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APPENDIX A -- ENVIRONMENTAL MITIGATION PROJECTS	

WHEREAS, Plaintiff, the United States of America (“the United States”), on behalf of the United States Environmental Protection Agency (“EPA”), and Plaintiff, the StatMinnesota by its Minnesota Pollution Control Agency, are concurrently filing a Complaint and Consent Decree for injunctive relief and civil penalties pursuant to Sections 113(a)(3) and (b)(2) and 167 of the Clean Air Act (the “Act”), 42 U.S.C. §§ 7413(a)(3) and (b)(2) and 7477, alleging that ALLETE, Inc. (d/b/a Minnesota Power) (“Minnesota Power”) violated the Prevention of Significant Deterioration of Air Quality provisions found at Part C of Title I of the Act, 42 U.S.C. §§ 7470-7492, and the requirements of Title V of the Act, 42 U.S.C. §§ 7661-7661f;

WHEREAS, the EPA has not approved a State of Minnesota State Implementation Plan for purposes of Parts C (Prevention of Significant Deterioration of Air Quality) of Title I of the Clean Air Act, but has delegated its authority to implement the Part C program to the State of Minnesota at 40 C.F.R. 52.1234;

WHEREAS, the State of Minnesota has no areas designated as “nonattainment” for nitrogen oxides, sulfur dioxide, or particulate matter under Part D of Title I of the Clean Air Act at this time, and is therefore not required to have an approved Part D program for these pollutants;

WHEREAS, on August 5, 2008 and March 31, 2011, EPA issued Notices of Violation/Findings of Violation (“NOVs/FOVs”) to Minnesota Power with respect to certain alleged violations of the CAA;

WHEREAS, the United States provided Minnesota Power and the State of Minnesota with actual notice pertaining to Minnesota Power’s alleged violations, in accordance with Section 113 of the Act, 42 U.S.C. § 7413;

WHEREAS, in the Complaint, the United States and the State of Minnesota (collectively

"Plaintiffs") allege claims upon which, if proven, relief can be granted against Minnesota Power under Sections 113 and 167 of the Act, 42 U.S.C. §§ 7413 and 7477;

WHEREAS, in the Complaint, Plaintiffs allege, *inter alia*, that Minnesota Power made major modifications to major emitting Units, and failed to obtain the necessary permits and failed to install and operate the controls necessary under the Act to reduce sulfur dioxide, nitrogen oxides, and/or particulate matter emissions, and that such emissions damage human health and the environment;

WHEREAS, Minnesota Power has not answered the Complaint in light of the settlement memorialized in this Decree;

WHEREAS, nothing herein shall constitute an admission of liability, and Minnesota Power has denied and continues to deny the violations alleged in the NOV/FOVs and Complaint; maintains that it has been and remains in compliance with the Act and is not liable for civil penalties or injunctive relief; and states that it is agreeing to the obligations imposed by this Consent Decree solely to avoid the costs and uncertainties of litigation and to improve the environment;

WHEREAS, the United States, the State of Minnesota, and Minnesota Power (collectively, the "Parties") have agreed that settlement of this action is in the best interests of the Parties and in the public interest, and that entry of this Consent Decree without further litigation is the most appropriate means of resolving this matter;

WHEREAS, the Parties anticipate that the installation and operation of pollution control equipment pursuant to this Consent Decree, and the Retirement, Refueling, or Repowering of certain facilities required by this Consent Decree, will achieve significant reductions of sulfur dioxide, nitrogen oxides, and particulate matter emissions, as well as other pollutants, and

improve air quality;

WHEREAS, the Parties have agreed, and this Court by entering this Consent Decree finds, that this Consent Decree has been negotiated in good faith and at arm's length and that this Consent Decree is fair, reasonable, in the public interest, and consistent with the goals of the Act; and

WHEREAS, the Parties have consented to entry of this Consent Decree without trial of any issues;

NOW, THEREFORE, without any admission of fact or law, it is hereby ORDERED, ADJUDGED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over this action, the subject matter herein, and the Parties consenting hereto, pursuant to 28 U.S.C. §§ 1331, 1345, 1355, and 1367, and pursuant to Sections 113 and 167 of the Act, 42 U.S.C. §§ 7413 and 7477. Venue is proper under Section 113(b) of the Act, 42 U.S.C. § 7413(b), and under 28 U.S.C. § 1391(b) and (c). Solely for the purposes of this Consent Decree and the underlying Complaint, and for no other purpose, Minnesota Power waives all objections and defenses that it may have to the Court's jurisdiction over this action, the Court's jurisdiction over Minnesota Power, and to venue in this judicial district. Minnesota Power consents to and shall not challenge entry of this Consent Decree or this Court's jurisdiction to enter and enforce this Consent Decree. Notwithstanding the foregoing, should this Consent Decree not be entered by this Court, then the waivers and consents set forth in this Section I (Jurisdiction and Venue) shall be null and void and of no effect.

2. Except as expressly provided for herein, this Consent Decree shall not create any rights in or obligations of any party other than the Parties to this Consent Decree. Except as provided in Section XXVI (Public Comment) of this Consent Decree, the Parties consent to entry of this Consent Decree without further notice.

II. APPLICABILITY

3. Upon entry, the provisions of this Consent Decree shall apply to and be binding upon the United States, the State of Minnesota, and upon Minnesota Power and any successors, assigns, or other entities or persons otherwise bound by law.

4. Minnesota Power shall provide a copy of this Consent Decree to all vendors, suppliers, consultants, contractors, agents, and any other company or other organization retained to perform any of the work required by this Consent Decree. Notwithstanding any retention of contractors, subcontractors, or agents to perform any work required under this Consent Decree, Minnesota Power shall be responsible for ensuring that all work is performed in accordance with the requirements of this Consent Decree. In any action to enforce this Consent Decree, except as expressly provided herein (e.g. Section XV (Force Majeure)), Minnesota Power shall not assert as a defense the failure of its officers, directors, employees, servants, agents, or contractors to take actions necessary to comply with this Consent Decree.

III. DEFINITIONS

5. Every term expressly defined by this Section shall have the meaning given that term herein. Every other term used in this Consent Decree that is also a term used under the Act or in a federal regulation implementing the Act shall mean in this Consent Decree what such term means under the Act or those regulations.

6. A “12-Month Percent Heat Input from Coal” for a Rapids Unit shall be expressed as a percentage and calculated as follows: first, sum the total heat input to the Unit from coal in mmBTU during the current Operating Month and the previous eleven (11) Operating Months; second, sum the total heat input to the Unit from all fuel sources in mmBTU during the current Operating Month and the previous eleven (11) Operating Months; and third, divide the total heat input from coal by the total heat input from all fuel sources.

7. A “12-Month Rolling Average Emission Rate” for a Unit shall be expressed in lb/mmBTU and calculated in accordance with the following procedure: first, sum the total pounds of pollutant emitted from the applicable Unit during the current Operating Month and the previous eleven (11) Operating Months; second, sum the total heat input to the unit in mmBTU during the current Operating Month and the previous eleven (11) Operating Months; and third, divide the total number of pounds of pollutant emitted during the twelve (12) Operating Months by the total heat input during the twelve (12) Operating Months. A new 12-Month Rolling Average Emission Rate shall be calculated for each new Operating Month in accordance with the provisions of this Consent Decree. Each 12-Month Rolling Average Emission Rate shall include all emissions of the applicable pollutant that occur during all periods of operation, including startup, shutdown, and Malfunction, except as otherwise provided by Section XV (Force Majeure).

8. A “3-Hour Rolling Average Emission Rate” for a Unit shall be expressed in lb/mmBTU and calculated in accordance with the following procedure: first, sum the total pounds of pollutant emitted from the Unit during the current operating hour and the previous two operating hours; second, sum the total heat input to the Unit in mmBTU during the current operating hour and the previous two operating hours; and third, divide the total number of

pounds of pollutant emitted during the three operating hours by the total heat input during the three operating hours. Each 3-Hour Rolling Average Emission Rate shall include all emissions that occur during all periods within any operating period, including emissions from startup, shutdown, and Malfunction, except as otherwise provided by Section XV (Force Majeure).

9. A “30-Day Rolling Average Emission Rate” for a Unit shall be expressed in lb/mmBTU and calculated in accordance with the following procedure: first, sum the total pounds of pollutant emitted from the applicable Unit during the current Operating Day and the previous twenty-nine (29) Operating Days; second, sum the total heat input to the unit in mmBTU during the current Operating Day and the previous twenty-nine (29) Operating Days; and third, divide the total number of pounds of pollutant emitted during the thirty (30) Operating Days by the total heat input during the thirty (30) Operating Days. A new 30-Day Rolling Average Emission Rate shall be calculated for each new Operating Day. Each 30-Day Rolling Average Emission Rate shall include all emissions that occur during all periods within any Operating Day, including emissions from startup, shutdown, and Malfunction, except as otherwise provided by Section XV (Force Majeure).

10. “Baghouse” means a full-stream (fabric filter) particulate emissions control device.

11. “Boswell” means, for purposes of this Consent Decree, Minnesota Power’s Boswell Energy Center consisting of four coal-fired units designated by Minnesota Power (as reported to the SEC by Minnesota Power) as Boswell Unit 1 (68 net MW), Boswell Unit 2 (68 net MW), Boswell Unit 3 (362 net MW), and Boswell Unit 4 (585 net MW) and located in Cohasset, Minnesota. Boswell Units 1, 2 and 3 currently share a common stack, but have separate SO₂ and NO_x CEMS prior to the common stack. Boswell Unit 4 currently has a

separate stack and separate SO₂ and NO_x CEMS.

12. “Business Day” means a Day that is not Saturday, Sunday or a Federal Holiday. In computing any period of time for submission of a notice or report under this Consent Decree, where the last Day would fall on a Saturday, Sunday, or Federal Holiday, the period shall run until the close of business on the next Business Day.

13. Calendar Year Average Emission Rate for a Unit shall be expressed in lb/mmBTU and calculated by dividing the total number of pounds of pollutant emitted during the calendar year by the total heat input during the calendar year. Each Calendar Year Average Emission Rate shall include all emissions of the applicable pollutant that occur during all periods of operation, including startup, shutdown, and Malfunction, except as otherwise provided by Section XV (Force Majeure).

14. “Clean Air Act,” “Act,” or “CAA” means the federal Clean Air Act, 42 U.S.C. §§ 7401-7671q, and its implementing regulations.

15. “Consent Decree” means this Consent Decree and the Appendices hereto, which are incorporated into the Consent Decree.

16. “Continuous Emissions Monitoring System” or “CEMS” means, for obligations involving the monitoring of nitrogen oxides (“NO_x”) and sulfur dioxide (SO₂) emissions under this Consent Decree, the devices defined in 40 C.F.R. § 72.2 and installed, operated, and maintained as required by 40 C.F.R. Part 75 or, for purposes of Rapids, as required by 40 C.F.R. Part 60 and Minn. R. 7017.1002 - .1170.

17. “Continuous Operation” and “Continuously Operate” mean that when a pollution control technology or combustion control is required to be used at a Unit pursuant to this Consent Decree (including, but not limited to a Baghouse, Dry Sorbent Injection system,

Electrostatic Precipitator, Flue Gas Desulfurization system, Furnace Sorbent Injection system, Low Nitrogen Oxides Burner, Over Fire Air system, Rotating Opposed Fire Air system, Selective Catalytic Reduction device, Selective Non-Catalytic Reduction device, Wet Particulate Scrubber, and/or Wet Venturi/ESP device) it shall be operated at all times such Unit is in operation (except as otherwise provided by Section XV Force Majeure), consistent with the technological limitations, manufacturers' specifications, good engineering and maintenance practices, and good air pollution control practices for minimizing emissions (as defined in 40 C.F.R. § 60.11(d)) for such equipment and the Unit.

18. "Date of Entry" means the date this Consent Decree is approved or signed by the United States District Court Judge.

19. "Date of Lodging" means the date this Consent Decree is filed for lodging with the Clerk of the Court for the United States District Court for the District of Minnesota.

20. "Day" means calendar Day unless otherwise specified in this Consent Decree.

21. "Dry Sorbent Injection" or "DSI" means a process in which a sorbent is injected into the flue gas ductwork downstream of the boiler and upstream of the PM Control Device.

22. "Electrostatic Precipitator" or "ESP" means a control device for removing particulate matter from flue gases by imparting an electric charge to the particles and then attracting them to a metal plate or screen of opposite charge before the flue gases are exhausted to the atmosphere.

23. "Emission Rate" for a given pollutant means the number of pounds of that pollutant emitted per million British thermal units of heat input (lb/mmBTU), calculated in accordance with this Consent Decree.

24. "EPA" means the United States Environmental Protection Agency.

25. “Flue Gas Desulfurization” or “FGD” system means a pollution control device that removes sulfur compounds from a flue gas stream, including an absorber or absorbers utilizing lime, limestone, or a sodium-based slurry, for the reduction of SO₂ emissions. FGD shall not be defined as the use of any Dry Sorbent Injection system, as described above.

26. “Fossil Fuel” means any hydrocarbon fuel, including coal, petroleum coke, petroleum oil, fuel oil, or natural gas.

27. “Furnace Sorbent Injection” or “FSI” means the process that involves injecting dry sorbents into the upper furnace of a boiler to reduce sulfur dioxide (SO₂) emissions by forming solid products that can be captured by particulate control equipment and later removed.

28. A “Heat Input Weighted Average Emission Rate” shall be expressed in lb/mmBTU and calculated in accordance with the following procedure: first, multiply 0.200 times the total heat input to Boswell Unit 1 and 2 for the current day and the previous twenty-nine (29) days; second, multiply 0.060 times the total heat input to Boswell Unit 3 for the current day and the previous twenty-nine (29) days; and third, divide the sum of the first and second steps by the total heat input to Boswell Unit 1, Boswell Unit 2, and Boswell Unit 3 for the current day and the previous twenty-nine (29) days; provided that such twenty-nine (29) days shall not include days during which none of Boswell Unit 1, Boswell Unit 2, or Boswell Unit 3 fires Fossil Fuel. Minnesota Power shall substitute the actual measured emission rates for the 0.200 or 0.060 factors in the equation above for any Unit for which it is practically feasible to obtain a representative measurement of NO_x. A new Heat Input Weighted Average Emission Rate shall be calculated for each new Operating Day. Each Heat Input Weighted Average Emission Rate shall include all emissions that occur during all periods within any Operating Day, including emissions from startup, shutdown, and Malfunction, except as otherwise provided

by Section XV (Force Majeure).

29. “Laskin” means, for purposes of this Consent Decree, Minnesota Power’s Laskin Energy Center consisting of two coal-fired units designated by Minnesota Power (as reported to the SEC by Minnesota Power) as Laskin Unit 1 (47 net MW) and Laskin Unit 2 (50 net MW) and located in Hoyt Lakes, Minnesota. Laskin Unit 1 and Laskin Unit 2 share a common stack with a shared NO_x and SO₂ CEMS located in the common stack.

30. “lb/mmBTU” means one pound per million British thermal units.

31. “Low Nitrogen Oxides Burner,” “Low NO_x Burner,” or “LNB” means commercially available combustion modification technology that minimizes NO_x formation by introducing coal and combusting air into a boiler such that initial combustion occurs in a manner that promotes rapid coal devolatilization in a fuel-rich (i.e. oxygen deficient) environment and introduces additional air to achieve a final fuel-lean (i.e. oxygen rich) environment to complete the combustion processes.

32. “Malfunction” means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not Malfunctions.

33. “MPCA” means the Minnesota Pollution Control Agency and any successor agency or department of MPCA authorized by the State of Minnesota.

34. “Minnesota Power System” means, solely for purposes of this Consent Decree, Minnesota Power’s Boswell Energy Center Units 1 through 4, Laskin Energy Center Units 1 and 2, Taconite Harbor Energy Center Units 1 through 3, and Rapids Energy Center Units 5 and 6.

35. “Minnesota Renewable Energy Standard” or “Minnesota RES” means the

standard set forth in Minnesota Statutes § 216B.1691, Subd. 2a(a).

36. “Month” means a calendar month.

37. “MW” means a megawatt or one million watts.

38. “MWh” means a megawatt hour or one million watt hours.

39. “National Ambient Air Quality Standards” or “NAAQS” means national ambient air quality standards promulgated pursuant to Section 109 of the Act, 42 U.S.C. § 7409.

40. “Natural Gas” means natural gas received directly or indirectly through a connection to an interstate pipeline.

41. “Netting” shall mean the process of determining whether a particular physical change or change in the method of operation of a major stationary source results in a net emissions increase, as that term is defined at 40 C.F.R. § 52.21(b)(3)(i), and/or an applicable State Implementation Plan (“SIP”) and/or other clean air rules administered by MPCA.

42. “Nonattainment NSR” means the new source review program within the meaning of Part D of Title I of the Act, 42 U.S.C. §§ 7501-7515 and 40 C.F.R. Part 51, and corresponding provisions of an applicable SIP, and all rules addressing nonattainment new source review administered by MPCA.

43. “Nitrogen Oxides” or “NO_x” means oxides of nitrogen, measured in accordance with the provisions of this Consent Decree.

44. “NO_x Allowance” means an authorization to emit a specified amount of NO_x that is allocated or issued under an emissions trading or marketable permit program of any kind established under the Clean Air Act or applicable State Implementation Plan; provided, however, that with respect to any such program that first applies to emissions occurring after December 31, 2011, a “NO_x Allowance” shall include a NO_x Allowance created and allocated to a Minnesota

Power System Unit under such program only for control periods starting on or after the fourth anniversary of the Date of Entry of this Consent Decree.

45. “Operational or Ownership Interest” means part or all of Minnesota Power’s legal or equitable operational or ownership interest in any Unit at its Boswell Energy Center, Laskin Energy Center, Taconite Harbor Energy Center and/or Rapids Energy Center.

46. “Operating Day” means any calendar Day on which a Unit fires Fossil Fuel.

47. “Operating Month” means any calendar month during which a Unit fires Fossil Fuel.

48. “Over Fire Air” or “OFA” mean an in-furnace staged combustion control to reduce NO_x emissions.

49. “Parties” means the United States of America on behalf of EPA, the State of Minnesota on behalf of MPCA, and Minnesota Power.

50. “Party” means one of the named Parties.

51. “Particulate Matter” or “PM,” except as used in Paragraph 129 herein, means total filterable particulate matter, measured in accordance with the provisions of this Consent Decree.

52. “Particulate Matter Continuous Emission Monitoring System” or “PM CEMS” means, for obligations involving the monitoring of PM emissions under this Consent Decree, the continuous emissions monitoring systems installed, operated and maintained as described in 40 C.F.R. § 60.49Da(v).

53. “Particulate Matter Control Device” or “PM Control Device” means any device including a Baghouse, ESP, or Wet Particulate Scrubber which reduces emissions of PM.

54. “PM Emission Rate” means the number of pounds of PM emitted per million BTU of heat input (lb/mmBTU).

55. “Prevention of Significant Deterioration” or “PSD” means the new source review program within the meaning of Part C of Title I of the Clean Air Act, 42 U.S.C. §§ 7470-7492 and 40 C.F.R. Part 52, and Minn. R., Chapter 7007 (Permits and Offsets).

56. “Project Dollars” means Minnesota Power’s expenditures and payments incurred or made in carrying out the Environmental Mitigation Projects identified in Section IX and Appendix A of this Consent Decree to the extent that such expenditures or payments both: (a) comply with the requirements set forth in Section IX and Appendix A of this Consent Decree, and (b) constitute Minnesota Power’s direct payments for such projects, or Minnesota Power’s external costs for contractors, vendors, and equipment.

57. “Rapids” or “REC” means, for purposes of this Consent Decree, the two solid fuel-fired cogeneration units at Minnesota Power’s Rapids Energy Center designated by Minnesota Power as Rapids Unit 5 (approximately 175,000 pounds of steam per hour and approximately 13 net MW of electricity) and Rapids Unit 6 (approximately 175,000 pounds of steam per hour and approximately 16 net MW of electricity) and currently co-located with UPM (United Paper Mill) Blandin paper mill in Grand Rapids, Minnesota. Rapids Unit 5 and Rapids Unit 6 share a common stack, but have separate SO₂ and NO_x CEMS installed prior to the common stack.

