

APPLICATION FILING REQUIREMENTS
ELECTRIC GENERATION PROJECTS*
IN WISCONSIN

**PUBLIC SERVICE COMMISSION OF WISCONSIN
WISCONSIN DEPARTMENT OF NATURAL RESOURCES**

JANUARY 2015



*** Different filing requirements apply to wind generation plants.**



PUBLIC SERVICE COMMISSION OF WISCONSIN
Application Filing Requirements
Electric Generation Projects
January 2015

This document lists information required for a complete application to construct a new electric generation facility that requires either a Certificate of Authority (CA) under Wis. Stat. § 196.49 or a Certificate of Public Convenience and Necessity (CPCN) under Wis. Stat. § 196.491 from the Public Service Commission of Wisconsin (PSC).

The CPCN and CA are PSC certifications, but the applicant might also need to request certain Wisconsin Department of Natural Resource (DNR) permits. This document therefore also refers to information required for permits from the DNR under Wis. Stat. § 30.025.

Overall, the filing requirements are intended to organize information consistently and to facilitate PSC and DNR application reviews.

Utility applications must include an analysis of project need and costs. Other types of applicants may not be required to provide this information. Consult with PSC staff during the pre-application consultations to verify which filing requirements apply to a specific project.

Joint PSC/DNR Pre-Application Consultation Process

An applicant must consult with both the PSC and DNR prior to submitting its application (Wis. Stat. § 30.025(1m) and Wis. Admin. Code § PSC 4.70(1)). This pre-application consultation process is a series of discussions with the staff of these two agencies. Each agency has its own requirements, but the two agency reviews interrelate.

A proposed project will likely require water, air, and possibly solid waste permits from the DNR. During the pre-consultation process, the PSC docket coordinator will identify the number of paper copies of these DNR applications the PSC will require.

Topics discussed during the pre-application process include:

- PSC and DNR staff contacts
- Applicable portions of the filing requirements for each agency
- Appropriate application formats and subject matter, such as for maps and diagrams
- Specific permits and approvals required for the project
- PSC's and DNR's projected review timelines and important milestones

- Site alternatives and project boundary
- Appropriate type, scope, and timing of required field work (habitat assessments, archeological surveys, wetland delineations, biological surveys, etc.)

During the pre-application period, the applicant should also solicit additional information from other interested persons through public outreach.

DNR Application Needs

Like the PSC, the DNR requires a complete application for the project review to proceed. The applicant must consult DNR staff to ensure that particular requirements for the DNR project review are met.

Permits and Application Requirements

DNR permits required for the project will be identified during the pre-application process and with the help of the applicant's Engineering Plan, described in the next subsection.

Under Wis. Stat. § 30.025, the two agencies must follow a common review timetable if wetlands or navigable waters are involved. For this reason, a complete application containing both DNR and PSC required information is submitted to both agencies at the same time. Specific DNR permit application requirements can be confirmed by the DNR Bureau of Energy Transportation and Environmental Analysis (BETEA). The requirements include information and materials needed for analysis of potential impacts to rare species and natural communities, and wetland or waterway construction permits. Applications must include an Endangered Resources (ER) review from the DNR or obtain concurrence from DNR for an ER Review completed by a certified individual. The ER Review includes an analysis of the information contained in the Natural Heritage Inventory (NHI) database.

Engineering Plan

An Engineering Plan required under Wis. Stat. §196.491(3)(a)3 must be submitted to the DNR before a CPCN application may be submitted to the PSC. The Plan must:

- Show the proposed facility locations.
- Describe the facilities, including major components that could have significant air, water, or solid waste pollution potential.
- Briefly describe the anticipated effects of the proposed facilities on air quality, water quality, wetlands, solid waste disposal capacity, and other natural resources.

Habitat Assessments and Biological Surveys

Habitat assessments or biological (plant and/or animal) surveys may be required for the DNR portion of the application or at some point in the application process. Natural resources of particular concern include (1) areas that support high quality, rare, or important wetlands, rivers, or natural communities or habitat features (e.g., bat hibernacula or bird rookeries); and (2) areas where state or federal endangered, threatened, or special concern species occur or may occur.

The applicant should meet early in the pre-application process with DNR to determine the type of field work that should be completed. DNR may require fieldwork to be conducted (1) prior to

submitting an application, (2) while the application is under review, (3) prior to the start of construction, and (4) post construction. At least two to four months before the beginning of the appropriate field season, DNR will require project information such as the project schedule, major project actions, and current aerial photos of the project area. For most species, the field season begins in the second quarter of the year; however, some rare species may require that field work be conducted earlier or later in the year. DNR will discuss with the applicant the timing and scope of the required studies based on project specifics and the application schedule.

