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Public Service Commission of Wisconsin  
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**PUBLIC SERVICE COMMISSION OF WISCONSIN**

**Application of Northern States Power Company-Wisconsin, for a  
Certificate of Authority to Install Particulate Matter and Mercury  
Emission Reduction Equipment on Boilers 1 and 2 at the Bay Front  
Generating Plant in Ashland, Wisconsin**

**4220-CE-180**

**FINAL DECISION**

**Introduction**

On September 12, 2012, the Commission received an application from Northern States Power Company-Wisconsin (NSPW) under Wis. Stat. § 196.49 and Wis. Admin. Code ch. PSC 112. ([PSC REF#: 171899](#))<sup>1</sup> The application seeks authority to construct new baghouse and activated carbon injection (ACI) facilities on boilers number 1 and 2 at NSPW's existing Bay Front Generating Plant (Bay Front), located in the city of Ashland, Ashland County, Wisconsin, at an estimated cost of \$18,506,741. A Notice of Investigation was issued on October 3, 2012. ([PSC REF#: 173889](#)) No hearing was held.

The application is GRANTED subject to conditions.

**Findings of Fact**

1. NSPW is a public utility engaged in providing electric service in Wisconsin, pursuant to Wis. Stat. § 196.01(5)(a). Pursuant to Wis. Stat. § 196.49, NSPW is subject to the Commission's jurisdiction over its application for a Certificate of Authority for the proposed project.

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<sup>1</sup> See also, [Bay Front Baghouse Attachment A, Zoning Map and Definitions](#). - PSC REF#: 171900; [Bay Front Baghouse Attachment B, Description and Figure](#). - PSC REF#: 171901; [Bay Front Baghouse Attachment C, Project Schedule](#). - PSC REF#: 171902; [Bay Front Baghouse Attachment D, Revenue Requirements](#) - PSC REF#: 171903

2. NSPW's project consists of constructing new baghouse and activated carbon injection (ACI) facilities at its existing Bay Front plant, as described in its application and subsequent filings, at an estimated cost of \$18,506,741.

3. The facilities approved by this Final Decision are necessary to provide adequate and reliable service to present and future electric customers.

4. Energy conservation, renewable resources, or other energy priorities listed in Wis. Stat. §§ 1.12 and 196.025 are not cost-effective alternatives to the proposed facilities.

5. Construction and operation of the facilities at the estimated cost will not impair the efficiency of NSPW's service, will not provide facilities unreasonably in excess of probable future requirements and, when placed in operation, will not add to the cost of service without proportionately increasing the value or available quantity thereof.

6. Alternate plans and designs for the facilities were considered but no other reasonable alternatives to the proposed project exist that could provide adequate support in a more reliable, timely, cost-effective, and environmentally acceptable manner.

7. Construction of the facilities to satisfy the reasonable needs of the public for an adequate supply of electrical energy is necessary and appropriate.

8. The general public interest and public convenience and necessity require completion of the proposed project.

9. The proposed project will not have a significant impact on the human environment as defined by Wis. Stat. § 1.11.

### **Conclusions of Law**

1. Pursuant to Wis. Admin. Code § PSC 112.07(1), the Commission concludes, based on the information in this record, that a public hearing in this docket is not necessary.

2. The Commission has jurisdiction under Wis. Stat. §§ 1.11, 1.12, 196.025, 196.485, 196.40, 196.49, and 196.85 and Wis. Admin. Code chs. PSC 4 and 112 to issue a Certificate of Authority authorizing NSPW, as an electric public utility, to construct new baghouse and ACI facilities at its existing Bay Front plant, as described in its application and subsequent filings, at an estimated cost of \$18,506,741.

### **Procedural History**

NSPW filed its application in this docket on September 12, 2012, and provided additional information in response to Commission staff data requests on October 25, and November 8, 2012. The Commission issued its Notice of Investigation in this docket on October 3, 2012.

On October 8, 2012, the Citizens Utility Board (CUB) filed a request to intervene in the docket, stating that it has an interest because the electric rates of its members include costs for environmental retrofit projects constructed by NSPW, and the substantial interests of these members may be affected by the Commission's actions regarding NSPW's application for the proposed project. ([PSC REF#: 174181](#)) By order dated October 25, 2012, CUB's request was granted. ([PSC REF#: 175338](#)) CUB did not request a hearing.

### **Opinion**

The Bay Front plant is located on approximately 50 acres of land on the shore of Chequamegon Bay, Lake Superior, in Ashland, Wisconsin. The plant was originally constructed and began operation in 1916. Currently, three boilers feed steam into a combined steam header

system that can support three turbine-generator sets. These boilers, referred to as boilers number 1, 2, and 5, currently burn a variety of fuels including coal, waste wood, railroad ties, tire-derived fuel, and natural gas to produce steam that drive the three turbine-generator sets (identified as numbers 4, 5, and 6) to produce electricity.

