is required. A General NPDES Construction Stormwater Permit is required when a project disturbs one or more acres. It provides for the use of best management practices (BMPs) such as silt fences, bale checks, and prompt revegetation to prevent eroded sediment from leaving the construction site. The University must have a SWPPP that will provide more detail as to the BMPs to be implemented and will also address: phased construction; vehicle tracking of sediment; inspection of erosion control measures implemented; and timeframes in which erosion control measures will be implemented. The general permit also requires adequate stormwater treatment capacity be provided to assure that water quality will not be impacted by runoff once the project is constructed.

39. **MPCA NPDES/SDS Industrial Stormwater General Permit.** A NPDES/SDS Industrial Stormwater General Permit will be required for the construction of the Project. The NPDES/SDS Industrial Stormwater Permit requires that specific conditions be adhered to for the operation of the Project, and for overall compliance with water quality requirements. The University will need to prepare a Stormwater Pollution Prevention Plan.

40. **MPCA NPDES/SDS Industrial Groundwater Pump Out Permit.** A NPDES/SDS Industrial Groundwater Pump Out Permit may be required, if during construction, groundwater pump out is required and contaminant levels exceed permitting thresholds.

41. **MPCA Municipal Separate Storm Sewer System (MS4) General Permit.** The University has an existing MS4 General Permit, which includes the development of a Stormwater Pollution Prevention Program (SWPPP) designed to reduce the amount of sediment and pollution that enters surface and ground water from storm sewer systems to the maximum extent practicable. The project will meet all requirements laid out in the existing SWPPP.

42. **MNDNR General Permit for Temporary Dewatering.** A MNDNR General Permit for Temporary Dewatering may be required, if during construction, groundwater pump out is required and the amount of discharge exceeds 10,000 gallons per day.

43. **Metropolitan Council Environmental Services (MCES) Industrial Waste Discharge Permit.** An Industrial Waste Discharge Permit must be approved and the Project must meet standards and requirements set forth in MCES' Waste Discharge Rules before operations can begin.

44. **University of Minnesota Building Permit.** A Building Permit issued by the University of Minnesota will be required before construction can begin.

45. The above-listed permits include general and specific requirements for mitigation of environmental effects of the Project. The MPCA finds that the environmental effects of the Project are subject to mitigation by ongoing public regulatory authority.
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The Extent to Which Environmental Effects can be Anticipated and Controlled as a Result of Other Available Environmental Studies Undertaken by Public Agencies or the Project Proposer, Including Other EISs

46. The fourth criterion that the MPCA must consider is “the extent to which environmental effects can be anticipated and controlled as a result of other available environmental studies undertaken by public agencies or the project proposer, including other EISs.” (Minn. R. 4410.1700, subp. 7. D). The MPCA findings with respect to this criterion are set forth below.

47. The following documents were reviewed by MPCA as part of the environmental impact analysis for the Project.
   - data presented in the EAW
   - permit application
   - air dispersion modeling report

48. This list is not intended to be exhaustive. The MPCA also relies on information provided by the project proposer, persons commenting on the EAW, staff experience, and other available information obtained by staff.

49. There are no elements of the Project that pose the potential for significant environmental effects that have not been addressed by the Project design and permit development processes and by ensuring conformance with regional and local plans.

50. Based on the environmental review, previous environmental studies by public agencies or the project proposer, and staff expertise and experience on similar projects, the MPCA finds that the environmental effects of the Project that are reasonably expected to occur can be anticipated and controlled.

51. The MPCA adopts the rationale stated in the attached Response to Comments (Appendix B) as the basis for response to any issues not specifically addressed in these Findings.

CONCLUSIONS OF LAW

52. The MPCA is the governmental unit responsible for determining the need for an EIS for this Project.

53. The EAW, the permit development process, and the evidence in the record are adequate to support a reasoned decision regarding the potential significant environmental effects that are reasonably expected to occur from this Project.

54. Areas where the potential for significant environmental effects may have existed have been identified and appropriate mitigation measures have been incorporated into the Project design and permits. The Project is expected to comply with all MPCA standards.