Wetlands and Waterways

The applicant must submit two completed tables for DNR, a Waterway/Wetland Impact Location Table and a Waterway/Wetland Environmental Inventory Table. The DNR tables describe each waterway or wetland that would be impacted by the proposed project and its connecting facilities and must be completed as stipulated by the DNR.

To complete the DNR tables, it is desirable to use the best available information source. If field surveys are not possible, the applicant must consult with DNR staff to determine alternative sources of information which may include a combination of maps, aerial photos, and ground-truthing.

The wetland classification and unique field ID that are used in the DNR tables must also be included in the attributes tables of the submitted wetland Geographical Information Systems (GIS) shapefiles that are included with the project application.

Application Formats

Application Tables

The tables submitted as part of the application such as cost and mailing list spreadsheets are to be submitted in Adobe Acrobat (*.pdf) as well as Microsoft Excel spreadsheets.

The mailing list must meet the following format criteria as demonstrated below:

- Submit tables in Microsoft Excel.
- Do not use punctuation marks.
- Only use capital letters for all entries excluding email addresses.
- Comply with current U.S. Postal Service mailing standards.
- Only use the Email Column if addresses are not more than one year out-of-date.
- Populate the Sort Column with the last name of a private property owner or the name of the business or organization for governments, groups, etc.
- If possible, mailing list should be able to be cross-referenced with the submitted GIS property shapefile.

Sample Mailing List Table

	A	B	C	D	E	F	G	H
1	attention	name	address	city	state	zip	email	sort
2		ROBERT SMILEY	PO BOX 1452	KENOSHA	WI	zip+4		SMILEY
3		DORIS J & KEN R SMITH	N2457 CTH X	ARENA	WI	zip+4	doris.smith@google.com	SMITH
4	MARY KLEIN CLERK	ALLEN COUNTY	7894 ELM ST STE 74	MILWAUKEE	WI	zip+4	mary.clerk@allen.wi.us	ALLEN COUNTY
5	JOHN FINCH DIR	FRIENDS OF WETLANDS	5885 FANCY DR	WEST BEND	WI	zip+4	ifinch@wetland.r.us	FRIENDS OF WETLANDS
6		ALBERT & RITA MILES TRUST	PO BOX 986	HAYWARD	WI	zip+4		MILES TRUST
7								

Contact PSC staff regarding any questions about mailing list submittals.

Contact DNR BETEA staff for questions regarding the two DNR tables.

Geographical Information System Submissions

GIS data files must be submitted in shapefile format, in the current version of ArcGIS (ESRI ArcGIS 10.X). Geodatabases may also be used. Data files should clearly describe the contents and be appropriately named.

Provide the following GIS-related items as part of the application:

- GIS shapefiles or a geodatabase that contains all the data used to produce all maps submitted as part of the application.
- A spreadsheet listing all GIS data files, a file description, the source of the data, and the date when the data was collected or published.
- Map files in ESRI ArcView *.mxd format for all GIS maps in the application.
- ESRI ArcReader published map files in *.pmf format for all GIS maps in the application.

All GIS data must include a *.prj file. Wisconsin state agencies use the Wisconsin Transverse Mercator (WTM) projection system.

Photographic and Line Drawing Submissions

- Line drawings must be in AutoCad and may be in either *.dwg or *.dxf format. The preference is *.dwg.
- Any photographic renderings (photo simulations) of proposed facilities on the existing landscape must be submitted in a high-resolution raster format.
- Digital aerial photographic images must be properly geo-referenced and must be accompanied by the geographic coordinate and projection system.
- Scanned maps and diagrams that cannot be submitted in any other format must be submitted in *.gif format at a depth of 256 colors or less.

Application Size

Applicants are required to minimize the physical size of their applications by eliminating superfluous information not material to the case.

- Only submit those pages relevant to the information requirement. Do not submit multi-page ordinances, land use plans, etc. unless the entire document would be helpful for context.
- Minimize duplicative information. An appendix is the appropriate location for information that is referred to in several different sections of the application.
- Submit only official correspondence between the applicant and state, local and federal government agencies. PSC staff needs to review this correspondence to verify that the applicant has applied for the necessary permits and to ascertain the status of the permit review. Do not include unofficial minutes of meetings, records of telephone conversations, or billings from the PSC or DNR.
- Applications should be printed double-sided. Exceptions to this requirement are maps sized larger than 11 x 17 inches.