Of the three existing turbine-generator sets at Bay Front, number 4 has a capacity of 22 megawatts (MW) and came into service in 1949, number 5 has a capacity of 22 MW and came into service in 1952, and number 6 has a capacity of 30 MW and was placed in service in 1957. NSPW states that current expected life of the Bay Front plant is five to nine years.

NSPW proposes to construct new baghouse and ACI facilities to reduce particulate matter (PM) and mercury air emissions from boilers number 1 and 2 at the facility. NSPW states that it has no plans to install additional air emissions control equipment on boiler number 5 because it intends to burn only natural gas in that boiler after January 1, 2015, in order to comply with the Wisconsin mercury reduction rule, Wis. Admin. Code ch. NR 446.

Once the proposed project is installed, the Bay Front facility will comply with the U.S. Environmental Protection Agency (U.S. EPA) National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial and Institutional Boilers and Process Heaters, more commonly referred to as Industrial Boiler Maximum Available Control Technology (IBMACT).<sup>2</sup>

### **Project Need**

NSPW lists three areas of need for the proposed project: to facilitate compliance with IBMACT; to provide voltage support for the transmission system in the area; and, to maintain

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<sup>2</sup> 76 Fed. Reg. 15,608 (2011) (to be codified at 40 C.F.R. Part 63, Subpart DDDDD).

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NSPW's compliance with Wisconsin's Renewable Portfolio Standards (RPS), Wis. Stat. § 196.378.

### **Compliance with IBMACT**

The final IBMACT was officially issued by U.S. EPA on March 21, 2011. IBMACT applies to 15 different subcategories of boilers and process heaters that consume natural gas, oil, coal, biomass, refinery gas, or other gas, including boilers number 1 and 2 at the Bay Front plant. Each subcategory of boiler has specific emission requirements for mercury, PM as a surrogate for non-mercury metals, hydrogen chloride (HCl) as a surrogate for acid gases, carbon monoxide (CO) as a surrogate for organic toxic gases, and dioxins/furans.

On the same day that it issued IBMACT, U.S. EPA also published notice that it intended to reconsider the IBMACT in an effort to address a number of related technical issues that U.S. EPA believed would benefit from additional public involvement.<sup>3</sup> On December 2, 2011, U.S. EPA issued proposed amendments to the IBMACT as part of its reconsideration.<sup>4</sup> The amendments proposed on December 2, 2011, are more stringent than those issued in the March 21, 2011, final IBMACT. Specifically, the December 2, 2011, proposed rule sets new emission limits for PM based on the fuel being combusted in the boiler; sets new emission limits for carbon monoxide based on boiler type; allows an alternative "total selective metals" emission limit instead of a total PM emission limit; and, replaces the numeric dioxin/furan emission limit with work practice standards, among other changes.

While U.S. EPA was expected to finalize the reconsideration of the proposed amendments to IBMACT in spring, 2012, nothing has yet been published. As such, NSPW

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<sup>3</sup> Notice, Delay of Effective Dates, 76 Fed. Reg. 28,662 (2011).

<sup>4</sup> Proposed Rules, 76 Fed. Reg. 80,598 (2011).

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states that it is moving forward to install necessary equipment to comply with the March 21, 2011, final rule by its effective date of March 21, 2014. NSPW states that the installation of the proposed project will ensure boilers 1 and 2 meet the emission limits contained in the March 21, 2011, final rule, as well as the December 2, 2011, proposed amendments. NSPW states that it believes it is appropriate for the Commission to approve the proposed project despite any uncertainty about the IBMACT. The Commission finds that NSPW's approach to compliance with IBMACT is reasonable and prudent given the need for the proposed project, as discussed below.

### **Transmission System Voltage Support**

NSPW states that the Bay Front plant provides voltage and system support for the transmission system in northern Wisconsin. In addition, NSPW states that it is unlikely that Midwest Independent Transmission System Operator, Inc. would allow the capacity of the plant to be significantly reduced, or Bay Front to be retired, without additional transmission facilities in place. NSPW anticipates load growth in the area from the addition of sand mines and petroleum pipeline pumping stations.