58. “Refuel” or “Refueled” means the alteration of a Unit such that the altered Unit can no longer combust any fuel (such as coal, petroleum coke, petroleum oil, fuel oil) except Natural Gas, and/or herbaceous crops, trees, agricultural waste, logging or silvicultural waste, untreated wood residue or products, aquatic plant matter or other non-Fossil Fuel approved by EPA and MPCA.

59. “Repower” or “Repowered” means, solely for purposes of this Consent Decree,

replacement of the Unit components such that the Unit is solely able to generate electricity through the use of a combined cycle combustion turbine technology from the combustion of Natural Gas rather than coal or another Fossil Fuel (such as coal, petroleum coke, petroleum oil, fuel oil).

60. “Reroute” means to reroute the flue gas from Boswell Unit 1 and Boswell Unit 2 through an FGD device that treats the flue gas from such Units and Boswell Unit 3.

61. “Retire” means to permanently shut down a Unit and to comply with applicable state and federal requirements for permanently ceasing operation of the Unit, including submitting a request to MPCA to amend the state’s air emission inventory to reflect shutdown, and withdrawing and/or requesting amendment of all applicable permits so as to reflect the permanent shutdown status of such Unit.

62. “Rotating Opposed Fire Air” system or “ROFA©” system by Nalco Mobotec means a process by which air is injected into the furnace via rotating, asymmetrically placed air nozzles designed to generate turbulence and reduce NO_x.

63. “SEC” means the United States Securities and Exchange Commission.

64. “SCR” or “Selective Catalytic Reduction” means an air pollution control device for reducing NO_x emissions in which ammonia (NH₃) is added to the flue gas and then passed through layers of a catalyst material. The ammonia and NO_x in the flue gas stream react on the surface of the catalyst, forming nitrogen (N₂) and water vapor.

65. “SNCR” or “Selective Non-Catalytic Reduction” means an air pollution control process for the reduction of NO_x emissions through the injection of ammonia or urea into the boiler.

66. “SO₂ Allowance” means an authorization to emit a specified amount of SO₂ that

is allocated or issued under an emissions trading or marketable permit program of any kind established under the Clean Air Act or applicable State Implementation Plan; provided, however, that with respect to any such program that first applies to emissions occurring after December 31, 2011, an “SO₂ Allowance” shall include a SO₂ Allowance created and allocated to a Minnesota Power System Unit under such program only for control periods starting on or after the fourth anniversary of the Date of Entry of this Consent Decree.

67. “State” or “State of Minnesota” means the State of Minnesota by its Minnesota Pollution Control Agency (“MPCA”).

68. “Sulfur dioxide” or “SO₂” means oxides of sulfur measured in accordance with the provisions of this Consent Decree.

69. “Super-Compliant Allowance” means a NO_x Allowance or SO₂ Allowance attributable to reductions beyond the requirements of this Consent Decree, as described in Paragraphs 96 and 117.

70. “Surrender” or “Surrender of Allowances” means, for purposes of SO₂ Allowances or NO_x Allowances, permanently surrendering SO₂ Allowances or NO_x Allowances from the accounts administered by EPA and MPCA for all Units in the Minnesota Power System, so that such SO₂ Allowances or NO_x Allowances can never be used thereafter to meet any compliance requirements under the Clean Air Act, or this Consent Decree.

71. “System-Wide Annual Tonnage Limitation” means the limitation, as specified in this Consent Decree, on the number of tons of pollutant (SO₂ or NO_x) that may be emitted from the Boswell, Taconite Harbor, Laskin, and Rapids Energy Centers during the relevant calendar year (i.e., January 1 through December 31), and shall include all emissions of the specified pollutant that occur during all periods of operation, including startup, shutdown, and

Malfunction.

72. “Taconite Harbor” means, for purposes of this Consent Decree, Minnesota Power’s Taconite Harbor Energy Center consisting of three coal-fired units designated by Minnesota Power (as reported to the SEC by Minnesota Power) as Taconite Harbor Unit 1 (79 net MW), Taconite Harbor Unit 2 (76 net MW), and Taconite Harbor Unit 3 (84 net MW) and located in Schroeder, Minnesota. Each of the Taconite Harbor Units have separate stacks and monitor each pollutant separately.

73. “Title V Permit” means the permit required for Defendant’s major sources pursuant to Title V of the Act, 42 U.S.C. §§ 7661-7661e.

74. “Unit” means collectively, the coal pulverizer, stationary equipment that feeds coal to the boiler, the boiler that produces steam for the steam turbine, the steam turbine, the generator, the equipment necessary to operate the generator, steam turbine, and boiler, and all ancillary equipment, including pollution control equipment and systems necessary for production of electricity. Each of Minnesota Power’s energy centers may comprise one or more Units.

75. “Wet Particulate Scrubber” means a control device for removal of particulate matter that relies on direct and irreversible contact of a liquid (droplets, foam, or bubbles) with the particulates in the flue gas to collect and remove the pollutants from the flue gas stream.

76. “Wet Venturi Scrubber” is a type of Wet Particulate Scrubber that uses a gas-atomized spray to atomize the scrubbing liquid and improve gas-liquid contact for removal of PM.

IV. NO_x EMISSION REDUCTIONS AND CONTROLS

A. Boswell Units 1 and 2 NO_x Emission Limits and Controls

77. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall optimize combustion and Continuously Operate the ROFA and SNCR control devices at Boswell Units 1 and 2 such that Boswell Unit 1 and Boswell Unit 2 each achieves and maintains a 30-Day Rolling Average Emission Rate for NO_x no greater than 0.250 lb/mmBTU.

78. By no later than June 30, 2014, and continuing thereafter, Minnesota Power shall optimize combustion and Continuously Operate the ROFA and SNCR control devices at Boswell Units 1 and 2 such that Boswell Unit 1 and Boswell Unit 2 each achieves and maintains a 30-Day Rolling Average Emission Rate for NO_x no greater than 0.200 lb/mmBTU. If Minnesota Power chooses to Reroute Boswell Units 1 and 2 through an FGD device that treats the flue gas from such Units and Boswell Unit 3, Minnesota Power shall continue to Continuously Operate the ROFA and SNCR control devices at such Units and maintain a 30-Day Rolling Average Emission Rate for NO_x no greater than 0.200 lb/mmBTU at each Unit as measured before flue gases from Boswell Units 1 and 2 combine with the flue gases from Boswell Unit 3.

79. If Minnesota Power chooses to Reroute the flue gas from Boswell Units 1 and 2 and Minnesota Power demonstrates to the reasonable satisfaction of EPA and the MPCA that it is practically infeasible to obtain a representative measurement of NO_x emissions for Boswell Units 1 and/or 2 consistent with 40 C.F.R. Part 60, Appendix A, Method 1 and 40 C.F.R. Part 75, Appendix A before the flue gases from Boswell Units 1 and 2 combine with the flue gases from Boswell Unit 3, then Minnesota Power shall continue to Continuously Operate the ROFA and SNCR control devices at such Units, and shall demonstrate that it is in compliance with the 30-

Day Rolling Average Emission Rate for NO_x for Boswell Units 1 and 2 by showing that the combined 30-Day Rolling Average Emission Rate for NO_x for Boswell Unit 1, Boswell Unit 2, and Boswell Unit 3 is no greater than the Heat-Input Weighted Average Emission Rate.

B. Boswell Unit 3 NO_x Emission Limits and Controls

80. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall Continuously Operate the Low NO_x Burners, OFA system and SCR control device at Boswell Unit 3 such that the Unit achieves and maintains a 30-Day Rolling Average Emission Rate for NO_x no greater than 0.060 lb/mmBTU. An SCR control device is still required if Minnesota Power elects to Refuel or Repower Boswell Unit 3 and replaces the boiler. If Minnesota Power chooses to Reroute the flue gas from Boswell Units 1 and 2, Minnesota Power shall continue to Continuously Operate the Low NO_x Burners, OFA system and SCR control device at Boswell Unit 3 such that the Unit achieves and maintains a 30-Day Rolling Average Emission Rate for NO_x no greater than 0.060 lb/mmBTU as measured before flue gases from Boswell Units 1 and 2 combine with the flue gases from Boswell Unit 3.

81. If Minnesota Power chooses to Reroute the flue gas from Boswell Units 1 and 2 and Minnesota Power demonstrates to the reasonable satisfaction of EPA and the MPCA that it is practically infeasible to obtain a representative measurement of NO_x emissions for Boswell Units 3 consistent with 40 C.F.R. Part 60, Appendix A, Method 1 and 40 C.F.R. Part 75, Appendix A before the flue gases from Boswell Units 1 and 2 combine with the flue gases from Boswell Unit 3, then Minnesota Power shall continue to Continuously Operate the Low NO_x Burners, OFA system, and SCR control device at Boswell Unit 3, and shall demonstrate that it is in compliance with the 30-Day Rolling Average Emission Rate for NO_x for Boswell Units 1 and 2 by showing that the combined 30-Day Rolling Average Emission Rate for NO_x for Boswell

Unit 1, Boswell Unit 2, and Boswell Unit 3 is no greater than the Heat-Input Weighted Average Emission Rate.

C. Boswell Unit 4 NO_x Emission Limits and Controls

82. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall Continuously Operate the Low NO_x Burners, OFA system and SNCR control device at Boswell Unit 4 such that this Unit achieves and maintains a 30-Day Rolling Average Emission Rate for NO_x no greater than 0.120 lb/mmBTU.

D. Laskin Units 1 and 2 NO_x Emission Limits and Controls

83. Commencing upon the Date of Entry of the Consent Decree and continuing until the Units are Retired, Refueled, or Repowered, Minnesota Power shall Continuously Operate Low NO_x Burners and OFA systems at each of Laskin Units 1 and 2, such that the Units shall achieve and maintain a combined 30-Day Rolling Average Emission Rate for NO_x no greater than 0.190 lb/mmBTU.

E. Taconite Harbor Units 1 and 2 NO_x Emission Limits and Controls

84. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall Continuously Operate the ROFA systems and SNCR control devices at Taconite Harbor Units 1 and 2 such that Taconite Harbor Unit 1 and Taconite Harbor Unit 2 each achieves and maintains a 30-Day Rolling Average Emission Rate for NO_x no greater than 0.160 lb/mmBTU.

F. Taconite Harbor Unit 3 NO_x Emission Limits and Controls

85. By no later than December 31, 2015, Minnesota Power shall Retire, Refuel or Repower Taconite Harbor Unit 3.

G. Rapids Units 5 and 6 NO_x Emission Limits and Controls

86. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall operate Rapids Units 5 and 6 such that each unit achieves and maintains a 12-Month Rolling Average Emission Rate for NO_x of no greater than 0.370 lb/mmBTU.

H. System-Wide Annual Tonnage Limitations for NO_x

87. In calendar year 2014 and in each calendar year thereafter, Minnesota Power shall not exceed the following System-Wide Annual Tonnage Limitations for NO_x emissions:

Year	System-wide Calendar Year Tonnage Cap (tpy)
2014	8,400
2015	7,500
2016-Forward	6,700

I. Monitoring of NO_x Emissions

88. In determining a 30-Day Rolling Average Emission Rate for NO_x, Minnesota Power shall use a Continuous Emissions Monitoring System (“CEMS”) in accordance with the procedures of 40 C.F.R. Part 75 and 40 C.F.R. Part 60, Appendix F, Procedure 1, except that NO_x emissions data for the 30-Day Rolling Average Emission Rate for NO_x need not be bias adjusted and the missing data substitution procedures of 40 C.F.R. Part 75 shall not apply.

89. In determining a 12-Month Rolling Average Emission Rate for NO_x, for Rapids, Minnesota Power shall use CEMS in accordance with the procedures at 40 C.F.R. Part 60 and Minn. R. 7017.1002 - .1170.

90. For purposes of determining compliance with the System-Wide Annual Tonnage Limitation for NO_x, Minnesota Power shall use CEMS in accordance with the procedures at 40 C.F.R. Part 75, or, for purposes of Rapids, in accordance with 40 C.F.R. Part 60.

J. Use and Surrender of NO_x Allowances

91. Except as may be necessary to comply with Section XIV (Stipulated Penalties), Minnesota Power shall not use NO_x Allowances to comply with any requirement of this Consent Decree, including by claiming compliance with any emission limitation required by this Consent Decree by using, tendering, or otherwise applying NO_x Allowances to offset any excess emissions (i.e., emissions above the limits set forth in this Consent Decree).

92. Except as provided in this Consent Decree, beginning in calendar year 2014 and continuing each calendar year thereafter, Minnesota Power shall not sell, bank, trade, or transfer any NO_x Allowances allocated to the Minnesota Power System for that calendar year.

93. Beginning in calendar year 2014 and continuing each calendar year thereafter, Minnesota Power shall Surrender all NO_x Allowances allocated to Units within the Minnesota Power System for that calendar year (other than those NO_x Allowances that Minnesota Power needs to meet federal and/or state Clean Air Act regulatory requirements for the Minnesota Power System Units).

94. Nothing in this Consent Decree shall prevent Minnesota Power from purchasing or otherwise obtaining NO_x Allowances from another source to the extent otherwise allowed by law.

95. The requirements of this Consent Decree pertaining to Minnesota Power's use and Surrender of NO_x Allowances are permanent injunctions not subject to any termination provision of this Consent Decree.

K. Super-Compliant NO_x Allowances

96. Notwithstanding Paragraphs 92 and 93, in each calendar year beginning in 2014, and continuing thereafter, Minnesota Power may sell, bank, use, trade, or transfer NO_x Allowances made available in each calendar year solely as a result of:

- a. the installation and operation of any NO_x pollution control equipment that is not otherwise required by, or necessary to maintain compliance with, any provision of this Consent Decree, and is not otherwise required by law; or
- b. achievement and maintenance of an Emission Rate below the Calendar Year Average Emission Rate for NO_x equal to the lesser of (i) ninety percent of an applicable 30-Day Rolling Average Emission Rate for NO_x, or (ii) an applicable 12-Month Rolling Average Emission Rate for NO_x, provided that Minnesota Power is also in compliance for that calendar year with all emission limitations for NO_x set forth in this Consent Decree.

Minnesota Power shall timely report the generation of such Super-Compliant NO_x Allowances in accordance with Section XII (Periodic Reporting) of this Consent Decree.

L. Method for Surrender of NO_x Allowances

97. Minnesota Power shall Surrender all NO_x Allowances required to be Surrendered pursuant to Paragraph 93 by April 30 of the immediately following calendar year.

98. For all NO_x Allowances required to be Surrendered, Minnesota Power shall first submit a NO_x Allowance transfer request to EPA's Office of Air and Radiation's Clean Air Markets Division directing the transfer of such NO_x Allowances to the EPA Enforcement Surrender Account or to any other EPA account that EPA may direct in writing. Such NO_x Allowance transfer requests may be made in an electronic manner using the EPA's Clean Air

Markets Division Business System or similar system provided by EPA. As part of submitting these transfer requests, Minnesota Power shall irrevocably authorize the transfer of these NO_x Allowances and identify, by name of account and any applicable serial or other identification numbers or station names, the source and location of the NO_x Allowances being Surrendered.

V. SO₂ EMISSION REDUCTIONS AND CONTROLS

A. Boswell Units 1 and 2 SO₂ Emission Limits and Controls

99. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall operate Boswell Unit 1 and Boswell Unit 2 such that each Unit achieves and maintains a 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.700 lb/mmBTU.

100. By no later than December 31, 2018, Minnesota Power shall Retire, Refuel, Repower, or Reroute Boswell Unit 1 and Boswell Unit 2. If Minnesota Power chooses to Reroute the flue gas from Boswell Units 1 and 2, Minnesota Power shall Continuously Operate an FGD device such that Boswell Units 1, 2, and 3 achieve and maintain a combined 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.030 lb/mmBTU.

B. Boswell Unit 3 SO₂ Emission Limits and Controls

101. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall Continuously Operate an FGD device at Boswell Unit 3 such that the Unit achieves and maintains a 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.030 lb/mmBTU. If Minnesota Power chooses to Reroute the flue gas from Boswell Units 1 and 2, then Boswell Units 1, 2, and 3 shall achieve and maintain a combined 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.030 lb/mmBTU.

C. Boswell Unit 4 SO₂ Emission Limits and Controls

102. Commencing upon the Date of Entry of the Consent Decree and continuing until installation and continuous operation of the new FGD device, Minnesota Power shall Continuously Operate the existing FGD device at Boswell Unit 4 such that the Unit achieves and maintains both (a) a 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.100 lb/mmBTU; and (b) a 12-Month Rolling Average Emission Rate for SO₂ no greater than 0.070 lb/mmBTU. No later than May 31, 2016, Minnesota Power shall Continuously Operate a new FGD device at Boswell Unit 4 such that the Unit achieves and maintains a 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.030 lb/mmBTU.

D. Laskin Units 1 and 2 SO₂ Emission Limits and Controls

103. Commencing upon the Date of Entry of the Consent Decree and continuing until the Units are Retired, Refueled, or Repowered, Minnesota Power shall Continuously Operate Wet Particulate Scrubbers at Laskin Units 1 and 2 such that the Units achieve and maintain a combined 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.200 lb/mmBTU.

E. Taconite Harbor Unit 1 SO₂ Emission Limits and Controls

104. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall Continuously Operate an FSI system at Taconite Harbor Unit 1 so that the Unit achieves and maintains a 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.550 lb/mmBTU. By no later than December 31, 2015, Minnesota Power shall Continuously Operate a DSI and/or an FSI system at Taconite Harbor Unit 1 such that the Unit achieves and maintains a 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.300 lb/mmBTU.

F. Taconite Harbor Unit 2 SO₂ Emission Limits and Controls

105. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall Continuously Operate an FSI system at Taconite Harbor Unit 2 so that the Unit achieves and maintains a 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.450 lb/mmBTU. By no later than December 31, 2015, Minnesota Power shall Continuously Operate a DSI and/or an FSI system at Taconite Harbor Unit 2 such that the Unit achieves and maintains a 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.300 lb/mmBTU.

G. Taconite Harbor Unit 3 SO₂ Emission Limits and Controls

106. Commencing upon the Date of Entry of the Consent Decree and continuing until the Unit is Retired, Refueled, or Repowered, Minnesota Power shall operate Taconite Harbor Unit 3 such that the Unit achieves and maintains a 30-Day Rolling Average Emission Rate for SO₂ no greater than 0.700 lb/mmBTU. By no later than December 31, 2015, Minnesota Power shall Retire, Refuel, or Repower Taconite Harbor Unit 3.

H. Rapids Units 5 and 6 SO₂ Emission Limits and Controls

107. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall operate Rapids Units 5 and 6 such that each unit achieves and maintains a 12-Month Rolling Average Emission Rate for SO₂ of no greater than 0.150 lb/mmBTU.

I. System-Wide Annual Tonnage Limitations for SO₂

108. In calendar year 2014 and in each calendar year thereafter, Minnesota Power shall not exceed the following System-Wide Annual Tonnage Limitations of SO₂ emissions:

Year	System-wide Calendar Year Tonnage Cap (tpy)
2014	11,500
2015	11,000
2016	7,400
2017-2018	7,000
2019-forward	3,000

J. Monitoring of SO₂ Emissions

109. In determining a 30-Day Rolling Average Emission Rate for SO₂, Minnesota Power shall use a Continuous Emissions Monitoring System (CEMS) in accordance with the procedures of 40 C.F.R. Part 75 and 40 C.F.R. Part 60, Appendix F, Procedure 1, except that SO₂ emissions data for the 30-Day Rolling Average Emission Rate for SO₂ need not be bias adjusted and the missing data substitution procedures of 40 C.F.R. Part 75 shall not apply.

110. In determining a 12-Month Rolling Average Emission Rate for SO₂, Minnesota Power shall use a CEMS in accordance with the procedures specified in 40 C.F.R. Part 75 (or, for purposes of Rapids, 40 C.F.R. Part 60) and Minn. R. 7017.1002 - .1170.

111. For purposes of determining compliance with the System-Wide Annual Tonnage Limitation for SO₂, Minnesota Power shall use a CEMS in accordance with the procedures specified in 40 C.F.R. Part 75, or, for purposes of Rapids, in accordance with 40 C.F.R. Part 60.