Confidential Materials

Organize the application so that all confidential materials are only in Appendices and separated from non-confidential materials. Submit confidential materials in compliance with the confidential materials handling procedures of each agency.

DNR Natural Heritage Inventory (NHI) related information must be submitted confidentially to both agencies.

PSC Electronic Regulatory Filing (ERF) System

The ERF system is the official file for all dockets considered by the Commission. Use the ERF system to post all confidential and non-confidential application materials, including all materials provided to DNR. Both the initial application and the complete application must be submitted using the ERF system. Items submitted in native formats, such as ESRI ArcGIS shapefiles, Microsoft Excel tables, Microsoft Word versions, modeling, etc. should be documented in a letter filed on ERF.

Instructions for submitting documents to the ERF system can be found on the PSC web site.

Application Completeness

For CPCNs, PSC and DNR staff will examine the application during a 30-day completeness review period as required under Wis. Stat. §196.491(3)(a)2. The applicant will be notified if an application is deemed complete by the end of the 30-day period. If the application is found to be incomplete, PSC will send the applicant a letter identifying the deficiencies. The applicant may then submit revised or supplemented application materials to the PSC and DNR for a new 30-day application completeness review. There is no statutory time limit for an applicant to submit the revised or supplemental materials in order to remedy identified deficiencies.

Applicants should be aware that complete applications rarely answer all the questions that the PSC and DNR must address. It is likely that applicants will be called upon to provide additional information and data to support their applications throughout the review process. Applicants will be expected to respond to all staff inquiries made subsequent to a determination of completeness in a timely, complete, and accurate manner.

Filing the Application

For CA applications, check with PSC docket coordinator and the DNR during the pre-application process to determine how the application should be filed and how many paper copies are necessary. Electronic versions of all submitted application materials must be sent to both the PSC and the DNR. Flash drives will not be accepted.

For CPCN applications, a two-step process must be followed.

Step 1 -- Initial CPCN Applications

- Send to the PSC docket coordinator the number of paper copies of the non-confidential portion of the application agreed upon by PSC staff and the applicant plus one paper copy of each of the required DNR water, waste management, and air permit applications.
- Send to the PSC docket coordinator CDs or DVDs¹ containing:
 - The entire non-confidential portion of the application in Adobe Acrobat (*.pdf) format.
 - Microsoft Word versions of the text portion of the application.
 - Microsoft Excel versions of tables.
 - ESRI ArcView shapefiles/geodatabase files and ESRI ArcReader published files (*.pmf) for all maps submitted in the application.
- File with PSC Records Management, using confidential material handling procedures, electronic versions of **confidential** portions of the application including modeling, spreadsheets, NHI unredacted materials, etc.

Post to the PSC ERF, all application materials both confidential and non-confidential, including all materials provided to DNR.

¹ Thumb drives will not be accepted by the PSC.

Send to the DNR BETEA:

- Two paper copies of the non-confidential and **confidential DNR NHI-related materials** portion of the application. (Do not provide paper copies of confidential portions of the application that do not apply to DNR requirements.)
- CDs or DVDs containing
 - The non-confidential portion of the application and the **confidential DNR NHI-related materials** in Adobe Acrobat (*.pdf) format.
 - Microsoft Word versions of the text portion of the application.
 - Microsoft Excel versions of tables.
 - ESRI ArcView shapefiles/geodatabase files and ESRI ArcReader published files (*.pmf) for all maps submitted in the application.

Step 2 -- After CPCN Application Is Deemed Complete

The PSC may require as many as 25 complete paper applications. Again check with the PSC docket coordinator to verify the appropriate number of applications. Applicants are encouraged to reuse applicable portions of the initial applications in order to create the required number of complete paper applications. Upon the PSC declaring the application to be complete, submit the following:

- Send to the PSC docket coordinator, paper versions of the non-confidential portions of the complete application, and one copy of each the DNR permit applications if they have changed. Again, the PSC encourages the reuse of unchanged portions of the initial applications.
- Send to the PSC docket Coordinator, paper copies of the **confidential** portions of the application.
- CDs or DVDs containing
 - The non-confidential portion of the complete application in Adobe Acrobat (*.pdf) format.
 - Microsoft Word versions of the text portion of the complete application.
 - Microsoft Excel versions of tables.
 - ESRI ArcView shapefiles/geodatabase files and ESRI ArcReader published files (*.pmf) for all maps submitted in the application.
- Using confidential material handling procedures, file with PSC Records Management, **confidential** appendices, modeling, spreadsheets, etc.