Currently, NSPW has received or has applied for Commission approval for approximately \$95.7 million in transmission upgrades<sup>5</sup> that will address some of the existing reliability concerns. These upgrades will help meet North American Electric Reliability

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<sup>5</sup> *Final Decision, Application of Northern States Power Company-Wisconsin to Upgrade Electric Transmission Facilities Between the Existing Stone Lake and Couderay Substations, Sawyer County, Wisconsin*, docket 4220-CE-176 (September 27, 2012) ([PSC REF#: 173118](#)); *Final Decision, Application of Northern States Power Company-Wisconsin to Remove, Replace, and Double-Circuit 36 Miles of Transmission Facilities from 69 kV to 161/69 kV, Between the Couderay and Osprey Substations in Sawyer and Rusk Counties, Wisconsin*, docket 4220-CE-178, (October 24, 2012) ([PSC REF#: 175319](#)); and, *Notice of Investigation, Application by Northern States Power Company-Wisconsin to Upgrade a 115 kV line to 161 kV, Between the Osprey Substation in the Town of Big Falls, Through the Towns of Cedar Rapids and South Fork, Rusk County, the Town of Winter, Sawyer County, on Through the Towns of Georgetown, Elk and Flambeau to the Lugerville Switch in Price County, Wisconsin*, docket 4220-CE-173. ([PSC REF#: 175836](#))

Corporation (NERC) standards if the generating capacity of the Bay Front plant were reduced. However, NSPW estimates that an additional \$80 to \$100 million of long-term transmission investments will be needed if the plant generating capacity is significantly reduced, or the Bay Front plant is retired. NSPW states that these projects could be constructed as early as 2018, but that a more realistic timeframe would have the projects completed in the early- to mid-2020s.

### **RPS Compliance**

NSPW currently fires waste wood at the Bay Front plant. The energy generated using this biomass fuel contributes toward NSPW's compliance with the Wisconsin RPS. NSPW was required by 2010 to increase its renewable component of Wisconsin retail sales by two percent over its 2001 to 2003 baseline. By 2015, NSPW is required to increase its renewable component of retail sales by an additional four percent. To comply with these requirements, NSPW currently estimates that it will need to provide 12.89 percent of its retail sales from renewable energy sources to achieve compliance with the 2015 requirement.

The Wisconsin RPS prohibits NSPW from falling below the baseline, 2010, or final 2015 RPS levels once the deadlines are passed. As such, between 2006 and 2010 NSPW could not fall below its baseline level of 6.89 percent, and between 2010 and 2015 NSPW cannot fall below the interim threshold of 8.89 percent. In addition, if NSPW retires or mothballs a boiler or plant that contributed to the renewable baseline, NSPW must replace the lost renewable energy with other qualifying renewable energy before it could satisfy the next standard. As such, if NSPW reduces the amount of renewable generation from the Bay Front plant, it must make up that lost generation before it can work toward meeting the next RPS threshold.

In 2011, Bay Front generated 161,012 megawatt-hours (MWh) from renewable fuel, or approximately 16 percent of the renewable generation reported in NSPW's annual Wisconsin RPS report. The most likely replacement source of renewable energy would be wind generation located outside of Wisconsin, probably in the service territory of Northern States Power Company-Minnesota.

### **Alternatives Considered**

NSPW considered two alternatives to the proposed project, including: a no-build alternative including conversion of the existing Bay Front plant to be fired by natural gas only with RPS replacement energy obtained from Minnesota or the Dakotas; and, a no-build alternative including conversion of the existing Bay Front plant to be fired by natural gas only and RPS replacement energy obtained from Wisconsin. These alternatives to the proposed project were rejected because the rated capacity of boilers number 1 and 2 would both be reduced from approximately 22 MW each to approximately 6 MW each when fired with natural gas only. The capacity of the units is limited because existing natural gas capabilities are intended to improve boiler start-up and enhance combustion of other primary fuels, not to serve as the main fuel source. This reduced generating capacity would be inadequate to provide voltage and system support for the transmission system in northern Wisconsin. In addition, NSPW does not have the ability to contract for firm natural gas deliveries to the Bay Front plant.

Energy conservation, renewable resources, or other energy priorities listed in Wis. Stat. §§ 1.12 and 196.025 are not reasonable alternatives to the proposed project.



NSPW plans to commence construction of the proposed project in the first quarter of 2013, and place the facilities in service in March, 2014. NSPW estimates that the gross project cost is \$18,506,741, detailed as follows:

<b>Description</b>	<b>Amount</b>
<b>Indirect Expenses</b>	
Materials	\$7,559,469
Miscellaneous Materials	126,824
Labor	3,206,831
Contingencies	751,250
Allowance for Cost Overruns	876,458
<b>Subtotal Indirect Expenses</b>	<u>\$12,520,832</u>
<b>Indirect Expenses</b>	
Construction Management, Site Services, Owner's Engineer	\$3,341,875
Performance Testing	100,000
Contingencies	299,293
<b>Subtotal Indirect Expenses</b>	<u>\$3,741,168</u>
<b>Other Costs</b>	
Reserve/Allowances	\$1,038,000
Allowance for Funds Used During Construction	1,206,741
<b>Subtotal Other Costs</b>	<u>\$2,244,741</u>
<b>Total Project Cost</b>	<u><b>\$18,506,741</b></u>

### **Environmental Review**

This is a Type III action under Wis. Admin. Code § PSC 4.10(3). No unusual circumstances suggesting the likelihood of significant environmental consequences have come to the Commission's attention. Neither an environmental impact statement under Wis. Stat. § 1.11 nor an environmental assessment is required.