K. Use and Surrender of SO₂ Allowances

112. Except as may be necessary to comply with Section XIV (Stipulated Penalties), Minnesota Power shall not use SO₂ Allowances to comply with any requirement of this Consent Decree, including by claiming compliance with any emission limitation required by this Consent

Decree by using, tendering, or otherwise applying SO₂ Allowances to offset any excess emissions.

113. Except as provided in this Consent Decree, beginning in calendar year 2014 and continuing each calendar year thereafter, Minnesota Power shall not sell, bank, trade, or transfer any SO₂ Allowances allocated to the Minnesota Power System for that calendar year.

114. Beginning in calendar year 2014 and continuing each calendar year thereafter, Minnesota Power shall Surrender all SO₂ Allowances allocated to Units within the Minnesota Power System for that calendar year (other than those SO₂ Allowances needed to meet federal and/or state Clean Air Act regulatory requirements for the Minnesota Power System Units).

115. Nothing in this Consent Decree shall prevent Minnesota Power from purchasing or otherwise obtaining SO₂ Allowances from another source to the extent otherwise allowed by law.

116. The requirements of this Consent Decree pertaining to Minnesota Power's use and Surrender of SO₂ Allowances are permanent injunctions not subject to any termination provision of this Consent Decree.

L. Super-Compliant SO₂ Allowances

117. Notwithstanding Paragraphs 113 and 114, in each calendar year beginning in 2014, and continuing thereafter, Minnesota Power may sell, bank, use, trade, or transfer SO₂ Allowances made available in that calendar year solely as a result of:

- a. the installation and operation of any SO₂ pollution control that is not otherwise required by, or necessary to maintain compliance with, any provision of this Consent Decree, and is not otherwise required by law, or the installation and operation of SO₂ controls prior to the dates required under this Section V of this

Consent Decree or otherwise required by law; or

- b. achievement and maintenance of an SO₂ Emission Rate below the Calendar Year Average Emission Rate for SO₂ equal to the lesser of (i) ninety percent of an applicable 30-Day Rolling Average Emission Rate for SO₂, or (ii) an applicable 12-Month Rolling Average Emission Rate for SO₂, provided that Minnesota Power is also in compliance for that calendar year with all emission limitations for SO₂ set forth in this Consent Decree.

Minnesota Power shall timely report the generation of such Super-Compliant SO₂ Allowances to EPA and MPCA in accordance with Section XII (Periodic Reporting) of this Consent Decree.

M. Method for Surrender of SO₂ Allowances

118. Minnesota Power shall Surrender all SO₂ Allowances required to be Surrendered pursuant to Paragraph 114 by April 30 of the immediately following calendar year.

119. For all SO₂ Allowances required to be Surrendered, Minnesota Power shall first submit an SO₂ Allowance transfer request to EPA's Office of Air and Radiation's Clean Air Markets Division directing the transfer of such SO₂ Allowances to the EPA Enforcement Surrender Account or to any other EPA account that EPA may direct in writing. Such SO₂ Allowance transfer requests may be made in an electronic manner using the EPA's Clean Air Markets Division Business System or similar system provided by EPA. As part of submitting these transfer requests, Minnesota Power shall irrevocably authorize the transfer of these SO₂ Allowances and identify, by name of account and any applicable serial or other identification numbers or station names, the source and location of the SO₂ Allowances being Surrendered.

VI. PM EMISSION REDUCTIONS AND CONTROLS

A. Optimization of Baghouses and Electrostatic Precipitators

120. By no later than 90 Days after the Date of Entry of this Consent Decree, and continuing thereafter, Minnesota shall Continuously Operate each existing PM Control Device on each Unit in the Minnesota Power System (except the ESP for Boswell Unit 4) to maximize PM emission reductions at all times when each Unit is in operation. By no later than 90 Days after the Date of Entry of this Consent Decree, and continuing until the Baghouse is in operation at Boswell Unit 4 pursuant to Paragraph 123, Minnesota Power shall operate the ESP on the Boswell Unit 4 bypass when the Unit is in operation and venting emissions to the bypass duct. Except as required during correlation testing under 40 C.F.R. Part 60, Appendix B, Performance Specification 11, and Quality Assurance Requirements under Appendix F, Procedure 2, as required by this Consent Decree, Minnesota Power shall, at a minimum, ensure that to the extent practicable: (a) each section of each ESP (except the ESP for Boswell Unit 4) at such Unit is fully energized and each compartment of each Baghouse at such Unit remains operational; (b) the automatic control systems on each Electrostatic Precipitator at such Unit are operated to maximize PM collection efficiency, where applicable; (c) each opening in the casings, ductwork, and expansion joints for each ESP and each Baghouse at such Unit is inspected and repaired during the next planned Unit outage (or unplanned outage of sufficient length) to minimize air leakage; (d) the power levels delivered to each ESP at such Unit are maintained, where applicable, consistent with manufacturers' specifications, the operational design of the Unit, and good engineering practices; (e) the plate-cleaning and discharge-electrode-cleaning systems for each ESP at such Unit are optimized, where applicable, by varying the cycle time, cycle frequency, rapper-vibrator intensity, and number of strikes per cleaning event; and (f) for each

such Unit with one or more Baghouses, a bag leak detection program is developed and implemented to ensure that leaking bags are promptly replaced.

B. Boswell Units 1 and 2 PM Emission Limits and Controls

121. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall Continuously Operate Baghouses at Boswell Units 1 and 2 such that the Units achieve and maintain a combined PM Emission Rate of no greater than 0.015 lb/mmBTU based on a 3-hour average; provided that if Minnesota Power chooses to Reroute the flue gas from Boswell 1 and 2, then Boswell Units 1, 2 and 3 shall achieve and maintain a combined PM Emission Rate of no greater than 0.015 lb/mmBTU based on a 3-hour average.

C. Boswell Unit 3 PM Emission Limits and Controls

122. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall Continuously Operate a Baghouse at Boswell Unit 3 such that the Unit achieves and maintains a PM Emission Rate of no greater than 0.015 lb/mmBTU based on a 3-hour average; provided that if Minnesota Power chooses to Reroute the flue gas from Boswell Units 1 and 2, then Boswell Units 1, 2 and 3 shall achieve and maintain a combined PM Emission Rate of no greater than 0.015 lb/mmBTU based on a 3-hour average.

D. Boswell Unit 4 PM Emission Limits and Controls

123. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall Continuously Operate the Wet Venturi Scrubber, and ESP whenever venting emissions to the bypass duct, at Boswell Unit 4 such that the Unit achieves and maintains a PM Emission Rate of no greater than 0.060 lb/mmBTU based on a 3-hour average. Commencing on May 31, 2016 and continuing thereafter, Minnesota Power shall Continuously Operate a Baghouse at Boswell Unit 4 such that this Unit achieves and maintains a

PM Emission Rate of no greater than 0.015 lb/mmBTU based on a 3-hour average.

E. Laskin Units 1 and 2 PM Emission Limits and Controls

124. Commencing upon the Date of Entry of the Consent Decree and continuing until the Units are Retired, Refueled, or Repowered, Minnesota Power shall Continuously Operate Wet Particulate Scrubbers at Laskin Units 1 and 2 such that the Units achieve and maintain a combined PM Emission Rate of no greater than 0.050 lb/mmBTU based on a 3-hour average.

F. Taconite Harbor Units 1, 2, and 3 PM Emission Limits and Controls

125. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter (or, as to Taconite Harbor Unit 3, until such Unit is Retired, Refueled, or Repowered), Minnesota Power shall Continuously Operate ESP devices at Taconite Harbor Units 1, 2, and 3 such that each Unit achieves and maintains a PM Emission Rate of no greater than 0.030 lb/mmBTU based on 3-hour average.

G. Rapids Units 5 and 6 PM Emission Limits and Controls

126. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall Continuously Operate ESP devices at Rapids Units 5 and 6 such that the Units achieve and maintain a combined PM Emission Rate of no greater than 0.030 lb/mmBTU based on a 3-hour average.

H. Stack Tests to Monitor PM Emissions

127. Commencing in calendar year 2014 and continuing thereafter, Minnesota Power shall conduct stack tests each year on each Unit or Units served by a common stack in the Minnesota Power System to determine compliance with the PM Emission Rates established by this Consent Decree, unless the Unit to be tested is Retired, Refueled, or Repowered by June 30 of the same calendar year. Following the installation and operation of PM Continuous Emissions

Monitoring Systems (“CEMS”) as required by Section VI.I of this Consent Decree, Minnesota Power may seek EPA's approval pursuant to Section XIII (Review and Approval of Submittals) of this Consent Decree to forego filterable PM stack testing and instead demonstrate compliance with an applicable filterable PM Emission Rate using CEMS on a 3-Hour Rolling Average Emission Rate basis.

128. To determine compliance with the filterable PM Emission Rate established in Paragraphs 121 through 126, Minnesota Power shall use EPA Method 5 (filterable portion only) or a PM stack testing method specified in and allowed by applicable Minnesota SIP provision(s) unless EPA approves a request to demonstrate continuous compliance with a filterable PM Emission Rate using PM CEMS under the preceding Paragraph 127. Each test shall consist of three separate runs performed under representative operating conditions not including periods of startup, shutdown, or Malfunction. The sampling time for each run shall be at least 60 minutes and the volume of each run shall be at least 0.85 dry standard cubic meters (30 dry standard cubic feet). Minnesota Power shall calculate the PM Emission Rate from the stack test results in accordance with 40 C.F.R. § 60.8(f). The results of each PM stack test shall be submitted to EPA and MPCA within 60 Days following completion of such test.

129. Commencing in calendar year 2014, and continuing annually thereafter, Minnesota Power shall also conduct a PM stack test for condensable PM on each Unit or Units served by a common stack in the Minnesota Power System using the reference methods and procedures set forth at 40 C.F.R. Part 51, Appendix M, Method 202, unless the Unit is Retired, Refueled, or Repowered by June 30 of the same calendar year. Each test shall consist of three separate runs performed under representative operating conditions not including periods of startup, shutdown, or Malfunction. The sampling time for each run shall be at least 60 minutes

and the volume of each run shall be at least 0.85 dry standard cubic meters (30 dry standard cubic feet). Minnesota Power shall calculate the number of pounds of condensable PM emitted per million BTU of heat input (lb/mmBTU) from the stack test results in accordance with 40 C.F.R. § 60.8(f). The results of the PM stack test conducted pursuant to this Paragraph shall not be used for the purpose of determining compliance with the PM Emission Rates required by this Consent Decree. The results of each PM stack test shall be submitted to EPA and MPCA within 60 Days following completion of such test.

130. The annual performance test requirement imposed on Minnesota Power by Section VI.H of this Consent Decree may be satisfied by stack tests conducted by Minnesota Power as may be required by its permits from the State of Minnesota for any year that such stack tests are required under the permits. Minnesota Power may perform testing every other year, rather than every year, provided that the two most recently completed test results conducted in accordance with the methods and procedures specified in this Consent Decree demonstrate that the PM emissions are equal to or less than 0.015 lb/mmBTU for those Units with an Electrostatic Precipitator and 0.0075 lb/mmBTU for those Units with a Baghouse. Minnesota Power shall perform testing every year, rather than every other year, beginning in the year immediately following any test result demonstrating that the PM emissions are greater than 0.015 lb/mmBTU for those Units with an Electrostatic Precipitator or 0.0075 lb/mmBTU for those Units with a Baghouse.

131. When Minnesota Power submits the application for amendment to its Title V Permit pursuant to Paragraph 209, that application shall include a Compliance Assurance Monitoring (“CAM”) plan, under 40 C.F.R. Part 64, for the PM Emission Rate in Paragraphs 121 through 125. The PM CEMS required under Paragraph 132 may be used in that CAM plan.

I. PM CEMS

132. Minnesota Power shall install, correlate, maintain, and operate PM CEMS on the stack serving Boswell Units 1, 2 and 3 and on the stack serving Boswell Unit 4 as specified below. The PM CEMS shall comprise a continuous particle mass monitor measuring filterable particulate matter concentration, directly or indirectly, on an hourly average basis and a diluent monitor or monitors used to convert the concentration to units expressed in lb/mmBTU. The PM CEMS installed at each stack must be appropriate for the anticipated stack conditions and capable of measuring PM concentrations on an hourly average basis. Minnesota Power shall maintain, in an electronic database, the hourly average emission values of all PM CEMS in lb/mmBTU. Except for periods of monitor Malfunction, maintenance, or repair, Minnesota Power shall operate the PM CEMS at all times when any Unit it serves is operating, including during Unit startup, shutdown, and Malfunction.

133. By no later than September 30, 2014 for the PM CEMS for the stack serving Boswell Units 1, 2, and 3 and by no later than September 30, 2015 for the stack serving Boswell Unit 4, Minnesota Power shall submit to EPA and MPCA for EPA's review and approval after consultation with MPCA pursuant to Section XIII (Review and Approval of Submittals) of this Consent Decree a plan for the installation and correlation of the PM CEMS required by Paragraph 132.

134. By no later than December 31, 2014 for the PM CEMS for the stack serving Boswell Units 1, 2, and 3 and by no later than December 31, 2015 for the stack serving Boswell Unit 4, Minnesota Power shall submit to EPA and MPCA for EPA's review and approval after consultation with MPCA pursuant to Section XIII (Review and Approval of Submittals) of this Consent Decree a proposed Quality Assurance/Quality Control ("QA/QC") protocol that shall be

followed for such PM CEMS. The proposed QA/QC protocol may include a process for streamlined revisions to stay current with regulatory changes (e.g., EPA Performance Standard PS 11) and PM CEMS vendor recommendations.

135. In developing both the plan for installation and correlation of the PM CEMS and the QA/QC protocol, Minnesota Power shall use the criteria set forth in 40 C.F.R. Part 60, Appendix B, Performance Specification 11, and Appendix F, Procedure 2, or equivalent criteria specified in and allowed by applicable Minnesota SIP provision(s). For each Boswell Unit at which Minnesota Power chooses to install, certify, operate, and maintain a PM CEMS under 40 C.F.R. § 63.10010(i) (the Utility MATS Rule), Minnesota Power may, pursuant to 40 C.F.R. § 63.7, seek approval to use Method 5 (at the temperature specified in 40 C.F.R. Part 60, Appendix A-3) for correlation of its CEMS in order to comply with the Utility MATS Rule. If Minnesota Power makes such a request, and EPA's air program office disapproves it or requires the use or submittal of a Method 301 validation (at 40 C.F.R. Part 63, Appendix A), then Minnesota Power may use the correlation method specified in 40 C.F.R. § 63.10010(i) for purposes of correlating the PM CEMS under this Consent Decree. If EPA, after consultation with MPCA, approves the plan described in Paragraph 133 and the QA/QC protocol described in Paragraph 134, Minnesota Power shall thereafter operate the PM CEMS in accordance with the approved plan and QA/QC protocol.

136. By no later than June 30, 2015 for the PM CEMS for the stack serving Boswell Units 1, 2, and 3 and by no later than June 30, 2016 for the PM CEMS for the stack serving Boswell Unit 4, Minnesota Power shall install, correlate (and, for the stack serving Boswell Units 1, 2, and 3, if Minnesota Power chooses Reroute, re-correlate), maintain, and operate each PM CEMS, conduct performance specification tests on the PM CEMS, and demonstrate

compliance with the plan and protocol submitted to and approved by EPA in accordance with Paragraphs 133 and 134. Minnesota Power shall report, pursuant to Section XII (Periodic Reporting), the 3-Hour Rolling Average Emission Rate data recorded by the PM CEMS, in electronic format (Microsoft Excel compatible) to EPA.

137. Stack testing shall be used to determine compliance with the PM Emission Rates established by this Consent Decree, unless EPA approves after consultation with MPCA a request under Paragraph 127, in which case PM CEMS shall be used to demonstrate compliance with an applicable PM Emission Rate on a 3-Hour Rolling Average Emission Rate basis. Data from the PM CEMS shall be used, at a minimum, to monitor emissions on a continuous basis.

138. Nothing in this Consent Decree is intended to, or shall, alter or waive any applicable law (including but not limited to any defenses, entitlements, challenges, or clarifications related to the Credible Evidence Rule, 62 Fed. Reg. 8314 (Feb. 24, 1997)) concerning the use of data for any purpose under the Act.

VII. RETIRE, REFUEL, REPOWER, OR REROUTE OPTION AND FUELS AND RENEWABLE ENERGY

139. Minnesota Power shall provide EPA and MPCA with written notification as per Section XIX of this Consent Decree by no later than December 31, 2014 regarding whether Taconite Harbor Unit 3 and Laskin Units 1 and 2 will be Retired, Refueled, or Repowered. By no later than December 31, 2015, Minnesota Power shall Retire, Refuel, or Repower Taconite Harbor Energy Center Unit 3 and Laskin Energy Center Units 1 and 2. If Minnesota Power elects to Refuel a Laskin Unit or Taconite Harbor Unit 3 to Natural Gas pursuant to this Paragraph, such election shall not prohibit Minnesota Power from adding herbaceous crops, trees, agricultural waste, logging or silvicultural waste, untreated wood residue or products, aquatic

plant matter or other non-Fossil Fuel approved by EPA and MPCA as fuel(s) after such Refueling, provided that Minnesota Power applies for, and obtains, all required permits, including, if applicable, all appropriate permits pursuant to CAA Title I, Parts C and D.

140. Minnesota Power shall provide EPA and MPCA with written notification as per Section XIX of this Consent Decree by no later than December 31, 2016 whether it will Retire, Refuel, Repower, or Reroute Boswell Unit 1 and/or 2. By no later than December 31, 2018, Minnesota Power shall Retire, Refuel, Repower, or Reroute Boswell Units 1 and/or 2. For each Unit, if Retire, Refuel, or Repower is elected, Minnesota Power shall not be required to Reroute the flue gas of such Unit as required by Paragraph 100.

141. If a Unit is Refueled, Repowered, or Rerouted, Minnesota Power must obtain any and all required CAA permit(s) for the Refueled, Repowered, or Rerouted Unit, including but not limited to, if applicable, an appropriate permit pursuant to CAA Title I, Parts C and D. If a Refueled Unit is permitted to combust herbaceous crops, trees, agricultural waste, logging or silvicultural waste, untreated wood residue or products, aquatic plant matter or other non-Fossil Fuel approved by EPA and MPCA, the Refueled Unit shall achieve a PM Emission Rate of 0.015 lb/mmBtu based on a 3-hour average.

142. Nothing herein shall prevent the reuse of any equipment at any other existing Unit or new emissions unit, provided that Minnesota Power applies for, and obtains, all required permits, including, if applicable, all appropriate permits pursuant to CAA Title I, Parts C and D.

143. Commencing upon the Date of Entry of the Consent Decree and continuing thereafter, Minnesota Power shall operate Rapids Units 5 and 6 such that each Unit's 12-Month Percent Heat Input from Coal will not exceed 40.0 percent during each 12-Operating Month period. For purposes of calculating the 12-Month Percent Heat Input from Coal, Minnesota

Power shall calculate the monthly heat input from each of its fuels by multiplying the monthly average heat content of each fuel by the total monthly fuel consumption for that respective fuel. Monthly average heat content will be determined by averaging the results of samples taken during that month.

144. Minnesota Power shall install and operate at least 200 MW (nameplate rating) of renewable wind energy in advance of its obligations under the Minnesota Renewable Energy Standard (RES). The commissioning of Minnesota Power's Bison 2 and Bison 3 Wind Energy Centers, with a total capacity of 210 MW, in December 2012 fulfills the requirements of this Paragraph.

VIII. PROHIBITION ON NETTING CREDITS OR OFFSETS

145. Emission reductions that result from actions to be taken by Minnesota Power after the Date of Entry of this Consent Decree to comply with the requirements of this Consent Decree shall not be considered as a creditable contemporaneous emission decrease for the purpose of obtaining a Netting credit or offset under the Clean Air Act's PSD and Nonattainment NSR programs. Notwithstanding the preceding sentence, and subject to the limitations provided in Paragraph 146, Minnesota Power may treat up to (a) 75 tons of NO_x, 75 tons of SO₂, and 15 tons of PM emission reductions at Boswell Units 3 and 4 as if they were not otherwise required by this Consent Decree for purposes of Netting at the Boswell Units 3 and 4.