Post to ERF the revised complete application (confidential and non-confidential).

Send to the DNR BETEA:

- Two paper copies of the non-confidential portions of the application and the **confidential DNR NHI-related materials**. (Do not provide paper copies of confidential portions of the application that are not required by DNR.)
- CDs or DVDs containing
 - The non-confidential portion of the application and the **confidential DNR NHI-related materials** in Adobe Acrobat (*.pdf) format.
 - Microsoft Word versions of the text portion of the application.
 - Microsoft Excel of the required tables.
 - ESRI ArcView shapefiles/geodatabase files and ESRI ArcReader published files (*.pmf) for all maps submitted in the application.

Public Copies of CPCN Applications

Electronic copies of the initial application and a combination of paper and electronic copies of the complete application must be sent to the clerks of municipalities and towns in the project area and the main public libraries that serve the project area (Wis. Admin. Code § PSC 111.51).

Within 10 days of submitting a CPCN application, the PSC docket coordinator may require the applicant to send electronic copies of the application to the approved mailing list of political subdivisions and libraries. Proof of delivery will be required. The application must be accompanied by an approved statement on the initial page of the electronic document explaining that this is an initial application and that it may differ from the application that the PSC deems complete.

As soon as practicable, but no more than 30 days after the CPCN application is deemed complete, the applicant must send an electronic copy of the complete application to the approved list of municipalities, towns, and libraries. At the request of a clerk or main public library, a paper copy of the application must be sent. Proof of delivery is required.

Public Copies of CA Applications

There are no requirements for distributing copies of the CA applications to the public.

Contact for Questions

Adam Ingwell, PSC, (608) 267-9197 Adam.Ingwell@wisconsin.gov.

Application Filing Requirements Electric Generation Facilities

A complete application must contain the following information or a showing must be made as to why the information is not applicable. The application's organization should follow the major format and numbering system of these filing requirements.

Utility applications must include an analysis of project need and costs. Other types of applicants may not be required to provide this information. Consult with PSC staff during the pre-application consultations to verify which filing requirements apply to a specific project.

If substation or transmission construction is part of the application, the substation and transmission application materials may be presented within the related sections of the larger application or as separate sections, provided the organization of the application remains clear and easy-to-understand. There are separate application filing requirements for substations and transmission construction on the PSC website.

Questions about the applicability of specific information requirements and the organization of the application will be discussed with PSC and DNR staff during pre-application consultation.

1.0 Project Proposal

1.1 Project Facilities

- 1.1.1. Identify the corporate entity or entities that would own and/or operate the proposed plant(s) including their names, addresses, and percent of ownership (Wis. Admin. Code § PSC 111.53(1)(a)4).
- 1.1.2. Provide a list of all cities, villages, and townships and their respective counties that would be directly affected by the proposed facilities or their connecting utility or railroad routes.
- 1.1.3. Provide contractual agreements between developer and utilities to construct, finance, lease, use or own facilities.
- 1.1.4. Identify the type of power plant proposed (technology and major components required) including any planned additions, possible expansions or other modifications that have been evaluated for the future.
- 1.1.5. Identify any potential for secondary industrial or commercial development that may seek to utilize excess heat or steam energy from the project. Include both the long-term potential as well as any short-term plans for future steam customers.
- 1.1.6. Identify each proposed generating unit, including its type, size, and fuel. (Wis. Admin. Code § PSC 111.53(1)(a)1 and 2).
- 1.1.7. Specify the facility's estimated capacity factors, for each generating unit and the basis for the estimate (Wis. Admin. Code § PSC 111.53(1)(a)6).

- 1.1.8. Identify pipelines, truck/train loading and unloading areas, and temporary or permanent on-site storage for:
 - 1.1.8.1. Fuel supply – pipeline, train, truck, etc. plus on-site storage tanks or piles.
 - 1.1.8.2. Water supply and discharge.
 - 1.1.8.3. Steam delivery.
 - 1.1.8.4. Ash or other waste disposal – pipeline, train, truck, etc. plus on-site storage tanks or piles.
- 1.1.9. Identify any new or modified electric transmission lines and other electric transmission facilities that might be needed. Include information on who would build the transmission line and interconnection.
- 1.1.10. Provide an estimate of the expected life span for the power plant.