55. Based on a comparison of the impacts that are reasonably expected to occur from the Project with the criteria established in Minn. R. 4410.1700 subp. 7, the Project does not have the potential for significant environmental effects.
56. Based on the record, the MPCA makes a negative declaration on the need for an EIS for the Project.

57. Any findings that might properly be termed conclusions and any conclusions that might properly be termed findings are hereby adopted as such.

ORDER

58. The MPCA issues a Negative Declaration on the need for an Environmental Impact Statement for the University of Minnesota Twin Cities Campus Combined Heat and Power (CHP) Project, based on the information gathered during the EAW process and the comments received on the EAW indicating that there are no potential significant environmental effects reasonably expected to occur.

IT IS SO ORDERED

[Signature]
Commissioner John Linc Stine
Chair, Citizens' Board
Minnesota Pollution Control Agency

1/29/15
Date
The above-entitled matter came before the Minnesota Pollution Control Agency (MPCA) Citizens’ Board at a regular meeting held in St. Paul, Minnesota on January 27, 2015. Based on the MPCA staff review, comments, and information received during the comment period, and other information in the record of the MPCA, the MPCA hereby makes the following Findings of Fact, Conclusions of Law, and Order:

**Findings of Fact**

The University of Minnesota – Twin Cities (the Facility) is a teaching and research institution with two campuses in the Twin Cities: the Minneapolis campus and the St. Paul campus. The two campuses are approximately three miles apart and are connected by a transitway 80 feet wide owned by the University. The Facility covers an area of approximately 1,154 acres and contains approximately 22,000,000 gross square feet of buildings overall.

The Minneapolis campus consists of the East and West Bank, located on both sides of the Mississippi River. The campus has a variety of teaching and research facilities in the areas of engineering, liberal arts, business, health sciences, and athletics. The Minneapolis campus also includes dormitories and other support activities that are operated by the Facility.

A central steam plant (Southeast Plant), which directly provides steam for heating and cooling to the Minneapolis campus, is located on the East Bank. The Southeast Plant is owned by the Facility, but is currently operated by Veolia Energy Solutions, LLC (Veolia). The Southeast Plant provides steam to most on-campus buildings and to the Fairview University Medical Center through the University system.

The Southeast Plant has five operational boilers. One is a fluidized bed boiler capable of burning coal, wood, oat hulls or natural gas [EU001]. The fluidized bed boiler [EU001] uses acid gas controls and a fabric filter to control Particulate Matter (PM). Two boilers are natural gas- or No. 2 fuel oil-fired package boilers [EU002 and EU003]. The two package boilers [EU002 and EU003] are not equipped with any control equipment, but incorporate flue gas recirculation to limit NOx.
emissions. The fourth and fifth boilers are coal-fired also capable of firing No. 2 fuel oil [EU004 and EU005]. The coal-fired boilers are each equipped with acid gas controls and with fabric filters to control PM [EU004 and EU005].

5. Outside of the Southeast Plant, the Facility has a number of diesel-fired generators and pumps, natural gas-fired generators, and natural gas-fired boilers distributed throughout both campuses.

Regulatory Status of Permit/Permitting History

6. The Facility has an extensive permitting history. The Facility currently operates under a Federal Part 70 Permit. The Facility is classified as a major existing source under the Clean Air Act (CAA) New Source Review program. The Facility is classified as an area source under the CAA Hazardous Air Pollutants program. On May 16, 2006, the current operating permit was issued.

7. In November 2013, the first air permit application for the proposed Main Plant Combined Heat and Power Plant (CHP project) was submitted along with the Environmental Assessment Worksheet (EAW). At that time, Environmental Review required the Facility to conduct air dispersion modeling for the project. The final application was submitted in August 2014, after the air dispersion modeling was approved.

8. This permit action is a minor modification under the CAA Prevention of Significant Deterioration (PSD) program.

Previous Environmental Review

9. In 1996, an EAW and Environmental Impact Statement were completed prior to the renovation of the Southeast Plant.

Compliance/Enforcement History

10. In the past five years, there have been two minor enforcement actions at the Facility (one in the air program and one in the tanks program).