146. Use of the Netting credits provided in Paragraph 145 is subject to the following additional restrictions:

- (a) The emission reductions of NO_x, SO₂, and PM Minnesota Power intends to utilize for Netting purposes must be contemporaneous and otherwise creditable within the meaning

of the Act and the applicable SIP, and Minnesota Power must comply with, and be subject to, all requirements and criteria for creating contemporaneous creditable decreases as set forth in 40 C.F.R. § 52.21(b) and the applicable SIP, subject to the limitations of this Section,

(b) Minnesota Power must apply for, and obtain, any required major or minor NSR permits for any project in which emission reductions under Paragraph 145 are used for Netting. Minnesota Power shall provide notice and a copy of its permit application to EPA in accordance with Section XIX (Notices), concurrent with its permit application submission to the relevant permitting authority,

(c) The emission reductions of NO_x, SO₂, and PM that Minnesota Power intends to utilize for Netting shall not be available under this Section if such use would result in an exceedance of a PSD increment, or an interference with “reasonable further progress” toward attainment of a NAAQS in accordance with Part D of Title I of the CAA, and

(d) Minnesota Power must be and remain in full compliance with the provisions of this Consent Decree establishing performance, operational, maintenance, and control technology requirements at Boswell Units 3 and 4, including Emission Rates, System-Wide Annual Tonnage Limitations, and the requirements pertaining to the Surrender of SO₂ Allowances and NO_x Allowances.

147. The limitations on the generation and use of Netting credits and offsets set forth in this Section do not apply to emission reductions achieved by a particular Minnesota Power System Unit that are greater than those required under this Consent Decree for that particular Minnesota Power System Unit. For purposes of this Paragraph, emission reductions from a Minnesota Power System Unit are greater than those required under this Consent Decree if they

result from such Unit's compliance with federally-enforceable emission limits that are more stringent than the limits imposed on the Unit under this Consent Decree and under applicable provisions of the Clean Air Act.

148. Nothing in this Consent Decree is intended to preclude the emission reductions generated under this Consent Decree from being considered by the applicable state regulatory agency or EPA for the purpose of attainment demonstrations submitted pursuant to § 110 of the Act, 42 U.S.C. § 7410, or in determining impacts on National Ambient Air Quality Standards, PSD increment, or air quality related values, including visibility, in a Class I area.

IX. ENVIRONMENTAL MITIGATION PROJECTS

149. Minnesota Power shall implement the Environmental Mitigation Projects ("Projects") described in Appendix A to this Consent Decree in compliance with the approved plans and schedules for such Projects and other terms of this Consent Decree. In implementing the Projects, Minnesota Power shall spend no less than \$4.2 million in Project Dollars. Minnesota Power shall not include its own personnel costs in overseeing the implementation of the Projects as Project Dollars.

150. Minnesota Power shall maintain, and present to EPA and MPCA upon request, all documents to substantiate the Project Dollars expended to implement the Projects described in Appendix A, and shall provide these documents to EPA and MPCA within thirty (30) Days following a request for the documents.

151. All plans and reports prepared by Minnesota Power pursuant to the requirements of this Section IX of the Consent Decree and required to be submitted to EPA and MPCA shall be publicly available from Minnesota Power without charge in paper or electronic format.

152. Minnesota Power shall certify, as part of each plan submitted to EPA for any Project, that Minnesota Power is not otherwise required by law to perform the Project described in the plan, that Minnesota Power is unaware of any other person who is required by law to perform the Project, and that Minnesota Power will not use any Project, or portion thereof, to satisfy any obligations that it may have under other applicable requirements of law, including any applicable renewable or energy efficiency portfolio standards.

153. Minnesota Power shall use good faith efforts to secure as much environmental benefit as possible for the Project Dollars expended, consistent with the applicable requirements and limits of this Consent Decree.

154. If Minnesota Power elects (where such an election is allowed) to undertake a Project by contributing funds to another person or entity that will carry out the Project in lieu of Minnesota Power, but not including Minnesota Power's agents or contractors, that person or instrumentality must, in writing: (a) identify its legal authority for accepting such funding; and (b) identify its legal authority to conduct the Project for which Minnesota Power contributes the funds. Regardless of whether Minnesota Power elects (where such election is allowed) to undertake a Project by itself or to do so by contributing funds to another person or instrumentality that will carry out the Project, Minnesota Power acknowledges that it will receive credit for the expenditure of such funds as Project Dollars only if Minnesota Power demonstrates that the funds have been actually spent by either Minnesota Power or by the person or instrumentality receiving them, and that such expenditures met all requirements of this Consent Decree.

155. Minnesota Power shall comply with the reporting requirements described in Appendix A.

156. Within sixty (60) Days following the completion of each Project required under this Consent Decree (including any applicable periods of demonstration or testing), Minnesota Power shall submit to EPA and MPCA a report that documents the date that the Project was completed, the results achieved by implementing the Project, including the emission reductions or other environmental benefits, and the Project Dollars expended by Minnesota Power in implementing the Project.

X. CIVIL PENALTY

157. Within thirty (30) Days after the Date of Entry of this Consent Decree, Settling Defendant shall pay to the United States and the State of Minnesota a civil penalty in the amount of \$1.4 million.

(a) The United States' portion of the civil penalty shall be paid as follows: Within thirty (30) Days after the Date of Entry of this Consent Decree, Settling Defendant shall pay a civil penalty to the United States in the amount of \$1.2 million paid by Electronic Funds Transfer ("EFT") to the United States Department of Justice, in accordance with current EFT procedures, referencing USAO File Number 2014v00269, DOJ Case Number 90-5-2-1-09683, and the civil action case name and case number of this action. The costs of such EFT shall be Settling Defendant's responsibility. Payment shall be made in accordance with instructions provided to Settling Defendant by the Financial Litigation Unit of the U.S. Attorney's Office for the District of Minnesota. Any funds received after 2:00 p.m. EDT shall be credited on the next Business Day. At the time of payment, Settling Defendant shall provide notice of payment, referencing the USAO File Number, the DOJ Case Number, and the civil action case name and case number, to the

Department of Justice and to EPA in accordance with Section XIX (Notices) of this Consent Decree.

(b) The MPCA portion of the civil penalty shall be paid as follows: Within thirty (30) Days after entry of this Consent Decree, Settling Defendant shall pay to MPCA a civil penalty in the amount of \$200,000 by certified check made payable to the Minnesota Pollution Control Agency and sent to Carl Agerbeck, MPCA Fiscal Services-6th Floor, Minnesota Pollution Control Agency, 520 Lafayette Road, St. Paul, Minnesota 55155-4194.

158. Failure to timely pay the civil penalty shall subject Settling Defendant to interest accruing from the date payment is due until the date payment is made at the rate prescribed by 28 U.S.C. § 1961, and shall render Settling Defendant liable for all charges, costs, fees, and penalties established by law for the benefit of a creditor or of the United States in securing payment.

159. Payments made pursuant to this Section are penalties within the meaning of Section 162(f) of the Internal Revenue Code, 26 U.S.C. § 162(f), and are not tax-deductible expenditures for purposes of federal law.

XI. RESOLUTION OF CLAIMS AGAINST MINNESOTA POWER

160. Civil Claims of the United States and the State of Minnesota Occurring Before the Date of Lodging of this Consent Decree. Entry of this Consent Decree shall resolve all civil claims of the United States and the State of Minnesota against Minnesota Power that arose from any modifications commenced at Minnesota Power's Boswell Units 1 through 4, Laskin Units 1 and 2, Taconite Harbor Units 1 through 3, and Rapids Units 5 and 6, prior to the Date of Lodging

of this Consent Decree, including but not limited to those modifications alleged in the NOV/FOVs issued by EPA to Minnesota Power on August 5, 2008 and March 31, 2011 and the Complaint filed in this civil action, under any or all of: (a) Part C or D of Title I of the Clean Air Act, 42 U.S.C. §§ 7470-7492, 7501-7515, and the implementing PSD and Nonattainment NSR provisions of any Minnesota SIP or the MPCA rules, including but not limited to, all such rule provisions set forth in the Minnesota Rules, Chapter 7007 (Permits and Offsets); (b) the New Source Performance Standards of Section 111 of the Clean Air Act, 42 U.S.C. § 7411, and 40 C.F.R. § 60.14; and (c) Title V of the Clean Air Act, 42 U.S.C. § 7661-7661f, but only to the extent that such Title V claims are based on Minnesota Power's failure to obtain an operating permit that reflects applicable requirements imposed under Section 111 or Part C or D of Title I of the Clean Air Act.

161. This Consent Decree does not apply to any claim(s) of alleged criminal liability.

XII. PERIODIC REPORTING

162. After entry of this Consent Decree, Minnesota Power shall submit to EPA and MPCA a periodic report, within sixty (60) Days after the end of each half of the calendar year (January through June and July through December). The report shall include the following information:

- a. all information necessary to determine compliance with the requirements of the following provisions of this Consent Decree: all applicable 30-Day Rolling Average Emission Rates for NO_x (including information regarding any applicable Heat-Input Weighted Average Emission Rates) and 30-Day Rolling Average Emission Rates for SO₂; all applicable 12-Month Rolling Average Emission Rates

for NO_x and 12-Month Rolling Average Emission Rates for SO₂; all applicable PM Emission Stack Test data; all applicable System-Wide Annual Tonnage Limitations for NO_x and System-Wide Annual Tonnage Limitations for SO₂; the obligation to monitor NO_x, SO₂, and PM emissions; the obligation to optimize PM emission controls; the obligation to limit coal use at Rapids 5 and Rapids 6 as required by Paragraph 143; and the obligation to Surrender NO_x Allowances and SO₂ Allowances;

- b. 3-Hour Rolling Average Emission Rate PM CEMS data as required by Paragraph 132, identifying all periods in excess of applicable PM emission rates, in electronic Microsoft Excel compatible format, and all periods of monitor Malfunction, maintenance, and/or repair as provided in Paragraph 132;
- c. emissions reporting and SO₂ Allowance and NO_x Allowance accounting information necessary to determine Super-Compliant Allowances that Minnesota Power claims to have generated in accordance with Sections IV (NO_x Emission Reductions and Controls) and V (SO₂ Emission Reductions and Controls) through control of emissions beyond the requirements of this Consent Decree;
- d. schedule for the installation or upgrade and commencement of operation of new or upgraded pollution control devices required by this Consent Decree, including the nature and cause of any actual or anticipated delays, and any steps taken by Minnesota Power to mitigate such delay;
- e. all affirmative defenses asserted pursuant to Paragraphs 181 through 183 during the period covered by the periodic report;
- f. an identification of all periods when any pollution control device required by this

- Consent Decree to Continuously Operate was not operating, the reason(s) for the equipment not operating, and the basis for Minnesota Power's compliance or non-compliance with the Continuous Operation requirements of this Consent Decree;
- g. a summary of actions implemented and expenditures (cumulative and in the current reporting period) made pursuant to implementation of the Environmental Mitigation Projects required pursuant to Section IX and Appendix A; and
 - h. an identification of which of Minnesota Power's Units will be Retired, Refueled, or Repowered as required by Paragraphs 139 and 140 of this Consent Decree.

This information in the periodic report shall not replace the need for compliance with the Notice requirements in Section VII of this Consent Decree.

163. In any periodic report submitted pursuant to this Section, Minnesota Power may incorporate by reference information previously submitted under its Title V permitting requirements, provided that Minnesota Power attaches the Title V Permit report (or the pertinent portions of such report) and provides a specific reference to the provisions of the Title V Permit report that are responsive to the information required in the periodic report.

164. In addition to the reports required pursuant to this Section, if Minnesota Power violates or deviates from any requirement of this Consent Decree, Minnesota Power shall submit to EPA and MPCA a report on the violation or deviation within fifteen (15) Business Days after Minnesota Power knew or should have known of the event by exercise of due diligence. In the report, Minnesota Power shall explain the cause or causes of the violation or deviation and any measures taken or to be taken by Minnesota Power to cure the reported violation or deviation or to prevent such violation or deviation in the future. If at any time, the requirements of this Consent Decree are included in Title V Permits, consistent with the requirements for such

inclusion in this Consent Decree, then the submittal to EPA and MPCA of deviation reports required under applicable Title V regulations shall be deemed to satisfy all the requirements of this Paragraph.

165. Each Minnesota Power report required by this Consent Decree shall be signed by Minnesota Power's Responsible Official as defined in Title V of the Clean Air Act, or his or her equivalent or designee of at least the rank of Vice President, and shall contain the following certification:

This information was prepared either by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my evaluation, or the direction and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, I hereby certify under penalty of law that, to the best of my knowledge and belief, this information is true, accurate, and complete. I understand that there are significant penalties for submitting false, inaccurate, or incomplete information to the United States.

XIII. REVIEW AND APPROVAL OF SUBMITTALS

166. Minnesota Power shall submit each plan, report, or other submission required by this Consent Decree to EPA and MPCA whenever such a document is required to be submitted for review or approval by EPA pursuant to this Consent Decree. For any submittal requiring EPA approval under this Consent Decree, EPA may approve the submittal or decline to approve it after consultation with the State of Minnesota and provide written comments explaining the bases for declining such approval as soon as reasonably practicable. Within sixty (60) Days of receiving written comments from EPA, Minnesota Power shall either: (a) revise the submittal consistent with the written comments and provide the revised submittal to EPA and MPCA; or (b) submit the matter for dispute resolution, including the period of informal negotiations, under Section XVI (Dispute Resolution) of this Consent Decree.

167. Upon receipt of EPA's final approval of the submittal, or upon completion of the

submittal pursuant to dispute resolution, Minnesota Power shall implement the approved submittal in accordance with the schedule specified therein, another EPA-approved schedule, or as established through the dispute resolution process.

XIV. STIPULATED PENALTIES

168. For any failure by Minnesota Power to comply with the terms of this Consent Decree, and subject to the provisions of Sections XV (Force Majeure) and XVI (Dispute Resolution) and the other provisions of this Consent Decree, Minnesota Power shall pay to the United States, within thirty (30) Days after receipt of written demand to Minnesota Power by the United States stipulated penalties as follows:

Consent Decree Violation	Stipulated Penalty
a. Failure to pay the civil penalty as required by Section X (Civil Penalty) of this Consent Decree	\$10,000 per Day
b. Failure to comply with any applicable 30-Day Rolling Average Emission Rate	<p>\$2,500 per Day per violation where the violation is less than 5% in excess of the lb/mmBTU limits</p> <p>\$5,000 per Day per violation where the violation is equal to or greater than 5% but less than 10% in excess of the lb/mmBTU limits</p> <p>\$10,000 per Day per violation where the violation is equal to or greater than 10% in excess of the lb/mmBTU limits</p>
c. Failure to comply with any applicable 12-Month Rolling Average Emission Rate for NO _x or SO ₂	<p>\$200 per Day per violation where the violation is less than 5% in excess of the limits set forth in this Consent Decree</p> <p>\$400 per Day per violation where the violation is equal to or greater than 5% but less than</p>

	<p>10% in excess of the limits set forth in this Consent Decree</p> <p>\$800 per Day per violation where the violation is equal to or greater than 10% in excess of the limits set forth in this Consent Decree</p>
d. Failure to comply with an applicable System-Wide Annual Tonnage Limitations	<p>(1) \$5,000 per ton for first 100 tons, \$10,000 per ton for each additional ton above 100 tons, plus (2) at Minnesota Power's option, either the Surrender of NO_x Allowances or SO₂ Allowances in an amount equal to two times the number of tons of NO_x or SO₂ emitted that exceeded the System-Wide Annual Tonnage Limitation, or the payment of \$2,500 per ton for an amount of tons equal to two times the number of tons of NO_x or SO₂ emitted that exceeded the System-Wide Annual Tonnage Limitation</p>
e. Failure to install, commence Continuous Operation, or Continuously Operate a NO _x , SO ₂ , or PM control device as required by this Consent Decree	<p>\$10,000 per Day per violation during the first 30 Days; \$37,500 per Day per violation thereafter</p>
f. Failure to comply with any applicable PM Emission Rate	<p>\$2,500 per Operating Day per violation where the violation is less than 5% in excess of the lb/mmBTU limit</p> <p>\$5,000 per Operating Day per violation where the violation is equal to or greater than 5% but less than 10% in excess of the lb/mmBTU limit</p> <p>\$10,000 per Operating Day per violation where the violation is equal to or greater than 10% in excess of the lb/mmBTU limit</p>
g. Failure to comply with the 40.0 percent limitation on 12-	<p>\$200 per Day where the 12-</p>

<p>Month Percent Heat Input from Coal as required by Paragraph 143</p>	<p>Month Percent Heat Input from Coal is greater than 40.0 percent, but less than 41.0 percent</p> <p>\$900 per Day where the 12-Month Percent Heat Input from Coal is greater than 41.0 percent, but less than 42.0 percent</p> <p>\$2,100 per Day where the 12-Month Percent Heat Input from Coal is greater than 42.0 percent</p>
<p>h. Failure to Repower, Refuel, Retire, or Reroute a Unit as required by this Consent Decree</p>	<p>\$10,000 per Day per violation during the first 30 Days; \$37,500 per Day per violation thereafter</p>
<p>i. Failure to conduct a stack test for PM as required by Section VI of this Consent Decree</p>	<p>\$1,000 per Day per violation</p>
<p>j. Failure to install or operate CEMS as required by this Consent Decree</p>	<p>\$1,000 per Day per violation</p>
<p>k. Failure to apply for any permit required by Section XVII of this Consent Decree</p>	<p>\$1,000 per Day per violation</p>
<p>l. Failure to timely submit, modify, or implement, as approved, the reports, plans, studies, analyses, protocols, or other submittals required by this Consent Decree</p>	<p>\$750 per Day per violation during the first 10 Days; \$1,000 per Day per violation thereafter</p>
<p>m. Failure to Surrender SO₂ Allowances as required by this Consent Decree</p>	<p>\$37,500 per Day, plus \$1,000 per SO₂ Allowance not Surrendered</p>
<p>n. Failure to Surrender NO_x Allowances as required by this Consent Decree</p>	<p>\$37,500 per Day, plus \$1,000 per NO_x Allowance not Surrendered</p>
<p>o. Using, selling, banking, trading, or transferring NO_x Allowances or SO₂ Allowances except as permitted by this Consent Decree</p>	<p>At Minnesota Power's option, either the Surrender of NO_x Allowances or SO₂ Allowances in an amount equal to four (4) times the number of NO_x Allowances or SO₂ Allowances used, sold, banked, traded, or transferred in violation of this</p>

	Consent Decree, or the payment of \$2,500 per ton for an amount of tons equal to four (4) times the number of NO _x Allowances or SO ₂ Allowances used, sold, banked, traded, or transferred in violation of this Consent Decree
p. Failure to optimize the existing ESPs and Baghouses as required by Paragraph 120 of this Consent Decree	\$1,000 per Day per violation
q. Failure to undertake and complete any of the Environmental Mitigation Projects in compliance with Section IX and Appendix A of this Consent Decree	\$1,000 per Day per violation during the first 30 Days; \$5,000 per Day per violation thereafter
r. Any other violation of this Consent Decree	\$1,000 per Day per violation

169. Violations of any limit based on a 30-Day Rolling Average Emission Rate constitutes thirty (30) Days of violation, provided, however, that where such a violation (for the same pollutant and from the same Unit) recurs within periods less than thirty (30) Days, Minnesota Power shall not be obligated to pay a daily stipulated penalty for any Day of the recurrence for which a stipulated penalty has already been paid.

170. Minnesota Power shall not be subject to stipulated penalties for a failure to comply with any 30-Day Rolling Average Emission Rate for NO_x or SO₂ due to a startup or shutdown event provided that (1) Minnesota Power's emissions do not exceed the 30-Day Rolling Average NO_x or SO₂ Emission Rate by more than 0.015 lb/mmBTU, (2) in the next periodic reporting period, Minnesota Power provides EPA with data and calculations to demonstrate a startup or shutdown event occurred and but for the startup or shutdown event, Minnesota Power would have achieved and maintained compliance with the applicable 30-Day Rolling Average Emission Rate for NO_x or SO₂, and (3) Minnesota Power identifies the time period of the event, provides EPA and the MPCA with data regarding the flue gas temperature entering each applicable control device during the startup or shutdown event and provides a brief

description of why such startup/shutdown conditions limited or impeded the operation of applicable pollution control device(s). Minnesota Power may only invoke this provision in relation to five startup or shutdown events per calendar year per Unit during the term of this Consent Decree. For purposes of this Paragraph 170, a startup or shutdown event may not extend more than 72 hours. This provision applies only to the calculation of stipulated penalties, and shall not be included in any permit.