1.2 Project Costs

Provide the anticipated overall costs for the proposed project (see Section 4.0).

1.3 Project Sites

Describe and provide in maps the following items that are applicable to the proposed project.

- 1.3.1. Locations and footprints of proposed site and site alternatives.
- 1.3.2. General geology, topography, land cover, and land use of the site alternatives.
- 1.3.3. Any special or unique natural or cultural resources.
- 1.3.4. Adjacent areas of residential concentrations.
- 1.3.5. Existing area utilities, including electric transmission, natural gas, and water.
- 1.3.6. Expected connecting utilities.
- 1.3.7. Railroad lines and potential connections to them.

1.4 Site Selection Process

Describe the site screening and selection process used to determine the proposed site(s).

- 1.4.1. List individual factors or site characteristics used in site selection.
- 1.4.2. Provide information on how individual factors and site characteristics were weighted for your analysis and why specific weights were chosen.
- 1.4.3. Explain in detail how brownfields were considered in the selection of sites to propose (Wis. Stat § 196.491(3)(d)8).
- 1.4.4. Provide a list of all sites reviewed with weighted scores for each siting factor or characteristic, including the brownfield requirement, used in the analysis.
- 1.4.5. Provide a narrative describing and justifying why the final site(s) was/were chosen.
- 1.4.6. If two alternative sites are different configurations on the same parcel of land, explain and justify why they are the alternatives selected for the proposal.

1.5 Permits and Approvals

- 1.5.1. Provide copies of all official correspondence between the applicant and all state, federal, or local government agencies as described in the *Introduction*, page v.²

² The applicant must continue to submit copies of all official correspondence between the applicant and any federal, local government, or other state agency while the application is under review.

- 1.5.2. Provide a list of all state and federal permits/approvals that would be required for this project and their status.
- 1.5.3. Provide a list of all local permits or approvals that apply to the proposed project, including the local agency, contact information, and status of each permit or approval.
- 1.5.4. Identify railroad facilities that could be affected by the project.
 - 1.5.4.1. Identify railroad facilities by location and owner that could be affected by the project.
 - 1.5.4.2. Provide documentation, if possible, that the proposed construction is acceptable to the company.
- 1.5.5. Identify utility pipelines that could be affected by the project.
 - 1.5.5.1. Identify the owners of the utility pipeline facilities.
 - 1.5.5.2. Provide documentation, if possible, that the proposed construction is acceptable to the companies.

1.6 General Construction Schedule

Provide the anticipated general construction schedule.

- 1.6.1. Provide a description of all major construction activities including any temporary roads, dewatering wells, stream enclosures or re-routing, or other facilities or landscape changes required during construction.
- 1.6.2. Identify any potential seasonal or regulatory construction constraints by facility and major component.
- 1.6.3. Identify all critical path items.
- 1.6.4. Generally discuss any generation or transmission outage constraints that may have to be accommodated.

1.7 Mailing Lists

- 1.7.1. Provide Microsoft Excel mailing lists in an acceptable format and cross-correlatable to GIS parcel data as described in the *Introduction, pages iii-iv*.
- 1.7.2. Identify the sources of the information contained in the mailing lists and discuss the potential for inaccuracies in the data set (new development, poor data, etc.).
- 1.7.3. Provide a list of libraries that the application will be mailed to.
- 1.7.4. Mailing lists must include:
 - 1.7.4.1. All property owners within one-half mile of the proposed power plant sites. It is strongly recommended that applicants consult with PSC staff in order to ensure that the coverage is appropriate considering the project type, surrounding land use, etc. Include properties on both sides of a street or road.
 - 1.7.4.2. All public property owners such as schools or other government entities within one-half mile.
 - 1.7.4.3. The chief executive officers of the counties, towns, villages, or cities in which the routes or other proposed facilities would occupy.
 - 1.7.4.4. The Regional Planning Commissions in whose jurisdictions the facilities would be built.
 - 1.7.4.5. Applicable state and federal agencies.

1.8 Project Maps and Illustrations

Provide project maps, figures, illustrations, etc. that clearly portray the project in a format and scale that is unambiguous and easy to understand. Labels and symbology used on the maps must be clearly visible. The range of required maps/illustrations and whether they should be submitted electronically or in paper form will be discussed during the pre-application consultations.