Proposed Project Description

Proposed Permit Modification

11. In August, 2014, the Facility submitted an application for a major permit amendment to its existing Federal Part 70 permit. This permit application was received August 7, 2014.

12. This application requested approval to install the proposed CHP project. The CHP project includes a 22.8 MW Combustion Turbine Generator (CTG) (EU 161) in series with a 210 MMBtu/hr duct burner (EU 162). Exhaust gases will be used to produce up to 270,000 pounds of steam per hour for the Minneapolis campus steam distribution system. Also included in the request was approval to install a 500 kW emergency generator. The allowed fuel for the emergency generator is ultra-low sulfur distillate (ULSD) distillate oil.
13. The CHP project will use natural gas as primary fuel and ULSD distillate oil when gas is curtailed or physically unavailable. The CHP system includes an oxidation catalyst to reduce CO. In addition, the CTG will use a stage, dry low NOx combustor as well as an aqueous ammonia-based selective catalytic reduction system to control NOx.

14. Upon the commencement of commercial operation of the CHP project, two coal fired boilers (EU 004 and EU 005) will be retired.

15. There are several, additional minor changes to the operating permit that are proposed to be authorized in this permit action. These additional changes pertain to updating the existing operating permit.

16. The PSD program is a preconstruction permitting program for proposed projects with emissions that exceed its major modification thresholds. The proposed CHP project emission increases were below the PSD major modification thresholds. Because the CHP project emissions alone were below the PSD major modification thresholds, the Facility did not need to analyze any netting emission decreases in this permit action.

**Environmental Review**

17. A mandatory EAW is triggered for this project because greenhouse gas emissions will be greater than 100,000 tons per year. Minn. R. 4410.4300, subp. 15.B Air Pollution. On October 27, 2014, an EAW was public noticed for this project in the Environmental Quality Board (EQB) Monitor.

18. On January 27, 2014, the MPCA Citizens’ Board (Board) voted to approve the Findings of Fact, Conclusions of Law, and Order for a negative declaration on the need for an Environmental Impact Statement.

**Air Quality Impacts**

19. As a minor PSD modification, the Facility was not required to conduct air dispersion modeling as part of the CHP project permitting process. Dispersion modeling is required for major PSD major modifications to ensure compliance with National Ambient Air Quality Standards (NAAQS) and other air quality protection indicators. The Facility did, however, conduct air dispersion screening modeling.

20. Screening modeling was conducted following an MPCA-approved protocol. The AERSCREEN dispersion model was used. Worst-case hourly emissions (ULSD as fuel, cold-weather operation) and stack temperature (226 F) were input to the model, along with actual local geography. Neighboring building dimensions were also input to the model.

21. Modeling results were compared to a screening value known as a Significant Impact Level (SIL), provided by the U.S. Environmental Protection Agency (EPA). Each of the NAAQS evaluated in this project have an applicable SIL value that is between two and five percent of the applicable NAAQS. A SIL value is considered a de minimus or insignificant pollutant concentration that is used as a
measure of whether a source may cause or contribute to a violation of the NAAQS, i.e. a significant deterioration of air quality. If any of the analysis conducted as part of this project modeled a pollutant concentration greater than the SIL, the MPCA would have requested additional analysis. The results of the air quality assessment demonstrate that the total ambient pollutant concentrations of the new project are below the EPA SIL of each criteria pollutant. As a result, the MPCA supports the conclusion of the EAW air assessment and no reason for further analysis based on AERSCREEN results, NAAQS thresholds met, and final values being below the SIL. Because AERSCREEN results demonstrated that the predicted values were below the SIL, the MPCA supports the conclusion of the EAW that no further analysis is necessary.

22. Modeling results can be considered environmentally conservative because they do not take into account:
   i. The retirement of two coal-fired boilers at the neighboring Southeast Plant.
   ii. Reduced operation of the remaining Southeast Plant boilers due to baseload operation of the Main CHP Plant.