171. Violations of any limit based on a 12-Month Rolling Average Emission Rate or violations of the 12-Month Percent Heat Input from Coal constitutes three hundred sixty-five (365) Days of violation, provided, however, that where such a violation (as to a 12-Month Rolling Average Emission Rate, for the same pollutant and from the same Unit) recurs within periods less than 12 Months, Minnesota Power shall not be obligated to pay a daily stipulated penalty for any Day of the recurrence for which a stipulated penalty has already been paid.

172. Violations of any applicable PM Emission Rate demonstrated by stack test shall be deemed to start on the Day of the stack test demonstrating a violation and continue each Operating Day thereafter until and excluding such Day on which a subsequent stack test conducted pursuant to Paragraph 128 demonstrates compliance with the applicable PM Emission Rate.

173. Where two or more Units share a common stack or monitoring point for NO_x, SO₂, and/or PM, compliance with any and all of the requirements of this Consent Decree will still be determined for each Unit individually. For purposes of determining compliance with this Consent Decree, an emission rate measured at a common stack or monitoring point will be treated as if it were the emission rate for each of the Units contributing emissions. For example, if NO_x emissions measured in the common stack for Laskin 1 and 2 were to exceed 0.190

lb/mmBTU, compliance for Laskin 1 and Laskin 2 would be individually determined by comparing the required rate for each to the single rate measured in the common stack, and Minnesota Power would have violated this Consent Decree twice and would be required to pay stipulated penalties for both an exceedance at Laskin 1 and an exceedance at Laskin 2. Notwithstanding the foregoing, if Minnesota Power demonstrates that a Unit was not operating during an exceedance, then no violation will be found at that Unit for the exceedance.

174. All stipulated penalties shall begin to accrue on the Day after the performance is due or on the Day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases, whichever is applicable. Nothing in this Consent Decree shall prevent the simultaneous accrual of separate stipulated penalties for separate violations of this Consent Decree.

175. Minnesota Power shall pay all stipulated penalties to the United States within thirty (30) Days following receipt of written demand to Minnesota Power from the United States, and shall continue to make such payments every thirty (30) Days thereafter until the violation(s) no longer continues, unless Minnesota Power elects within twenty (20) Days following receipt of written demand to Minnesota Power from the United States to dispute the imposition or accrual of stipulated penalties in accordance with the provisions in Section XVI (Dispute Resolution) of this Consent Decree.

176. Stipulated penalties shall continue to accrue as provided in accordance with Paragraph 173 during any dispute, with interest on accrued stipulated penalties payable and calculated at the rate established by the Secretary of the Treasury, pursuant to 28 U.S.C. § 1961, but need not be paid until the following:

- a. If the dispute is resolved by agreement, or by a decision of the United States

pursuant to Section XVI (Dispute Resolution) of this Consent Decree that is not appealed to the Court, accrued stipulated penalties agreed or determined to be owing, together with accrued interest, shall be paid to the United States within thirty (30) Days following the effective date of the agreement or of the receipt of the United States' decision;

- b. If the dispute is appealed to the Court and the United States prevails in whole or in part, Minnesota Power shall, within sixty (60) Days of receipt of the Court's decision or order, pay all accrued stipulated penalties determined by the Court to be owing, together with interest accrued on such penalties determined by the Court to be owing, except as provided in Subparagraph (c), below;
- c. If the Court's decision is appealed by any Party, Minnesota Power shall, within fifteen (15) Days of receipt of the final appellate court decision, pay all accrued stipulated penalties determined by the appellate court to be owed, together with interest accrued on such stipulated penalties.

177. Notwithstanding any other provision of this Consent Decree, the accrued stipulated penalties agreed by the United States and Minnesota Power, or determined by the United States through Dispute Resolution, to be owed may be less than the stipulated penalty amounts set forth in Paragraph 168.

178. All monetary stipulated penalties shall be paid to the United States in the manner set forth in Section X (Civil Penalty) of this Consent Decree, and all NO_x Allowance Surrender and SO₂ Allowance Surrender stipulated penalties shall comply with the Surrender procedures of Paragraphs 97 - 98 and 118 - 119.

179. If Minnesota Power fails to pay stipulated penalties in compliance with the terms

of this Consent Decree, the United States shall be entitled to collect interest on such penalties owing to the United States, as provided for in 28 U.S.C. § 1961.

180. The stipulated penalties provided for in this Consent Decree shall be in addition to any other rights, remedies, or sanctions available to the United States by reason of Minnesota Power's failure to comply with any requirement of this Consent Decree or applicable law, except that for any violation of the Act for which this Consent Decree provides for payment of a stipulated penalty, Minnesota Power shall be allowed a credit for stipulated penalties paid against any statutory penalties also imposed for such violation.

181. Affirmative Defense as to Stipulated Penalties for Excess Emissions Occurring During Malfunctions: If any of the Units at Minnesota Power's Boswell Energy Center, Laskin Energy Center, or Taconite Harbor, exceed an applicable 30-Day Rolling Average Emission Rate for NO_x or SO₂ set forth in this Consent Decree due to Malfunction, or if any of the Units at Minnesota Power's Boswell Energy Center that have been approved to use PM CEMS for compliance under Paragraph 127 exceed an applicable 3-Hour Rolling Average Emission Rate for PM due to Malfunction, Minnesota Power, bearing the burden of proof, has an affirmative defense to stipulated penalties under this Consent Decree, if Minnesota Power has complied with the reporting requirements of Paragraph 184 and has demonstrated all of the following:

- a. the excess emissions were caused by a sudden, unavoidable breakdown of technology, beyond Minnesota Power's control;
- b. the excess emissions (1) did not stem from any activity or event that could have been foreseen and avoided, or planned for, and (2) could not have been avoided by better operation and maintenance practices in accordance with manufacturers' specifications and good engineering and maintenance practices;

- c. to the maximum extent practicable, the air pollution control equipment and processes were maintained and operated in a manner consistent with good practice for minimizing emissions in accordance with manufacturers' specifications and good engineering and maintenance practices;
- d. repairs were made in an expeditious fashion when Minnesota Power knew or should have known that an applicable 30-Day Rolling Average Emission Rate or 3-Hour Rolling Average Emission Rate was being or would be exceeded. Off-shift labor and overtime must have been utilized, to the extent practicable, to ensure that such repairs were made as expeditiously as practicable;
- e. the amount and duration of the excess emissions (including any bypass) were minimized to the maximum extent practicable during periods of such emissions in accordance with manufacturers' specifications and good engineering and maintenance practices;
- f. all possible steps were taken to minimize the impact of the excess emissions in accordance with approved plans, QA/QC protocols, manufacturers' specifications and recommendations, and good engineering and maintenance practices;
- g. all emission monitoring systems were kept in operation if at all possible in accordance with manufacturers' specifications and good engineering and maintenance practices;
- h. Minnesota Power's actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs, or other relevant evidence;
- i. the excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

- j. Minnesota Power properly and promptly notified EPA and MPCA as required by this Consent Decree.

182. To assert an affirmative defense for exceedance of an applicable 30-Day Rolling Average Emission Rate for NO_x or SO₂ due to Malfunction under Paragraph 181, Minnesota Power shall submit all data to EPA demonstrating the actual emissions for the Day the Malfunction occurs and the 29-Day period following the Day the excess emissions from the Malfunction occurs. To assert an affirmative defense for exceedance of an applicable 3-Hour Rolling Average Emission Rate for PM due to Malfunction under Paragraph 181, Minnesota Power shall submit to EPA all data demonstrating the actual emissions for the 3-hour period during which the excess emissions from Malfunction occurs. In addition to data Minnesota Power is otherwise required to submit under this Consent Decree, Minnesota Power may, if it elects, submit emissions data for the same 30-Day period or 3-hour period, as applicable, but that excludes the excess emissions.

183. If excess emissions occur due to a Malfunction during routine startup and shutdown, then those instances shall be treated as other Malfunctions subject to Paragraph 181.

184. Minnesota Power shall provide notice to EPA in writing of Minnesota Power's intent to assert an affirmative defense for Malfunction under Paragraphs 181 in Minnesota Power's semi-annual periodic reports as required by Paragraph 162. This notice shall be submitted to EPA pursuant to the provisions of Section XIX (Notices). The notice shall contain:

- a. the identity of each stack or other emission point where the excess emissions occurred;
- b. the magnitude of the excess emissions expressed in lb/mmBTU and the operating data and calculations used in determining the magnitude of the excess emissions;

- c. the time and duration or expected duration of the excess emissions;
- d. the identity of the equipment from which the excess emissions emanated;
- e. the nature and suspected cause of the excess emissions;
- f. the steps taken to remedy the Malfunction and the steps taken or planned to prevent the recurrence of the Malfunction;
- g. the steps that were or are being taken to limit the excess emissions; and
- h. if applicable, a list of the steps taken to comply with the permit conditions governing Unit operation during periods of Malfunction.

185. A Malfunction shall not constitute a Force Majeure Event unless the Malfunction meets the definition of a Force Majeure Event, as provided in Section XV (Force Majeure).

186. The affirmative defense provided herein is only an affirmative defense to stipulated penalties for violations of this Consent Decree, and not a defense to any civil or administrative action for injunctive relief.

XV. FORCE MAJEURE

187. For purposes of this Consent Decree, a “Force Majeure Event” shall mean an event that has been or will be caused by circumstances beyond the control of Minnesota Power, its contractors, or any entity controlled by Minnesota Power that delays or prevents compliance with any provision of this Consent Decree or otherwise causes noncompliance with any provision of this Consent Decree despite Minnesota Power’s best efforts to fulfill the obligation. “Best efforts to fulfill the obligation” include using the best efforts to anticipate any potential Force Majeure Event and to address the effects of any such event (a) as it is occurring, and (b) after it has occurred, such that the delay or noncompliance, and any adverse environmental effect of the delay or noncompliance, is minimized to the greatest extent possible.

188. Notice of Force Majeure Events. If any event occurs or has occurred that may delay or prevent compliance with or otherwise cause noncompliance with any obligation under this Consent Decree, as to which Minnesota Power intends to assert a claim of a Force Majeure Event, Minnesota Power shall notify the United States and MPCA in writing as soon as practicable, but in no event later than fourteen (14) Business Days following the date Minnesota Power first knew, or by the exercise of due diligence should have known, that the event caused or may cause such delay or noncompliance. In this notice, Minnesota Power shall reference this Paragraph of this Consent Decree and describe the anticipated length of time that the delay or noncompliance may persist, the cause or causes of the delay or noncompliance, all measures taken or to be taken by Minnesota Power to prevent or minimize the delay or noncompliance, the schedule by which Minnesota Power proposes to implement those measures, and Minnesota Power's rationale for attributing a delay or violation to a Force Majeure Event. Minnesota Power shall adopt all reasonable measures to avoid or minimize such delays or violations. Minnesota Power shall be deemed to know of any circumstance which Minnesota Power, its contractors, or any entity controlled by Minnesota Power knew or should have known.

189. Failure to Give Notice. If Minnesota Power fails to comply with the above notice requirements regarding a Force Majeure Event, the EPA, after consultation with the MPCA, may void Minnesota Power's claim for a Force Majeure Event as to the specific event for which Minnesota Power has failed to comply with such notice requirement.

190. United States' Response. The United States shall notify Minnesota Power in writing regarding Minnesota Power's claim of a Force Majeure Event as soon as reasonably practicable. If the United States after consultation with MPCA agrees that a Force Majeure Event has delayed or prevented, or will delay or prevent, compliance with any provision of this

Consent Decree, or has otherwise caused or will cause noncompliance with any provision of this Consent Decree, the United States and Minnesota Power shall stipulate to an extension of deadline(s) for performance of the affected compliance requirement(s) by a period equal to the delay or period of noncompliance actually caused by the event. In such circumstances, an appropriate modification shall be made pursuant to Section XXIII (Modification) of this Consent Decree.

191. Disagreement. If the United States does not accept Minnesota Power's claim of a Force Majeure Event, or if the United States and Minnesota Power cannot agree on the length of the delay or noncompliance actually caused by the Force Majeure Event, the matter shall be resolved in accordance with Section XVI (Dispute Resolution) of this Consent Decree.

192. Burden of Proof. In any dispute regarding a Force Majeure Event, Minnesota Power shall bear the burden of proving that any delay in performance or any other noncompliance with any requirement of this Consent Decree was caused by or will be caused by a Force Majeure Event. Minnesota Power shall also bear the burden of proving that Minnesota Power gave the notice required by this Section and the burden of proving the anticipated duration and extent of any delay(s) or noncompliance attributable to a Force Majeure Event. An extension of one compliance date based on a particular event may, but will not necessarily, result in an extension of a subsequent compliance date.

193. Events Excluded. Unanticipated or increased costs or expenses associated with the performance of Minnesota Power's obligations under this Consent Decree shall not constitute a Force Majeure Event.

194. Potential Force Majeure Events. The Parties agree that, depending upon the circumstances related to an event and Minnesota Power's response to such circumstances, the

kinds of events listed below are among those that could qualify as Force Majeure Events within the meaning of this Section: construction, labor, or equipment delays; Malfunction of a Unit or emission control device; unanticipated coal supply or pollution control reagent delivery interruptions; acts of God; acts of war or terrorism; and orders by a government official, government agency, other regulatory authority, or a regional transmission organization (e.g. the Midwest Independent System Operator), acting under and authorized by applicable law, that direct Minnesota Power to supply electricity in response to a system-wide (state-wide or regional) emergency (which could include unanticipated required operation to avoid loss of load or unserved load or to preserve the reliability of the bulk power system). Depending upon the circumstances and Minnesota Power's response to such circumstances, failure of a permitting authority or the Minnesota Public Utilities Commission ("MPUC") to issue a necessary permit or order with sufficient time for Minnesota Power to achieve compliance with this Consent Decree may constitute a Force Majeure Event where the failure of the permitting authority or MPUC to act is beyond the control of Minnesota Power and Minnesota Power has taken all steps available to it to obtain the necessary permit (exclusive of submitting the permit application under the MPCA's Expedited Permitting Program), including, but not limited to: timely submitting a complete permit application; responding to requests for additional information by the permitting authority or MPUC in a timely fashion; and accepting lawful permit terms and conditions after expeditiously exhausting any legal rights to appeal terms and conditions imposed by the permitting authority or MPUC.

195. As part of the resolution of any matter submitted to this Court under Section XVI (Dispute Resolution) regarding a claim of Force Majeure, the United States after consultation with MPCA and Minnesota Power by agreement, or this Court by order, may in appropriate

circumstances extend or modify the schedule for completion of work under this Consent Decree to account for the delay in the work that occurred as a result of any delay agreed to by the United States or approved by the Court. Minnesota Power shall be liable for stipulated penalties pursuant to Section XIV (Stipulated Penalties) for its failure thereafter to complete the work in accordance with the extended or modified schedule (provided that Minnesota Power shall not be precluded from making a further claim of a Force Majeure Event with regard to meeting any such extended or modified schedule).

XVI. DISPUTE RESOLUTION

196. The dispute resolution procedure provided by this Section shall be available to resolve all disputes arising under this Consent Decree, provided that the Party invoking such procedure has first made a good faith attempt to resolve the matter with the other Parties.

197. The dispute resolution procedure required herein shall be invoked by one Party giving written notice to the other Parties advising of a dispute pursuant to this Section. The notice shall describe the nature of the dispute and shall state the noticing Party's position with regard to such dispute. The Parties receiving such a notice shall acknowledge receipt of the notice, and the Parties in dispute shall expeditiously schedule a meeting to discuss the dispute informally not later than fourteen (14) Days following receipt of such notice.

198. Disputes submitted to dispute resolution under this Section shall, in the first instance, be the subject of informal negotiations between the Parties. Such period of informal negotiations shall not extend beyond thirty (30) Days from the date of the first meeting between the Parties' representatives unless they agree in writing to shorten or extend this period.

199. In the event that the United States and the State make differing determinations or take differing actions that affect Minnesota Power's rights or obligations under this Consent

Decree, the determination or action of the United States shall control.

200. If the Parties are unable to reach agreement during the informal negotiation period, the United States or the State of Minnesota (as applicable) shall provide Minnesota Power with a written summary of its position regarding the dispute. The written position provided by the United States (following consultation with the State) shall be considered binding unless, within forty-five (45) Days thereafter, Minnesota Power seeks judicial resolution of the dispute by filing a petition with this Court. The United States may submit a response to the petition within forty-five (45) Days of filing.

201. In addition to any other methods set forth in this Section for altering time periods, the time periods set out in this Section may be shortened or lengthened upon motion to the Court of one of the Parties to the dispute, explaining the Party's basis for seeking such a scheduling modification filing.

202. This Court shall not draw any inferences nor establish any presumptions adverse to either Party as a result of invocation of this Section or the Parties' inability to reach agreement.

203. As part of the resolution of any dispute under this Section, in appropriate circumstances the Parties may agree, or this Court may order, an extension or modification of the schedule for the completion of the activities required under this Consent Decree to account for the delay that occurred as a result of dispute resolution. Minnesota Power shall be liable for stipulated penalties pursuant to Section XIV (Stipulated Penalties) for its failure thereafter to complete the work in accordance with the extended or modified schedule, provided that Minnesota Power shall not be precluded from asserting that a Force Majeure Event has caused or may cause a delay in complying with the extended or modified schedule.

204. The Court shall decide all disputes pursuant to applicable principles of law for resolving such disputes. In their initial filings with the Court under Paragraph 200, the Parties shall state their respective positions as to the applicable standard of law for resolving the particular dispute.

XVII. PERMITS

205. Unless expressly stated otherwise in this Consent Decree, in any instance where otherwise applicable law or this Consent Decree requires Minnesota Power to secure a permit to authorize construction or operation of any device, including all preconstruction, construction, and operating permits required under applicable state law, Minnesota Power shall make such application in a timely manner. EPA in consultation with MPCA shall use best efforts to review expeditiously, to the extent applicable, all permit applications submitted by Minnesota Power to meet the requirements of this Consent Decree.

206. Notwithstanding Paragraph 205, nothing in this Consent Decree shall be construed to require Minnesota Power to apply for, amend or obtain (1) a PSD or Nonattainment NSR permit or permit amendment for any physical change in, or any change in the method of operation of, any Minnesota Power System Unit that would give rise to claims resolved by Section XI (Resolution of Claims Against Minnesota Power) of this Consent Decree; or (2) any Title V Permit or other operating permit or permit amendment, or application therefore, related to or arising from any physical change in, or change in the method of operation of, any System Unit that would give rise to claims resolved by Section XI (Resolution of Claims Against Minnesota Power).

207. When permits are required as described in Paragraph 205, Minnesota Power shall complete and submit applications for such permits to the applicable state agency to allow

sufficient time for all legally required processing and review of the permit request, including requests for additional information by the permitting authority. Any failure by Minnesota Power to submit a timely permit application for Minnesota Power System Units shall bar any use by Minnesota Power of Section XV (Force Majeure) of this Consent Decree, where a claim of a Force Majeure Event is based on permitting delays.

208. Notwithstanding the reference to Title V Permits in this Consent Decree, the enforcement of such permits shall be in accordance with their own terms and the Act and its implementing regulations. The Title V Permits shall not be enforceable under this Consent Decree, although any term or limit established by or under this Consent Decree shall be enforceable under this Consent Decree regardless of whether such term has or will become part of a Title V Permit, subject to the terms of Section XXVII (Termination) of this Consent Decree.