### **Certificate of Authority**

NSPW, as an electric public utility, is granted a certificate authorizing it to construct the facilities described in its application and supplemental filings at a total estimated cost of \$18,506,741, subject to the conditions described below.

The construction of the proposed project is not expected to affect any historic properties under Wis. Stat. § 44.40, or any threatened or endangered species under Wis. Stat. § 29.604.

### **Order**

1. NSPW's application for authority to construct new baghouse and ACI facilities at the existing Bay Front Generating Plant, at an estimated total cost of \$33,814,650, is granted.

2. This authorization is for the specific project as described in the application and supplemental filings, at the stated cost. Should the scope, design, or location of the project change significantly, or if it is discovered or identified that the project cost, including *force majeure* costs, may exceed the estimated cost by more than 10 percent, the NSPW shall promptly notify the Commission as soon as it becomes aware of the possible change or cost increase.

3. When constructing the approved project NSPW shall implement all construction and environmental mitigation methods required by any necessary DNR permit.

4. All necessary state and local permits must be secured prior to beginning construction.

5. Beginning with the quarter ending December 31, 2012, and within 30 days of the end of each quarter thereafter and continuing until the facilities are fully operational, NSPW shall submit quarterly progress reports to the Commission that include all of the following:

- a. The date that construction commences.
- b. Summaries of the status of construction, the anticipated in service date, and the overall percent of physical completion.
- c. Actual project costs segregated by line item as reflected in the cost breakdown listed in this Final Decision.

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- d. The date that the facilities are placed in service.
- 6. This authorization is valid only if construction is started within one year of the date of this Final Decision.
- 7. This Final Decision is effective the day after mailing.

Dated at Madison, Wisconsin, December 5, 2012.

For the Commission:

A handwritten signature in black ink that reads "Robert Norcross". The signature is written in a cursive style with a large initial "R".

Robert Norcross  
Administrator  
Gas and Energy Division

RDN:JAL:cmk:DL:00606356

See attached Notice of Rights

PUBLIC SERVICE COMMISSION OF WISCONSIN  
610 North Whitney Way  
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**NOTICE OF RIGHTS FOR REHEARING OR JUDICIAL REVIEW, THE  
TIMES ALLOWED FOR EACH, AND THE IDENTIFICATION OF THE  
PARTY TO BE NAMED AS RESPONDENT**

The following notice is served on you as part of the Commission's written decision. This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

*PETITION FOR REHEARING*

If this decision is an order following a contested case proceeding as defined in Wis. Stat. § 227.01(3), a person aggrieved by the decision has a right to petition the Commission for rehearing within 20 days of mailing of this decision, as provided in Wis. Stat. § 227.49. The mailing date is shown on the first page. If there is no date on the first page, the date of mailing is shown immediately above the signature line. The petition for rehearing must be filed with the Public Service Commission of Wisconsin and served on the parties. An appeal of this decision may also be taken directly to circuit court through the filing of a petition for judicial review. It is not necessary to first petition for rehearing.

*PETITION FOR JUDICIAL REVIEW*

A person aggrieved by this decision has a right to petition for judicial review as provided in Wis. Stat. § 227.53. In a contested case, the petition must be filed in circuit court and served upon the Public Service Commission of Wisconsin within 30 days of mailing of this decision if there has been no petition for rehearing. If a timely petition for rehearing has been filed, the petition for judicial review must be filed within 30 days of mailing of the order finally disposing of the petition for rehearing, or within 30 days after the final disposition of the petition for rehearing by operation of law pursuant to Wis. Stat. § 227.49(5), whichever is sooner. If an *untimely* petition for rehearing is filed, the 30-day period to petition for judicial review commences the date the Commission mailed its original decision.<sup>6</sup> The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

If this decision is an order denying rehearing, a person aggrieved who wishes to appeal must seek judicial review rather than rehearing. A second petition for rehearing is not permitted.

Revised: December 17, 2008

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<sup>6</sup> See *State v. Currier*, 2006 WI App 12, 288 Wis. 2d 693, 709 N.W.2d 520.