Procedural History

Public Notice of Draft Permit

23. On October 30, 2014, pursuant to Minn. R. 7007.0850, subp. 2, the MPCA Commissioner issued a public notice of the preliminary decision to issue the permit. The public notice notified the public of the public comment period. The notice was published in the Star Tribune on that date. In addition, the public notice was made available for review on the MPCA website at http://www.pca.state.mn.us/index.php/public-notices/list.html, and mailed to interested parties. The notice included the information required by rule.

24. The public comment period for the Draft Permit began on October 31, 2014, and ended at 4:30 p.m. on December 1, 2014. During the 30-day comment period, the MPCA received comment letters from citizens.

Public Comment and MPCA Consideration of Comments Regarding Draft Permit

25. During the public comment period, the MPCA received comments from three parties. Two of the three commenters requested a public informational meeting (both on December 1, 2014). The first commenter stated concerns regarding air quality and emissions in the immediate vicinity of the Riverview Tower Condominiums neighborhood as a result of this project. The second commenter had concerns that under right wind conditions the emissions from the CHP Project will be sucked into the air intake on top of his building. The commenter also stated concerns about the air quality and emissions in the immediate vicinity of his neighborhood as a result of this project. The third commenter stated that his neighborhood is concerned with air quality which may be adversely affected by the CHP Project.

26. The MPCA prepared responses to all comments received during the 30-day public comment period. Comment letters received have been hereby incorporated by reference as Appendix A to these
findings. The MPCA responses to comments received are hereby incorporated by reference as Appendix B to these findings.

Public Notice of Public Informational Meeting

27. On December 22, 2014, the MPCA published a notice of a public informational meeting on January 22, 2015. The notice was published in the Star Tribune on that date. In addition, the public notice was made available for review on the MPCA website at http://www.pca.state.mn.us/84q8ck8. This notice was also mailed to the interested party list as well as the commenters on the EAW and draft permit. The notice included the information required by rule. The meeting was conducted in a local, neighborhood building.

Community Involvement in Process

28. As part of the permitting process and in consultation with the EPA, the MPCA has evaluated available socio-economic information about residents in the area around the Facility to evaluate the potential for environmental justice concerns. In the case of University of Minnesota's CHP project, the EPA and MPCA have identified possible concerns for environmental justice based on information about income and ethnicity of area residents.

29. To address these concerns, the Facility conducted enhanced outreach to area residents to facilitate their awareness of and involvement in the decision-making process. Beginning in 2011 and continuing throughout the permitting process, this included outreach on multiple occasions to local community groups, community radio, informal communication, and community information meetings. A summary of the community engagement conducted by the University of Minnesota is as follows:

2011 and 2012, during the early planning stage of this project:
- E-mail advisory to potentially interested community leaders and organizations on both sides of the river
- community information meetings advertised to the general public and campus area communities

In 2014, in anticipation of the comment period for EAW and permit:
- direct personal outreach to Minnesota and Minneapolis elected officials; state, regional, and local agencies with a potential interest (e.g. Minnesota Department of Natural Resources, Minneapolis Park Board, others); and community and resident associations in neighboring communities on both sides of the river
- presentations to groups: three neighborhood associations and one homeowners' association
- a mass e-mail to 190+ potentially interested parties, community leaders, campus neighbors
- postings about the project and the opportunity to comment on neighborhood list serves and a Cedar Riverside neighborhood online forum
- official public notice of the EAW and permit application in the Star Tribune, the Pioneer Press, the MN Daily; and in the EQB Monitor
- Fourteen paid media announcements on community radio, in three languages
• an interview on a drive-time community radio news program
• additional media coverage by the MN Daily and Midwest Energy News

In December/January in preparation for the MPCA community information meeting:
• direct personal outreach to the West Bank Community Coalition, and to Minneapolis Council members with potentially interested constituents
• two email notices to the interested parties list, including community leaders, campus neighbors, and all who have commented on the project or attended a meeting
• posting on a neighborhood online forum

A detailed record of the Facility’s community engagement is found in Appendix C – Fact Sheet and Appendix D – Outreach Update 2014.

30. With the removal of two coal burning boilers at the Southeast Plant, this permit action will result in an overall low risk in pollutants of concern for health issues. Accordingly, the MPCA did not recommend additional community involvement actions to further address emissions.