209. Within one hundred eighty (180) Days after the Date of Entry of this Consent Decree, Minnesota Power shall modify any applicable Title V Permit application(s), or apply for amendments of its Title V Permits, to include a schedule for the following Unit-specific and system-specific performance, operational, maintenance, and control technology requirements established by this Consent Decree: any applicable (a) Emission Rates, together with their relevant averaging periods, (b) System-Wide Annual Tonnage Limitations, (c) the requirements pertaining to the prohibition on netting credits or offsets, and the Surrender of SO₂ Allowances and NO_x Allowances, (d) requirements related to the Retirement, Refueling, Repowering, or Rerouting of any Unit as required or elected under this Decree, (e) the coal limitations required for Rapids Units 5 and 6 under Paragraph 143, (f) PM Control Device requirements in Paragraph 120, (g) requirements to Continuously Operate pollution control technologies, and to optimize and Continuously Operate combustion controls, (h) the requirements in Paragraph 131, and (i)

monitoring and testing requirements.

210. Within one (1) year after the Date of Entry of this Consent Decree, Minnesota Power shall apply to permanently include the requirements and limitations enumerated in this Consent Decree as federally enforceable requirements in the Title I/Title V permits for the Boswell, Taconite Harbor, Laskin, and Rapids Energy Centers. Each such application shall request that the requirements and limitations enumerated in this Consent Decree become and remain “applicable requirements” as that term is defined in 40 C.F.R. § 70.2 and be marked in the permit as non-expiring Title I conditions. The federally enforceable permits shall require compliance with the following: any applicable (a) Emission Rates, together with their relevant averaging periods, (b) System-Wide Annual Tonnage Limitations, (c) the requirements pertaining to the prohibition on netting credits or offsets, and the Surrender of SO₂ Allowances and NO_x Allowances, (d) requirements related to the Retirement, Refueling, Repowering, or Rerouting of any Unit as required or elected under this Decree, (e) the coal limitations required for Rapids Units 5 and 6 under Paragraph 143, (f) PM Control Device requirements in Paragraph 120, (g) requirements to Continuously Operate pollution control technologies, and to optimize and Continuously Operate combustion controls, (h) the requirements in Paragraph 131, and (i) monitoring and testing requirements.

211. Minnesota Power shall provide the United States with a copy of each application for a federally enforceable permit, as well as a copy of any permit proposed as a result of such application, to allow for timely participation in any public comment opportunity.

212. Prior to termination of this Consent Decree, Minnesota Power shall obtain enforceable provisions in its Title V permits that incorporate the following Unit-specific and/or System-wide performance, operational, maintenance, and control technology requirements

established by this Consent Decree: any applicable (a) Emission Rates, together with their relevant averaging periods, (b) System-Wide Annual Tonnage Limitations, (c) the requirements pertaining to the prohibition on netting credits or offsets, and the Surrender of SO₂ Allowances and NO_x Allowances, (d) requirements related to the Retirement, Refueling, Repowering, or Rerouting of any Unit as required or elected under this Decree, (e) the coal limitations required for Rapids Units 5 and 6 under Paragraph 143, (f) PM Control Device requirements in Paragraph 120, (g) requirements to Continuously Operate pollution control technologies, and to optimize and Continuously Operate combustion controls, (h) the requirements in Paragraph 131, and (i) monitoring and testing requirements.

XVIII. INFORMATION COLLECTION AND RETENTION

213. Any authorized representative of the United States or the State, including, but not limited to their attorneys, contractors, and consultants, upon presentation of credentials, shall have a right of entry upon the premises of a Minnesota Power System Unit at any reasonable time for the purpose of:

- a. monitoring the progress of activities required under this Consent Decree;
- b. verifying any data or information submitted to the United States in accordance with the terms of this Consent Decree;
- c. obtaining samples and, upon request, splits of any samples taken by Minnesota Power or its representatives, contractors, or consultants; and
- d. assessing Minnesota Power's compliance with this Consent Decree.

214. Minnesota Power shall retain, and instruct its contractors and agents to preserve, all non-identical copies of all records and documents (including records and documents in electronic form) that are now in its or its contractors' or agents' possession or control, and that

directly relate to Minnesota Power's performance of its obligations under this Consent Decree for the following periods: (a) until December 31, 2024 for records concerning physical or operational changes undertaken in accordance with Section IV (NO_x Emission Reductions and Controls), Section V (SO₂ Emission Reductions and Controls), and Section VI (PM Emission Reductions and Controls); and (b) until December 31, 2022 for all other records. This record retention requirement shall apply regardless of any corporate document retention policy to the contrary.

215. All information and documents submitted by Minnesota Power pursuant to this Consent Decree shall be subject to any requests under applicable law providing public disclosure of documents unless (a) the information and documents are subject to legal privileges or protection, or (b) Minnesota Power claims and substantiates in accordance with 40 C.F.R. Part 2 that the information and documents contain confidential business information.

216. Nothing in this Consent Decree shall limit the authority of EPA to conduct tests and inspections at the Minnesota Power System Units under Section 114 of the Act, 42 U.S.C. § 7414, or any other applicable federal laws, regulations, or permits

XIX. NOTICES

217. Unless otherwise provided herein, whenever notifications, submissions, or communications are required by this Consent Decree, they shall be made in writing and addressed as follows:

As to the United States of America:
(if by mail service)
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, DC 20044-7611
DJ# 90-5-2-1-09683

(if by commercial delivery service)
Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
ENRD Mailroom, Room 2121
601 D Street, NW
Washington, DC 20004
DJ# 90-5-2-1-09683

and

(if by mail service)
Director, Air Enforcement Division
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Mail Code 2242A
1200 Pennsylvania Avenue, NW
Washington, DC 20460

(if by commercial delivery service)
Director, Air Enforcement Division
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Ariel Rios South Building, Room 1119
1200 Pennsylvania Avenue, NW
Washington, DC 20004

and

(by mail or commercial delivery service)
Director, Air Division
U.S. Environmental Protection Agency, Region 5
77 W. Jackson Blvd. (AE-17J)
Chicago, IL 60604

As to the MPCA:

(if by mail service or commercial delivery service)
Steve Palzkill
Pollution Control Specialist
Air Quality Compliance & Enforcement
Minnesota Pollution Control Agency
525 Lake Avenue South, Suite 400
Duluth, MN 55802

As to MINNESOTA POWER:

Minnesota Power
Attn: Vice President, Generation
30 W. Superior St.
Duluth, MN 55802

and

Minnesota Power
Attn: General Counsel
30 W. Superior St.
Duluth, MN 55802

218. All notifications, communications, or submissions made pursuant to this Section shall be sent either by: (a) overnight mail or overnight delivery service with signature required for delivery, or (b) certified or registered mail, return receipt requested. All notifications, communications, and transmissions sent by overnight, certified, or registered mail shall be deemed submitted on the date they are postmarked, or, if sent by overnight delivery service, they shall be deemed submitted on the date they are delivered to the delivery service.

219. Any Party may change its notice recipient or the address for providing notices to it by serving the other Parties with a notice setting forth such new notice recipient or address.

220. Upon future written agreement of the sending and receiving Parties, notifications, communications, or submissions required under this Consent Decree may be submitted electronically in lieu of by mail or commercial delivery service. The Parties will determine the procedures for electronic submittal at that time.

XX. SALES OR TRANSFERS OF OPERATIONAL OR OWNERSHIP INTERESTS

221. If Minnesota Power proposes to sell or transfer an Operational or Ownership Interest in its Boswell Energy Center, Laskin Energy Center, Taconite Harbor, and Rapids

Energy Center to an entity unrelated to Minnesota Power (a “Third Party Purchaser”), Minnesota Power shall advise the Third Party Purchaser in writing of the existence of this Consent Decree prior to such sale or transfer, and shall send a copy of such written notification to the United States and MPCA pursuant to Section XIX (Notices) of this Consent Decree at least sixty (60) Days before such proposed sale or transfer.

222. No sale or transfer of an Operational or Ownership Interest, whether in compliance with the procedures of this Section or otherwise, shall relieve Minnesota Power of its obligation to ensure that the terms of this Consent Decree are implemented, unless (1) the transferee agrees to undertake all of the obligations required by this Consent Decree that may be applicable to the transferred or purchased Operational or Ownership Interests, and to be substituted for Minnesota Power as a Party under the Decree pursuant to Section XXIII (Modification) as to the applicable requirements of this Consent Decree and thus be bound thereby, and (2) the United States after consultation with MPCA consents to relieve Minnesota Power of such obligations. The United States may refuse to approve the substitution of the transferee for Minnesota Power if it determines that the proposed transferee does not possess the requisite technical abilities or financial means to comply with the applicable Consent Decree requirements. Minnesota Power shall provide the United States and MPCA with notice of the date of the planned sale or transfer of an Operational or Ownership Interest before such sale or transfer occurs, and shall provide the United States and MPCA a copy of any written agreement to transfer an Operation or Ownership Interest prior to or within 30 Days after such transfer, in accordance with Section XX (Notices).

223. This Consent Decree shall not be construed to impede the transfer of any Operational or Ownership Interests between Minnesota Power and any Third Party Purchaser so

long as the requirements of this Consent Decree are met. This Consent Decree shall not be construed to prohibit a contractual allocation as between Minnesota Power and any third party purchaser of Operational or Ownership Interests of the burdens of compliance with this Consent Decree. Any transfer of an Operational or Ownership Interest in Minnesota Power's Boswell Energy Center, Laskin Energy Center, Taconite Harbor, or Rapids Energy Center without complying with this Section constitutes a violation of this Consent Decree.

224. Minnesota Power may not assign, and may not be released from, any obligation under this Consent Decree that is not specific to the purchased or transferred Operational or Ownership Interests, including the obligations set forth in Sections IX (Environmental Mitigation Projects) and X (Civil Penalty).

225. Paragraphs 221 through 224 of this Consent Decree do not apply if an Operational or Ownership Interest is sold or transferred solely as collateral security in order to consummate a financing arrangement (not including a sale-leaseback), so long as Minnesota Power: (a) remains the operator (as that term is used and interpreted under the Clean Air Act) of the subject Unit(s); (b) remains subject to and liable for all obligations and liabilities of this Consent Decree; and (c) supplies EPA and MPCA with the following certification within thirty (30) Days of the sale or transfer:

“Certification of Change in Ownership Interest Solely for Purpose of Consummating Financing.

We, the Chief Executive Officer and General Counsel of ALLETE, Inc. (“Minnesota Power”), hereby jointly certify under Title 18 U.S.C. Section 1001, on our own behalf and on behalf of Minnesota Power, that any change in Minnesota Power's Ownership Interest in any Unit that is caused by the sale or transfer as collateral security of such Ownership Interest in such Unit(s) pursuant to the financing agreement consummated on [insert applicable date] between Minnesota Power and [insert applicable entity]: a) is made solely for the purpose of providing collateral security in order to consummate a financing arrangement; b) does not impair Minnesota Power's ability, legally or otherwise, to comply

timely with all terms and provisions of the Consent Decree entered in *United States v. ALLETE, Inc., et al.*, Civil Action _____; c) does not affect Minnesota Power's operational control of any Unit covered by that Consent Decree in a manner that is inconsistent with Minnesota Power's performance of its obligations under the Consent Decree; and d) in no way affects the status of Minnesota Power's obligations or liabilities under that Consent Decree."

XXI. EFFECTIVE DATE

226. The effective date of this Consent Decree shall be the Date of Entry.

XXII. RETENTION OF JURISDICTION

227. The Court shall retain jurisdiction of this case after entry of this Consent Decree to enforce compliance with the terms and conditions of this Consent Decree and to take any action necessary or appropriate for the interpretation, construction, execution, or modification of the Consent Decree, or for adjudication of disputes. During the term of this Consent Decree, any Party to this Consent Decree may apply to the Court for any relief necessary to construe or effectuate this Consent Decree.

XXIII. MODIFICATION

228. The terms of this Consent Decree may be modified only by a subsequent written agreement signed by the Parties. Where the modification constitutes a material change to any term of this Consent Decree, it shall be effective only upon approval by the Court.

XXIV. GENERAL PROVISIONS

229. When this Consent Decree specifies that Minnesota Power shall achieve and maintain a 30-Day Rolling Average Emission Rate, the Parties expressly recognize that compliance with such 30-Day Rolling Average Emission Rate shall commence immediately upon the date specified, and that compliance as of such specified date (e.g., December 30) shall be determined based on data from that date and the 29 prior Unit Operating Days (e.g.,

December 1-29).

230. When this Consent Decree specifies (a) that Minnesota Power shall achieve and maintain a 12-Month Rolling Average Emission Rate by a certain compliance date or (b) that Minnesota Power shall operate a Rapids Unit to achieve a specified 12-Month Percent Heat Input from Coal by a certain compliance date, then the Month containing that date if that date is the first Day of the Month, or if that date is not the first Day of the Month then the next complete Month, shall be the first Month used in the calculation of the specified 12-Month limitation. For example, if the specified 12-Month Rolling Average Emission Rate is to be achieved starting January 1, 2013, then January 2013 is the first Month used in the calculation of the first applicable 12-Month Rolling Average Emission Rate, such that the first complete 12-Month Rolling Average Emission Rate period would, provided that the Unit fires Fossil Fuel in each Month, include January 2013 through December 2013.

231. This Consent Decree is not a permit. Compliance with the terms of this Consent Decree does not guarantee compliance with all applicable federal, state, or local laws or regulations. The Emission Rates and removal efficiencies set forth herein do not relieve Minnesota Power from any obligation to comply with other state and federal requirements under the Clean Air Act. In any subsequent administrative or judicial action initiated by the United States for injunctive relief or civil penalties relating to any of the facilities in the Minnesota Power System as covered by this Consent Decree, Minnesota Power shall not assert any defense or claim based upon principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, or claim splitting, or any other defense based upon the contention that the claims raised by the United States in the subsequent proceeding were brought, or should have been brought, in the instant case; provided, however, that nothing in this Paragraph is intended to

affect the validity of Section XI (Resolution of Claims Against Minnesota Power).

232. Nothing in this Consent Decree shall relieve Minnesota Power of its obligation to comply with all applicable federal, state, and local laws and regulations, including, but not limited to, the Clean Water Act and the National Pollutant Discharge Elimination System (NPDES) implementing regulations, National Ambient Air Quality Standards, the National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units (Utility MACT), and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial Commercial-Institutional Steam Generating Units (Utility NSPS). Nothing in this Consent Decree shall be construed to provide any relief from the emission limits or deadlines for the installation of pollution controls or the implementation of other pollution control-related measures specified in these regulations.

233. Subject to the provisions in Section XI (Resolution of Claims Against Minnesota Power), Section XVI (Dispute Resolution), and XIV (Stipulated Penalties), nothing contained in this Consent Decree shall be construed to prevent or limit the rights of the United States or MPCA to obtain penalties or injunctive relief under the Act or other federal, state, or local statutes, regulations, or permits.

234. Each limit and/or other requirement established by or under this Consent Decree is a separate, independent requirement.

235. Performance standards, emissions limits, and other quantitative standards set by or under this Consent Decree must be met to the number of significant digits in which the standard or limit is expressed. For example, an Emission Rate of 0.100 is not met if the actual Emission Rate is 0.101. Minnesota Power shall round the fourth significant digit to the nearest third significant digit, or the third significant digit to the nearest second significant digit,

depending upon whether the limit is expressed to three or two significant digits. For example, if an actual Emission Rate is 0.1004, that shall be reported as 0.100, and shall be in compliance with an Emission Rate of 0.100, and if an actual Emission Rate is 0.1005, that shall be reported as 0.101, and shall not be in compliance with an Emission Rate of 0.100. Minnesota Power shall report data to the number of significant digits in which the standard or limit is expressed.

236. This Consent Decree does not limit, enlarge, or affect the rights of any Party to this Consent Decree as against any third parties.

237. This Consent Decree constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Consent Decree, and supercedes all prior agreements and understandings among the Parties related to the subject matter herein. No document, representation, inducement, agreement, understanding, or promise constitutes any part of this Consent Decree or the settlement it represents, nor shall they be used in construing the terms of this Consent Decree.

238. Each Party to this action shall bear its own costs and attorneys' fees.

XXV. SIGNATORIES AND SERVICE

239. Each undersigned representative of Minnesota Power, the State of Minnesota, and the Assistant Attorney General for the Environment and Natural Resources Division of the United States Department of Justice, certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind to this document the Party he or she represents.

240. This Consent Decree may be signed in counterparts, and such counterpart signature pages shall be given full force and effect.

241. Each Party hereby agrees to accept service of process by mail with respect to all

matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons.

242. Unless otherwise ordered by the Court, the United States agrees that Minnesota Power will not be required to file any answer or other pleading responsive to the Complaint in this matter until and unless the Court expressly declines to enter this Consent Decree, in which case Minnesota Power shall have no less than thirty (30) Days after receiving notice of such express declination to file an answer or other pleading in response to the Complaint.

XXVI. PUBLIC COMMENT

243. The Parties agree and acknowledge that final approval by the United States and entry of this Consent Decree is subject to the procedures of 28 C.F.R. § 50.7, which provides for notice of the lodging of this Consent Decree in the Federal Register, an opportunity for public comment, and the right of the United States to withdraw or withhold consent if the comments disclose facts or considerations which indicate that this Consent Decree is inappropriate, improper, or inadequate. Minnesota Power shall not oppose entry of this Consent Decree by this Court or challenge any provision of this Consent Decree unless the United States has notified Minnesota Power, in writing, that the United States no longer supports entry of this Consent Decree.

XXVII. TERMINATION

244. Once Minnesota Power has:
- a. completed the requirements of Sections IV (NO_x Emission Reductions and Controls), V (SO₂ Emission Reductions and Controls), VI (PM Emission

Reductions and Controls), VII (Retire, Refuel, Repower, or Reroute Option and Fuels and Renewable Energy), and IX (Environmental Mitigation Projects);

- b. maintained substantial compliance with this Consent Decree, including continuous operation of all pollution controls required by this Consent Decree, for a period of at least 24 months;
- c. paid the civil penalty and any stipulated penalties for which demand has been made under Paragraph 168 as required by this Consent Decree;
- d. included the requirements and limitations enumerated in this Consent Decree in federally enforceable permits, as described in Paragraph 212, such that the requirements and limitations enumerated in this Consent Decree become and remain “applicable requirements” as that term is defined in 40 C.F.R. Part 70.2; and
- e. certified that the date of Minnesota Power’s Request for Termination is later than December 31, 2020,

Minnesota Power may serve upon the United States and the State of Minnesota a Request for Termination, stating that Defendant has satisfied those requirements, together with all necessary supporting documentation.

245. Following receipt by the United States and the State of Minnesota of Defendant’s Request for Termination, the Parties shall confer informally concerning the Request and any disagreement that the Parties may have as to whether the Defendant has satisfactorily complied with the requirements for termination of this Consent Decree. If the United States, after consultation with the State of Minnesota, agrees that the Decree may be terminated, the Parties shall submit, for the Court’s approval, a joint stipulation terminating the Decree.

246. If the United States, after consultation with the State of Minnesota, does not agree that the Decree may be terminated, Defendant may invoke Dispute Resolution under Section XVI of this Decree. However, Defendant shall not seek Dispute Resolution of any dispute regarding termination, under Paragraph 197 of Section XVI, until 60 days after service of its Request for Termination or receipt of an adverse decision from the United States and the State of Minnesota, whichever is earlier.

XXVIII. FINAL JUDGMENT

247. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment regarding the Parties.

Signature Page for *United States of America and the State of Minnesota v. ALLETE, Inc., d/b/a Minnesota Power* Consent Decree

FOR THE UNITED STATES DEPARTMENT OF JUSTICE:

s/ Sam Hirsch
SAM HIRSCH
Acting Assistant Attorney General
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s/ David Roskam
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Signature Page for *United States of America and the State of Minnesota v. ALLETE, Inc., d/b/a Minnesota Power* Consent Decree

FOR THE UNITED STATES DEPARTMENT OF JUSTICE:

s/ Andrew M. Luger

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United States Attorney

District of Minnesota

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FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

s/ Cynthia Giles
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Assistant Administrator
Office of Enforcement and
Compliance Assurance
United States Environmental
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s/ Phillip A. Brooks
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FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

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SUSAN HEDMAN
Regional Administrator
United States Environmental
Protection Agency, Region 5

s/ Cynthia N. Kawakami
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FOR THE STATE OF MINNESOTA:

s/ John Linc Stine
JOHN LINC STINE
Commissioner
Minnesota Pollution Control Agency

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FOR ALLETE, INC. D/B/A MINNESOTA POWER:

By: s/ Alan R. Hodnik
Alan R. Hodnik
Chief Executive Officer

APPENDIX A
ENVIRONMENTAL MITIGATION PROJECTS

Minnesota Power shall spend at least \$4,200,000 implementing approved Environmental Mitigation Projects (“Project” or “Projects”) as described below, and shall comply with the requirements of this Appendix and with Section IX of the Consent Decree (Environmental Mitigation Projects) to ensure that the environmental benefits from those Environmental Mitigation Projects described below that it implements are achieved. Nothing in the Consent Decree or this Appendix shall require Minnesota Power to spend any more than a total of \$4,200,000 on Environmental Mitigation Projects.

I. Overall Schedule and Budget for Environmental Mitigation Projects

- A. Within one hundred twenty (120) days of the Date of Entry, unless otherwise specified by this Appendix, Minnesota Power shall (1) submit proposed plans (“Project Plans”) for the Projects specified in Sections II and III to EPA for review and approval pursuant to Section XIII of the Consent Decree (Review and Approval of Submittals) and in accordance with the deadlines established in this Appendix, and (2) select additional Projects to fund and implement from those presented in Sections IV through VII of this Appendix and submit proposed Project Plans for those projects to EPA for review and approval pursuant to Section XIII of the Consent Decree (Review and Approval of Submittals) and in accordance with the deadlines established in this Appendix. The Projects for which Project Plans are submitted must total at least \$4 million in Project Dollars. EPA reserves the right to disapprove any Project should EPA determine, after an analysis of Minnesota Power’s Project Plan and the associated potential environmental impacts that the Project is not consistent with the Consent Decree’s objective to achieve substantial environmental benefits for the Project Dollars expended. If Minnesota Power opts not to submit a Project Plan for a Project described in Sections IV through VII of this Appendix, Minnesota Power will not have any obligations for such Project pursuant to the Consent Decree, including performance, reporting, or closure requirements for that Project, provided that Minnesota Power is otherwise in compliance with the Environmental Mitigation Project requirements of the Consent Decree. Minnesota Power is not required to complete a Project Plan for the Voyageurs National Park Restoration Project described at Section VIII of this Appendix.
- B. Minnesota Power may, at its election, consolidate the Project Plans required by this Appendix into one or more Project Plans.
- C. Unless otherwise specified by this Appendix, Minnesota Power may, at its election, spread its payments for Environmental Mitigation Projects over the five-year period commencing upon approval of each Project Plan. Minnesota Power may also accelerate its payments to better effectuate a Project Plan, but Minnesota Power shall not be entitled to any reduction in the nominal amount of the required payments by virtue of the early expenditures. Any funds designated for a specific

Project that are left unspent, or are projected to be left unspent, at the Project's completion may be redirected by Minnesota Power, after consultation with and approval by EPA, to one or more of the other Projects.

- D. All proposed Project Plans shall include the following:
1. A plan for implementing the Project;
 2. A summary-level budget for the Project;
 3. A time line for implementation of the Project; and
 4. A description of the anticipated environmental benefits of the Project including an estimate of emission reductions (e.g., SO₂, NO_x, PM, mercury, CO₂) expected to be realized.
- E. Upon approval by EPA of the Project Plan(s) required by this Appendix, Minnesota Power shall complete the approved Projects according to the approved Project Plan(s). Nothing in the Consent Decree shall be interpreted to prohibit Minnesota Power or any third party from completing the Projects ahead of schedule.
- F. Commencing with its first progress report due pursuant to Section XII (Periodic Reporting) of the Consent Decree, and continuing semi-annually thereafter until completion of the Projects, Minnesota Power will include in the progress report information describing the progress of each Project and the Project Dollars expended on each Project to date.
- G. In accordance with the requirements of Paragraph 156, within sixty (60) days following the completion of each Project, Minnesota Power shall submit to the United States for approval of Project closure (with a courtesy copy to MPCA), a report that documents:
1. The date the Project was completed;
 2. The results of implementation of the Project, including the estimated emission reductions or other environmental benefits achieved; and
 3. The Project Dollars incurred by Minnesota Power in implementing the Project.
- H. If EPA concludes based on the Project completion report or subsequent information provided by Minnesota Power that a Project has been performed and completed in accordance with the Consent Decree, then EPA will approve completion of the Project for purposes of the Consent Decree.
- I. The Parties recognize that implementation of the Projects in this Appendix may require action by third parties, such as non-profit organizations, other non-government entities, and state or local government entities. If Minnesota Power is unable to complete an approved Project in accordance with this Appendix and the approved Project Plan due to such third party's failure to fulfill its obligations

under the Project Plan, and that failure is not caused by Minnesota Power and is beyond the control of Minnesota Power, despite Minnesota Power's best efforts to fulfill its obligations regarding the Project as set out in the Consent Decree, this Appendix, and any approved Project Plan, then EPA and Minnesota Power may agree to (1) allow Minnesota Power and the third party(ies) to amend the Project Plan as appropriate to successfully complete the Project, or (2) cancel the Project and redirect any unspent Project Dollars for the Project to one or more of the Projects listed in Sections II through VII below.

II. Solar Photovoltaic Installation Project on Fond du Lac Tribal Land - \$2,000,000

- A. Within one hundred eighty (180) days from the Date of Entry of the Consent Decree, Minnesota Power shall submit a Project Plan to EPA for review and approval for the contribution of \$2 million of Project Dollars toward the development of a photovoltaic solar system ("System") to benefit the Fond du Lac Band of Lake Superior Chippewa ("Fond du Lac Band" or "the Band"). Minnesota Power shall seek to develop a System with at least 1.0 megawatt (MW_{DC}) of installed capacity, a size which would require that the Band pay for costs in excess of Minnesota Power's \$2 million Project Dollars. If the Band refuses to pay such costs, MP may submit to EPA an alternative System Project Plan for approval. In no case shall MP be obligated to contribute greater than \$2 million in Project Dollars.
- B. Within one hundred eighty (180) days from the Date of Entry of the Consent Decree, Minnesota Power shall enter into a binding agreement with the Fond du Lac Band regarding the development of a solar photovoltaic system under the project requirements herein.
1. Minnesota Power, at its discretion, may be the developer of the Project or may contribute toward a System to be developed by the Band. Regardless of who is the developer of the System, Minnesota Power shall ensure the System is constructed in accordance with this Appendix.
 2. Minnesota Power shall provide \$2 million in Project Dollars for the development of the System.
 3. As part of its agreement with the Band, Minnesota Power shall require that the Band create and maintain an escrow account or alternative funding mechanism in accordance with Section E created solely for purposes of maintaining the performance of the System over the operational life of the project (i.e. 25 years).
 4. Minnesota Power shall work with the Band to have in place all required agreements (e.g. power purchase agreements, net metering) necessary for the full operation and interconnection of the System at the time of System commissioning.

5. If Minnesota Power is the Project developer, Minnesota Power (in coordination with the Band) shall use best efforts to site the System on a brownfield or reclaimed industrial and/or commercial site.
6. If Minnesota Power is the Project developer, Minnesota Power shall transfer full ownership and operational responsibility of the System to the Band upon completion of the Project.
7. If Minnesota Power is the Project developer, Minnesota Power shall, to the extent possible, use competitive solicitation and bidding processes to secure product and services related to the construction of the System.
8. The Band shall own and retain solely for its own use all energy, financial and environmental benefits that result from the System such as any associated renewable energy credits, carbon offsets, energy or capacity value, or other benefits generated from the creation of power from the Project.

C. Project Plan Requirements: Within sixty (60) days after entering into an agreement with the Band, Minnesota Power shall submit to EPA a Project Plan, that conforms with Section I.D. of this Appendix and also includes the following:

1. A detailed explanation of how the System will be constructed in accordance with the requirements contained in this Appendix;
2. Copies of any contracts or agreements entered into with the Band and/or other entities to ensure that the System is constructed in accordance with this Appendix;
3. The UL listing of all solar photovoltaic modules and inverters, whether such modules and inverters are California Energy Commission (CEC) listed, and the specific warranty of such components (at both 90% and 80% nameplate energy production), such that EPA may evaluate the quality of the solar module and inverters to be installed;
4. A list of all parties, both individuals and entities, other than Minnesota Power that will be involved with the implementation of this Project and a description of each party's role in the Project and the credentials for asserting that such party is able and suited to perform their intended role;
5. A Project schedule that includes important Project and financial milestones; and
6. A description of the Escrow account or alternative funding mechanism to be created to meet the requirements of Section E.

D. System Specifications and Requirements: The System shall, at a minimum, meet the following:

1. The location of the proposed solar array installation shall have unobstructed solar access and solar resource availability;
2. The System will be installed at a single location owned by the Band, unless there is not a single suitable site to locate the entire System, in which case the System may be installed at more than one location upon approval by EPA;

3. The System shall include appropriate system security measures designed to protect the solar PV modules and other System equipment from public access or vandalism;
 4. The System shall utilize conventional flat panel or thin film solar photovoltaic technologies;
 5. The System shall utilize grid-tied inverters, appropriately sized for the capacity of the solar panels installed at the location;
 6. Solar panel racking and mounting equipment shall be appropriate for the particular System site location and be installed using industry best practices;
 7. The System components shall have at least the following warranties, which shall be fully transferable to the Band:
 - a. All solar photovoltaic modules shall carry a minimum 10-year materials warranty; and
 - b. Inverters must carry a minimum 10-year warranty with an efficiency of 95% or higher.
 8. The System shall include all necessary wiring, conduit, and associated switchgear and metering equipment required for connecting the solar generator to the grid. The System shall meet all requirement under the National Electric Safety Code (NESC) and all wiring, conduit, and fasteners must meet industry best practices for use in outdoor environments (such as corrosion resistance) and local or national code requirements;
 9. The System shall include remote monitoring capabilities such that the Band is able to remotely monitor voltage (V), current (A), the total hourly energy output of the system (kilowatt-hours), environmental benefits delivered; hourly ambient temperature ($^{\circ}\text{F}/^{\circ}\text{C}$), and irradiance ($\text{watts}/\text{meter}^2$). Minnesota Power and the Band will investigate the options to make System operation and performance data available to the public and Minnesota Power will include the resulting preferred option in its Project Plan for the System; and
 10. The design and installation of the System shall be performed by energy professionals certified by the North American Board of Certified Energy Practitioners.
- E. Escrow Account: Minnesota Power shall require the Band either to create a separate escrow account for use by the Band solely for purposes of maintaining the performance of the System over the operational life of the project (i.e. 25 years), or to use an alternative mechanism approved by EPA to ensure maintenance of the project over the operational life of the project. Minnesota Power shall assist the Band in determining the appropriate annual funds needed to ensure coverage of all operating and maintenance costs over the life of the project. The escrow account or alternative mechanism shall cover the following:
1. Insurance premiums (to fund a policy that covers the system against any potential damage, natural or otherwise) over its 25-year life;
 2. Site maintenance (fencing, roads, etc.);
 3. Grounds maintenance (mowing, vegetation management, pest controls);

4. Solar module repair or replacement (to the extent not covered by insurance or manufacturer warranty);
5. System maintenance, including periodic inspections, repair, and replacements for the power distribution system, interconnection system, and balance of plant;
6. Ongoing site security costs;
7. System performance maintenance (including ongoing remote monitoring access and internet access infrastructure and service); and
8. Dust and snow removal from solar modules and the site (as needed).

F. Completion Report: In addition to the information required to be included in the report pursuant to Section I.G, above, Minnesota Power shall:

1. Produce a project site overview detailing the final System location, points of interconnection, detailed array layout, etc. (including photos and description of the site(s) before and after installation of the System);
2. Describe the final size/design capacity of the installed System, components installed, total cost, dollar and percentage investment by source, expected levelized cost of electricity (LCOE) over the life of System, expected annual energy output, and expected environmental benefits; and
3. Identify the escrow account established or alternative mechanism to be utilized to support ongoing operation and maintenance activities over the life of the System (i.e. 25 years).

G. Completion Date: The System shall be completely installed and operating within five (5) years from approval of the Project Plan.

III. Wood-Burning Appliance Change Out Project – \$500,000 to \$1,000,000

- A. Consistent with the requirements of Section I of this Appendix, Minnesota Power shall submit a Project Plan to EPA for review and approval for the implementation of a wood-burning appliance change out and retrofit project (“Wood Burning Appliance Project”). Minnesota Power shall spend at least \$500,000 and up to \$1,000,000 in Project Dollars to sponsor the Project. Minnesota Power shall ensure that the Project is implemented by an appropriate state, local, or tribal air pollution control agency or a third-party non-profit group (“Implementing Entity”).
- B. The Wood Burning Appliance Project shall replace or retrofit inefficient, higher-polluting wood-burning or coal appliances with cleaner-burning, more energy-efficient heating appliances and technologies, such as by: (1) retrofitting older hydronic heaters (a.k.a., outdoor wood boilers) to meet EPA Phase 2 hydronic heater voluntary emission limits; (2) replacing older hydronic heaters with current EPA Phase 2 hydronic heaters (or heaters meeting more stringent standards if established in a New Source Performance Standard), or with EPA-certified wood

- stoves, other cleaner-burning, more energy-efficient hearth appliances (e.g., wood pellet, gas, or propane appliances), or EPA Energy Star qualified heating appliances; (3) replacing non-EPA-certified wood stoves with EPA-certified wood stoves or cleaner-burning, more energy-efficient appliances; (4) replacing spent catalyts in EPA-certified wood stoves; and (5) replacing or retrofitting wood-burning fireplaces with EPA Phase 2 qualified retrofit devices or cleaner-burning natural gas appliances. The appliances that are replaced under the Wood Burning Appliance Project shall be permanently removed from use and appropriately recycled/disposed.
- C. The Wood Burning Appliance Project shall provide incentives for the wood-burning appliance replacements and retrofits through rebates, vouchers, discounts, and for income-qualified residential homeowners, up to full replacement costs.
 - D. To qualify for the Wood Burning Appliance Project, the wood-burning appliance or fireplace must be in regular use in a primary residence, in a non-seasonally rented property (occupied all year around), or in a frequently used non-residential building (e.g., churches, greenhouses, schools) during the heating season, and preference shall be given to those appliances that are a primary or significant source of heat.
 - E. The Wood Burning Appliance Project shall be implemented within the Minnesota Power service territory (and the Counties containing and surrounding the Minnesota Power System) including Aitkin, Beltrami, Carlton, Cass, Cook, Crow Wing, Hubbard, Itasca, Koochiching, Lake, Morrison, Ottertail, Pine, St. Louis, Stearns, Todd, and Wadena County, Minnesota. Minnesota Power may propose to EPA the inclusion of additional counties in Minnesota if demand is determined to be insufficient in the above participating counties.
 - F. No greater than 10% of the Project Dollars provided to the Implementing Entity shall go towards administrative support and outreach costs associated with implementation of the Wood Burning Appliance Project.
 - G. Each Wood Burning Appliance Project participant shall receive information related to proper operation of their new appliance and the benefits of proper operation (e.g., lower emissions, better efficiency), including, if applicable, information related to the importance of burning dry seasoned wood. Installation of new, cleaner burning heating appliances shall be done by a certified or equivalent professional in conformity with all applicable manufacturers' installation instructions, state laws, and local codes. Every Wood Burning Appliance Project participant shall also be asked to sign a pledge committing to only burning dry seasoned wood, and shall be offered a moisture meter.
 - H. Defendant shall ensure that the Implementing Entity consults with the EPA's Residential Wood Smoke Reduction Team and implements the Wood Burning

Appliance Project consistent with the materials available on the EPA's Burn Wise website at <http://www.epa.gov/burnwise>.

- I. The Wood Burning Appliance Project shall be completed no later than five years after approval of the Project Plan.
- J. Project Plan Requirements: In addition to the information required by Section I.D of this Appendix, Minnesota Power shall:
 1. Identify each Implementing Entity and any other entities with which the Implementing Entity proposes to partner to implement the Wood Burning Appliance Project (e.g., the Hearth, Patio, and Barbecue Association of America, the Chimney Safety Institute of America, the American Lung Association, weatherization offices, individual stove retailers, and entities that will dispose of the old appliances, etc.);
 2. Provide a schedule that includes incremental dates by which Minnesota Power shall provide Project Dollars to implement the Wood Burning Appliance Project;
 3. Provide an estimate of the number and type of appliances Minnesota Power intends to subsidize or make available through the Wood Burning Appliance Project, the cost per unit, and the value of the rebate or incentive per unit;
 4. Describe the criteria the Implementing Entity will use to determine which income-qualified owners shall be eligible for up to full cost replacement and;
 5. Describe Minnesota Power's or the Implementing Entity's proposed outreach program to raise awareness within the geographic area of the Wood Burning Appliance Project.
- K. Completion Report: In addition to the information required to be included in the completion report for the Wood Burning Appliance Project pursuant to Section I.G. above, Minnesota Power shall describe the final number and type of appliances made available through the Wood Burning Appliance Project, the cost per unit, and the value of the rebate or incentive per unit.

IV. Land Donation and Restoration Project(s) – up to \$750,000

- A. Consistent with the requirements of Section I of this Appendix, Minnesota Power may submit a Project Plan to EPA for review and approval for the use of up to \$750,000 in Project Dollars for the donation and/or restoration of ecologically significant lands, watershed, vegetation, and/or forests in northern Minnesota.
- B. The goal of this Project is to protect ecologically significant lands, watersheds, vegetation, and forests through donation and/or restoration and by using adaptive

management techniques designed to improve ecosystem health and mitigate harmful effects from air pollution. In addition, the funding shall be used to facilitate public use of acquired lands in a manner consistent with the ecology of the area.

- C. For purposes of this Appendix and Section IX (Environmental Mitigation Projects) of the Consent Decree, land donation shall include the donation of interests in land, including fee ownership, easements, or other restrictions that run with the land that provide for the perpetual protection of the donated land. Project Dollars expended on donation of fee simple ownership of land to a non-profit or government agency shall be calculated as 75% of the value of the land donated as determined by an independent third party appraiser. Project Dollars expended on donation of easements, or other restrictions that run with the land shall be calculated as 75% of the value of the easement or restriction as determined by an independent third party appraiser. Minnesota Power shall consult with land preservation/conservation non-profits, the National Park Service, or other government agencies when determining which potential lands are of the highest ecologically significant value and should be considered for donation.
- D. Land restoration may include, but is not limited to, reforestation or revegetation (using only plants native to the area) and/or removal of non-native, invasive plant species and the perpetual protection of the restored land. Perpetual protection of the restored land shall include a prohibition on any deforestation, or destruction or degradation of the land in any way that is inconsistent with the ecology of the area, with the intent to preserve, not merely conserve, the land. Perpetual protection of the restored land must incorporate the donation of an interest in the restored lands sufficient to ensure perpetual protection of the restored land (unless the restored land is owned by a federal or state government entity). Project Dollars shall not be expended on public access roads, trails, or paths.
- E. In addition to the information required by Section I of this Appendix, the Project Plan shall include:
 - 1. A general description of the areas proposed to be donated and/or restored, including a map clearly identifying the location of the land and all city, state, or federal publically protected lands/parks in the area surrounding the proposed land to be protected and/or restored.
 - 2. A justification as to why the area should be considered ecologically and/or environmentally significant and warrants preservation and/or restoration.
 - 3. A description of the projected cost of each portion of the land protection and/or restoration.
 - 4. Identification of any person or entity(s) other than Minnesota Power that will be involved in the Project(s), including but not limited to all owners with interests in the land. Minnesota Power shall describe all third-party roles in

the Project(s) and the basis for asserting that such entity is able and suited to perform the intended role. Any proposed third-party must be legally authorized to perform the proposed action and/or receive Project Dollars.

5. An explanation of how the land will be protected and maintained in perpetuity (including a copy of any proposed conservation easement), including an explanation of why the land is unlikely to be of interest for mining, and a description of intended public access roads, trails, or paths to be constructed, if any.
 6. A schedule for completing and funding each portion of the Project.
- F. Performance: All Project Dollars shall be expended within five years of approval of the Project Plan.