FINAL DETERMINATION ON ISSUANCE OF THE PERMIT

31. The MPCA’s decision to issue the proposed permit is governed by its permit rule, Minn. R. 7007.0100, which provides:

Subpart 1. Preconditions for issuance. The agency shall issue a permit or permit amendment, or reissue a permit only if it determines that all of the following conditions have been met:

A. The agency has received a complete application for a permit, permit amendment, or permit reissuance, except that a complete application need not be received before issuance of a general permit under part 7007.1100, subpart 4.
B. The agency has complied with the public participation procedures for permit issuance if required by part 7007.0850.
C. The agency has complied with the procedures for notifying and responding to affected states, if required by part 7007.0900.
D. If the administrator's review is required by part 7007.0950, the administrator has received a copy of the permit and any notices required and has not objected to issuance of the permit within the time period specified, or the administrator has objected by the objection has been resolved to the administrator’s satisfaction.
E. The conditions of the permit provide for compliance with all applicable requirements and the requirements of parts 7007.0100 to 7007.1850, or include a schedule to achieve such compliance.
F. The permit does not reflect a variance from any federally enforceable applicable requirement or requirement of parts 7007.0100 to 7007.1850.
G. The agency anticipates that the applicant will, with respect to the stationary source and activity to be permitted, comply with all conditions of the permit.
H. All applicable provisions of Minn. Stat., ch. 116D, and the rules adopted under Minn. Stat., ch. 116D, have been fulfilled.
Subp. 2. **Grounds for denial.** The following constitute grounds for the agency to refuse to issue a new or modified permit, or to refuse permit reissuance:

A. The agency is unable to make any of the determinations required under subpart 1.
B. There exists at the stationary source to be permitted unresolved noncompliance with applicable state or federal pollution control statutes or rules administered by the agency, or conditions of a previous or existing air emission permit, and the applicant will not undertake a schedule of compliance to resolve the noncompliance.
C. An applicant has failed to disclose fully all facts relevant to the stationary source or activity to be permitted, or the applicant has knowingly submitted false or misleading information to the agency.
D. The permitted facility or activity would endanger human health or the environment and the danger cannot be removed by an amendment to the permit.
E. With respect to the stationary source or activity to be permitted, the applicant has not complied with the requirement to pay fees under chapter 7002.
F. With respect to the stationary source of activity to be permitted, the applicant has failed to pay a penalty owed pursuant to court order, consent decree, stipulation agreement, schedule of compliance, or an order issued under Minn. Statutes, section 116.072.
G. The applicant has failed to prepare a pollution prevention plan or submit a pollution prevention progress report to the commissioner as required by Minn. Stat., §115D.07 and 115D.08.

32. As documented in the findings above, the MPCA received a complete application, has followed all required steps for obtaining EPA review and public comment, and has included all conditions necessary in the permit to ensure compliance with applicable state and federal law (the NAAQS, New Source Performance Standard (NSPS) Subpart KKKK, and NSPS Subpart IIII), and that the Facility will comply with the conditions of the permit.

**CONCLUSIONS OF LAW**

33. Any findings that might properly be termed conclusions and any conclusions that might properly be termed findings are hereby adopted as such.

34. The MPCA has jurisdiction over this matter.

35. Due, adequate, and timely public notice of the proposed permit was given in accordance with Minn. R. 7007.0850, 7007.0900 and 7007.0950.
The conditions under which the MPCA is authorized to issue this permit set forth in Minn. R. 7007.1000 have been met, and no condition for the denial of the permit is present. Proper operation of the project in accordance with the conditions of the permit issued by this order will achieve compliance with applicable state and federal air pollution control statues and rules and the conditions of the permit.

ORDER

36. The Minnesota Pollution Control Agency approves the air permit for the University of Minnesota – Twin Cities Main Plant Combined Heat & Power Project.

IT IS SO ORDERED

[Signature]
Commissioner John Linc Stine
Chair, Citizens’ Board
Minnesota Pollution Control Agency

Date 1/29/15