V. Solar and/or Geothermal Projects – up to \$1,500,000

- A. Consistent with the requirements of Section I of this Appendix, Minnesota Power may submit a Project Plan to EPA for review and approval for the use of up to \$1,500,000 in Project Dollars to install geothermal, solar photovoltaic, and/or solar water heating Projects on buildings or sites owned or operated by public schools, non-profit groups, and/or federal, state or local governments within the Minnesota Power service territory, for benefit of the owner of the building (the “Project Beneficiary”) and the occupants of the building.
- B. Geothermal Project Description: A Geothermal Project (“Geothermal System” or “Geothermal Project”) shall include the purchase and installation of a ground source geothermal heat pump system that utilizes the earth as a heat source in the winter and a heat sink in the summer to reduce conventional energy consumption. A Geothermal Project shall include the equipment necessary to support the installation and operation of a ground source heat pump system, including the exterior building components (e.g., well field holes, subsurface piping, and circulation pumps), the geothermal heat pump unit (evaporator and condenser, compressor, expansion valve and refrigerant) and improvements to existing internal building components (e.g., HVAC distribution system and ductwork) necessary for the proper operation and performance of the new system. A Geothermal Project will not include construction of new structures (e.g., rooms) or the installation of new ductwork systems not already in existence in the building.
- C. Geothermal Project Specifications and Requirements: A Geothermal Project shall, at a minimum, meet the following:
1. General
 - a. Any Geothermal System shall be limited to supplying space heating and cooling to one or more buildings, with the option to

- add a desuperheater to the Geothermal Project to supply existing hot water loads.
- b. Minnesota Power shall ensure that each Geothermal System meets industry accepted standards for design and installation including, but not limited to, those promoted by International Ground Source Heat Pump Association (“IGSHPA”), National Ground Water Association, Air Conditioning Contractors of America, and Geoexchange.
 - c. Minnesota Power shall require the project developer to conduct an in-situ formation thermal conductivity test for ambient deep earth temperature, thermal conductivity, and thermal diffusivity, for a minimum of 40 hours to assess the subsurface soil conditions, prior to designing and constructing the Geothermal System.
 - d. Minnesota Power shall require that the loop installer employ quality assurance measures to prevent “short looping” of well field bore holes during the drilling process.
 - e. The Geothermal Project shall include restoration of the project site, particularly the well field, to its original or near-original condition.
 - f. Minnesota Power shall, to the extent possible, use competitive solicitation and bidding processes to secure products and services related to the development, construction and maintenance of the Geothermal System.
2. Geothermal System components
- a. All heat pumps shall be listed by the Air-Conditioning, Heating and Refrigeration Institute (“AHRI”).
 - b. Heat pumps shall meet the minimum Energy Efficiency Ratio (“EER”) and Coefficient of Performance (“COP”) ratings required by Energy Star at the time the heat pumps are installed.
 - c. All applicable components shall be UL listed.
 - d. The loop material shall be a polyethylene pipe that carries a minimum 50-year manufacturer warranty.
 - e. Heat transfer fluids shall be biodegradable and present no hazard to the environment if used.
 - f. The Geothermal System shall include the installation of appropriate onsite monitoring equipment supported by kiosk-delivered educational software to enable Project Beneficiaries to monitor the operation and performance of the Geothermal System.
3. Qualifications
- a. Minnesota Power shall ensure that any entity that will be involved in the Geothermal Project is legally authorized to perform its intended role and to receive Project Dollars.
 - b. The Geothermal Project’s design, installation and commissioning (including bore hole drilling) shall be performed by IGSHPA certified or accredited professionals or by other professionals certified by geothermal manufacturers to design and/or install the manufacturers’ products.

- c. Best efforts shall be made to select project designers and installers (including engineers, architects, and bore hole drillers) with experience on at least three (3) successful geothermal projects.
4. Project Service Contract
- a. Minnesota Power shall ensure that upon conveyance of the Geothermal System to the Project Beneficiary that an active 5-year service contract (“Project Service Contract”) will be in force to cover any expected maintenance and operations expenses.
 - b. The Project Service Contract shall have the option for renewal at the Project Beneficiary’s discretion after the first 5-year period.
 - c. Minnesota Power shall escrow Project Dollars estimated to be sufficient to cover the operations and maintenance of the Geothermal Project for a total of 25-years and include:
 - i. The cost of the Project Service Contract;
 - ii. Project commissioning and performance optimization within the first year of system operation;
 - iii. Annual Geothermal System checkups; and
 - iv. Expected replacement of major system components as needed to extend the performance of the Geothermal Project for a minimum of 25 years.

The obligation to escrow Project Dollars for operation and maintenance of the Project is a one-time obligation, fulfilled when Minnesota Power deposits such Project Dollars in escrow, and does not create any ongoing obligation for Minnesota Power to operate or maintain the Project or to provide funds for such operation or maintenance beyond such initial escrow.

5. End-user documentation and training requirements: Minnesota Power shall provide the Project Beneficiary with:
- a. Geothermal System design drawings including a map detailing the subsurface GPS location of well field bore holes;
 - b. Copies of permits and inspections demonstrating compliance with local codes;
 - c. Copies of the drilling logs, soil sample documentation and in-situ thermal conductivity analysis;
 - d. Copies of simulated design and financial performance (energy and cost saving) analyses of the Geothermal System;
 - e. Geothermal System documentation including, system maintenance and operational requirements, component manuals, operation manuals and warranty information; and
 - f. In-person, on-site, system operation user training.

D. Solar PV Project Description: A solar photovoltaic Project (“PV System” or “PV Project”) shall, at a minimum, consist of: (1) the installation of solar panels with unobstructed solar access, producing electricity not to exceed the total annual electricity base load of the building the PV Project serves; (2) a grid-tied inverter(s), appropriately sized for the capacity of the solar panels installed at the

location; (3) the appropriate solar panel mounting equipment for the particular building; (4) wiring, conduit, and associated switchgear and metering equipment required for interconnecting the solar generator to the utility grid; and (5) appropriate monitoring equipment supported by kiosk-delivered educational software to enable Project Beneficiaries to monitor various aspects of the PV System.

E. Solar PV Project Specifications and Requirements: The PV System shall, at a minimum, meet the following:

1. General

- a. Minnesota Power shall document that the location of the proposed solar array installation has unobstructed solar access and solar resource availability;
- b. The PV Project shall be installed on the customer side of the meter and the PV System shall be owned by the Project Beneficiary;
- c. All ground-mount PV Systems shall include appropriate system security measures designed to protect the solar PV modules and other equipment from public access and vandalism; and
- d. Minnesota Power shall, to the extent possible, use competitive solicitation and bidding processes to secure product and services related to the development, construction and maintenance of the PV System.

2. PV System components

- a. The PV System shall utilize conventional flat panel or thin film solar photovoltaic technologies;
- b. All solar photovoltaic modules shall be UL and CEC listed;
- c. All solar photovoltaic modules shall carry a 10-year warranty on minimum of 90% nameplate energy production and 25-year warranty on a minimum of 80% nameplate energy production;
- d. All solar module warranties must be documented in advance of construction and be fully transferable to the Project Beneficiary.
- e. The PV System shall utilize grid-tied inverters, appropriately sized for the capacity of the solar panels installed at the location;
- f. Inverters shall be UL and CEC listed;
- g. Inverters must carry a minimum 10-year warranty;
- h. All solar grid-tied inverter warranties must be documented, in advance of construction and be fully transferable to the Project Beneficiary.
- i. Solar panel racking and mounting equipment shall be appropriate for the particular project site location and be installed using industry best practices;
- j. The PV System shall include all necessary wiring, conduit, associated switchgear and metering equipment required for connecting the solar generator to the grid. The System shall meet all requirements under the National Electric Code (NEC) and all

wiring, conduit, and fasteners must meet industry best practices for use in outdoor environments (such as corrosion resistance) and local or national code requirements; and

- k. The System shall include remote monitoring capabilities such that the Project Beneficiary is able to remotely monitor voltage (V), current (A), the total hourly energy output of the system (kilowatt-hours), environmental benefits delivered; hourly ambient temperature ($^{\circ}\text{F}/^{\circ}\text{C}$), and irradiance (watts/meter²).
3. Qualifications: Minnesota Power shall utilize energy professionals certified by the North American Board of Certified Energy Practitioners to perform the design and installation of the PV System.
 4. Project Service Contract
 - a. Minnesota Power shall ensure that upon conveyance of the PV System to the Project Beneficiary that an active 5-year service contract (“Project Service Contract”) will be in force to cover any expected maintenance and operations expenses.
 - b. The Project Service Contract shall have the option for renewal at the Project Beneficiary’s discretion after the first 5-year period.
 - c. Minnesota Power shall escrow Project Dollars sufficient to cover a total of twenty-five (25) years of service contracts to start from the commissioning date of the PV System. The calculation of escrowed funds shall include estimated amounts for; annual PV System checkups, solar module cleanings, snow removal, as well as any expected replacements of PV System components (i.e., inverters) as needed to extend the life of the PV Project for a minimum of 25 years.
 - d. The obligation to escrow Project Dollars as required above is a one-time obligation, fulfilled when Minnesota Power deposits such Project Dollars in escrow, and does not create any ongoing obligation for Minnesota Power to operate or maintain the Project or to provide funds for such operation or maintenance beyond such initial escrow.
- F. Solar Water Heating Project Description: A solar water heating Project (“Thermal Project” or “Thermal System”) shall, at a minimum, consist of: (1) the proper installation of solar thermal technologies at a single location with unobstructed solar access, using active direct or indirect systems, (2) sizing of the solar thermal collectors’ surface area to match the intended storage tank and end use application, (3) appropriate monitoring equipment supported by kiosk-delivered educational software to enable Project Beneficiaries to monitor the operation and performance of the System, and (4) freeze protection appropriate for the system’s climate region.
- G. Solar Water Heating Project Specifications and Requirements: A Thermal System shall, at a minimum, meet the following:

1. General

- a. All Thermal Projects shall be installed to serve onsite building water heating loads only;
- b. Minnesota Power shall document that each proposed collector array location has unobstructed solar access and resource availability;
- c. All Thermal System designs shall have redundant freeze protection suitable for the climate zone of the proposed site. Closed loop recirculation systems must have a minimum of two separate freeze protection mechanisms on each system. In addition to manual intervention, a separate freeze protection mechanism must be designed to function in the event of a power failure during freezing conditions;
- d. All Thermal Systems shall be designed to meet stagnation and overheat protection requirements set forth by the Solar Rating and Certification Corporation (“SRCC”) or the International Association of Plumbing and Mechanical Officials (“IAPMO”);
- e. All ground-mount collector arrays shall include appropriate system security measures designed to protect the solar water heating collectors from public access and vandalism; and
- f. The Thermal System shall be designed to address and mitigate any issues stemming from poor water quality where locally necessary.

2. Solar Water Heating Collectors: The solar collectors proposed by Design-Builder shall, at a minimum, meet the following requirements:

- a. Solar Rating & Certification Corporation (SRCC) Standard 100 for Solar Collectors;
- b. SRCC Standard 300 for Solar Water Heating Systems;
- c. All solar collectors must have a minimum of a 10 year manufacturer’s performance warranty to protect against defects and a 15% warranty against performance degradation; and
- d. If collectors using hazardous materials are to be provided, then the environmental impact of the hazardous material usage must be disclosed, including any special maintenance requirements and cost for proper disposal/recycling of the collectors at the end of their useful life.

3. Balance of System Components

- a. All hot water pipe lines shall be fully insulated with material which has a minimum of R2.6 value;
- b. Collector banks shall be isolated by valves, with a pressure relief valve and with the capability of being drained;
- c. Any support structure shall be designed to withstand the static weight of filled collectors and piping, wind, seismic, and other anticipated loads without damage. The developer shall

demonstrate adequate structural support of the support structure involved with the racking system and the building to which it is affixed;

- d. The collector array layout shall be oriented so that all collectors face the same direction at the proper tilt angle with respect to horizontal and proper orientation with respect to true south;
- e. Collector array racking and mounting equipment shall be appropriate for the particular project site location;
- f. Any proposed site location or support structure shall allow access to all equipment for maintenance, repair, and replacement; and
- g. The Thermal Project shall include metering equipment and remote monitoring capabilities such the Project Beneficiaries are able to monitor: solar energy delivered; cold water supply temperature; solar hot water delivery temperature; collector temperature; run time of pump(s) and log data (including alarms and system messages); environmental benefits delivered (pounds of CO₂ avoided); hourly ambient temperature (°F/°C); and irradiance (watts/meter²).

4. Qualifications

- a. Minnesota Power shall utilize energy professionals certified by the North American Board of Certified Energy Practitioners to perform the design and installation of the Thermal System;
- b. All roofing penetrations and waterproofing shall be performed or overseen by a licensed roofing contractor who is certified by the roofing materials manufacturer for the specific materials or systems comprising each roof upon which a solar system will be installed; and
- c. The roofing contractor shall extend a roof warranty related to all roof penetrations associated with the system and provide such documentation to the Project Beneficiary.

5. Project Warranty and Service Contract

- a. Minnesota Power shall ensure that upon conveyance of the Thermal System to the Project Beneficiary that an active 5-year service contract (“Project Service Contract”) will be in force to cover any expected maintenance and operations expenses.
- b. The Project Service Contract shall have the option for renewal at the Project Beneficiary’s discretion after the first 5-year period.
- c. Minnesota Power shall escrow Project Dollars sufficient to cover a total of twenty (20) years of service contracts to start from the commissioning date of the Thermal System. The calculation of escrowed funds shall include estimated amounts for annual Thermal System checkups, solar collector cleanings, snow removal, as well as any expected replacements of System

components (i.e., pumps, storage tanks) as needed to extend the life of the Project for a minimum of 20 years.

- d. The obligation to escrow Project Dollars as required above is a one-time obligation, fulfilled when Minnesota Power deposits such Project Dollars in escrow, and does not create any ongoing obligation for Minnesota Power to operate or maintain the Project or to provide funds for such operation or maintenance beyond such initial escrow.

H. Additional Project Plan Requirements: In addition to the requirements under Section I.D, Minnesota Power shall include in their Project Plan the following:

1. If any Project Beneficiaries have been selected at the time of submittal of the Project Plan, a description of each Project Beneficiary's baseload electricity usage and/or hot water usage, thermal load, solar access availability, and other criteria used to select the Project Beneficiary, and to the extent that Project Beneficiaries have not been selected, a description of the process and criteria Minnesota Power will use to select potential recipients of the Projects, based on factors such as baseload electricity usage and/or hot water usage, thermal load, solar access availability, and other relevant criteria;
2. The UL listing of all solar photovoltaic modules and inverters such that EPA may evaluate the quality of the solar module and inverters to be installed; and
3. Identification of any person(s) or entity(s) other than Minnesota Power that will be involved in the Project.

I. Escrow Accounts: The money required to be allocated by Minnesota Power to fund operations and maintenance of each PV System, Thermal System and Geothermal System shall be deposited in a separate escrow account for use by the Project Beneficiary. These funds shall be used solely for the purpose of maintaining the System throughout the minimum operational life of the Project (20 years for a Thermal System and 25 years for a PV System or Geothermal System), and for such period beyond the minimum operational life as required to deplete the funds. The obligation to escrow Project Dollars is a one-time obligation, fulfilled when Minnesota Power deposits such Project Dollars in escrow, and does not create any ongoing obligation for Minnesota Power to operate or maintain the Project or to provide funds for such operation or maintenance beyond such initial escrow.

J. Project Completion Report: In addition to the information required to be included in the report pursuant to Section I.G, above, Minnesota Power shall also identify each Project Beneficiary and include a description of each constructed system (including the size/design capacity, the components installed, the total cost of the system, Project Dollars expended, and expected annual energy output, monitoring capabilities, and the escrow account details).

- K. Completion Date: The System(s) shall be completely installed and operating within five (5) years from approval of the Project Plan.

VI. Clean Diesel Project – up to \$500,000

- A. Consistent with the requirements of Section I of this Appendix, Minnesota Power may submit a Project Plan to EPA for review and approval in which Minnesota Power shall spend up to \$500,000 in Project Dollars to fund clean air projects that will significantly reduce diesel emissions from diesel engines and vehicles that serve public needs in Northern Minnesota. The diesel engines and vehicles must be based and/or primarily operated in Cook, St. Louis, or Itasca Counties or otherwise in the Minnesota Power service territory.

The Project Plan shall provide for the transfer of funds to an appropriate third party to implement a clean diesel grant type program which funds clean air projects that reduce emissions from diesel engines and vehicles.

- B. Additional Project Plan Requirement: In addition to the requirements under Section I.D, Minnesota Power shall identify any person(s) or entity(s) other than Minnesota Power that will be involved in the Project.
- C. Completion Date: The Project above shall be completed within three (3) years from the approval of the Project Plan, except that Minnesota Power may request an extension of time to complete the Project if it appears likely that all Project Dollars will not be spent within such three-year period, despite Minnesota Power's best efforts to implement the Project within such period.

VII. Electric Vehicle Infrastructure Enhancement – up to \$500,000

- A. Consistent with the requirements of Section I of this Appendix, Minnesota Power may submit a Project Plan to EPA for review and approval in which Minnesota Power shall spend no less than \$300,000 and no more than \$500,000 in Project Dollars for the implementation of a Project for the reduction of pollutants through the installation of electric vehicle charging stations in Northern Minnesota.
- B. Minnesota Power may undertake enhancements to Minnesota's electric vehicle charging infrastructure by contributing funding towards purchase and installation of charging stations for electric vehicles in Northern Minnesota. Plug-in electric vehicles require infrastructure to recharge their batteries. Establishment of electric vehicle charging stations in Northern Minnesota will expand the useful driving range of electric vehicles in Northern Minnesota, as well as encourage Northern Minnesota drivers and visitors to purchase electric vehicles for local and commuting use. Locations for such charging stations would be targeted for areas where vehicles could be left for adequate time to fully charge the vehicle's battery system.

- C. If Minnesota Power elects to undertake this Project, it shall partner with the Minnesota Pollution Control Agency, which will administer the Project Dollars to ensure that all Project Dollars are directed to the purchase and installation of the charging stations and will identify locations at which other partners will take ownership of and assume responsibility for the ongoing operation and maintenance of the charging stations. Locations would be identified to maximize the number of vehicles that could utilize the chargers while striving to expand the network of electric vehicle charging stations currently in Northern Minnesota. Chosen sites shall be publicly accessible and provide charging opportunities to the general public.
- D. Overall emissions reductions would depend upon the number of vehicles utilizing the charging facilities and would be based upon the type of vehicles the electric vehicles replaced along with geographic considerations, the emissions characteristics and the annual vehicle miles traveled (“VMT”). The Project Plan shall provide for the purchase and installation of Level 2 or Level 3 charging stations powered by solar or wind-generated electricity. Therefore the usage would be considered emission free. Minnesota Power will report the expected and achieved environmental benefits.
- E. Project Plan Requirements: In addition to the information required by Section I.D of this Appendix, Minnesota Power shall provide:
 - 1. The proposed number and location of Level 2 and Level 3 charging stations;
 - 2. A justification for the proposed locations, including which government or other organizations were consulted before proposing such locations; and
 - 3. General specifications for the proposed charging stations.
- F. The Project shall be completed no later than five years from approval of the Project Plan.

VIII. Voyageurs National Park Restoration Project – \$200,000

- A. Within forty-five (45) days from the Date of Entry of the Consent Decree or ten (10) Working Days from the receipt of payment instructions from the National Park Service, whichever is later, Minnesota Power shall pay to the National Park Service the sum of \$200,000 in Project Dollars to be used in accordance with the Park System Resource Protection Act, 16 U.S.C. § 19jj, for the restoration of wetlands in the Voyageurs National Park.
- B. Payment shall be made to the Park Service pursuant to payment instructions provided to Minnesota Power before or after the Date of Lodging.
- C. Upon payment of the amount specified in Section VIII.A of this Appendix to the National Park Service, Minnesota Power shall notify EPA. After that, Minnesota

Power shall have no further responsibilities regarding the implementation of any project selected by the Park Service in connection with this provision of the Consent Decree.