- **Aerial Photographs**
Must be the most recent aerial available, not more than three years old.
Encompass at least one mile beyond generation site boundaries and all connecting facilities.
- **Facilities Data**
Must illustrate at least one-half mile from the project boundary. Project boundaries will be defined at pre-application consultations.
 - Proposed site alternatives
 - Proposed facilities and footprint
 - Proposed utility connections
 - Proposed access roads (temporary and permanent)
 - Proposed railroads and barge docks
 - Proposed temporary laydown, material storage areas, and construction parking areas
- **Environmental Data**
 - Rivers, lakes, and other waterways
 - Outstanding or Exceptional Waterways, Trout Streams, Wild or Scenic Rivers
 - Field-delineated wetlands and Wisconsin Wetland Inventory wetlands
 - Archeological sites
 - Soils and hydric soils
 - Geology
 - NHI rare species occurrences (confidential)
 - USGS topographic maps
 - Floodplains (Flood Insurance Rate Map data)
- **Parcel Data**
Must include properties within one-half mile of the project boundary.
 - Private parcels with ownership information
 - Public properties (symbolized differently than private properties)
 - Tribal or other types of properties
 - Political subdivision boundaries
 - Township, range, section
- **Land Use**
Must include properties within one-half mile of the project boundary.
 - Land use (e.g., agriculture, recreation) / land cover (e.g. forest, grasslands)
 - Zoning within one-half mile of the site
 - Active mines and quarries
 - Sensitive sites within one-half mile of the site (e.g. daycare centers, schools, hospitals, etc.)
 - Airports, airstrips (public and private)
 - Communication towers
 - Recreation areas and trails

- **Utility/Infrastructure Data**
Must include properties within one-half mile of the project boundary.
 - Existing transmission, pipelines, and other applicable infrastructure
 - Existing distribution lines that would be modified or relocated due to the proposed project
 - Roads, highways, interstates
 - Railroads
 - Applicable infrastructure ROWs (e.g., WisDOT, pipeline, electric distribution, electric transmission, railroad, trail)
- **DNR-required information**
Include information such as locations of possible Chapter 30 activities (e.g., grading, riprap), temporary clear span bridges, pole locations and ROW, Wisconsin Wetland Inventory, wetland/waterway field data (correlatable to DNR tables), hydric soils, etc.

1.9 ESRI ArcGIS Data Files (see *Introduction, page iv*)

- 1.9.1. Use the most recent version of ESRI ArcGIS to support all maps and information submitted as part of the application.
- 1.9.2. Provide a spreadsheet that lists each GIS file (clearly named and organized), a description of the data, data source, and the date when the data was generated or collected for field data.

2.0 Project Need Analyses

2.1 Project Need

Describe the purpose/need for the project with supporting data, including an energy efficiency analysis.

- 2.1.1. Provide the annual peak demand and total energy forecast for the next 20 to 25 years. Provide a description of the demand and energy profile. Any changes in the peak demand and total energy profile over the forecast period should be fully explained.
- 2.1.2. Using EGEAS, Strategist, or similar tool, describe the 25-year optimal generation expansion plan for all of the entities that are part of the generation plan.
- 2.1.3. Describe how the availability of purchase power was analyzed.
- 2.1.4. Identify plant retirements forecast over the next 20 to 25 years.
- 2.1.5. Describe how the existing and expected applications for generation from Independent Power Producers (IPPs) have been factored into your forecast.
- 2.1.6. Conduct an energy efficiency analysis. The analysis should include an estimate of the amount of energy efficiency included in the forecast, an explanation of how the estimate was derived, and an estimate of additional energy efficiency potential and how capturing that additional energy efficiency would impact the proposed project.

2.2 Discuss Energy Alternatives

- 2.2.1. Describe supply alternatives to this proposal that were considered.
- 2.2.2. Present the justification for choosing the proposed options.
- 2.2.3. If the project is not a cogeneration project, explain why it is not.
- 2.2.4. Discuss a no-build alternative and its potential impact on electrical supply and environmental impact.
- 2.2.5. Discuss load reduction (conservation and energy efficiency) as an alternative (Wis. Admin. Code § PSC 111.53(1)(d)1.).
- 2.2.6. Provide analyses that examines the proposed project's cost-effectiveness, technical feasibility and environmental soundness in meeting the energy demand with respect to the following energy priorities (Wis. Stat. §§ 1.12(4) and 196.025(1)(ar)):
 - 2.2.6.1. Noncombustible renewable energy resources
 - 2.2.6.2. Combustible renewable energy resources
 - 2.2.6.3. Nonrenewable combustible energy resources in the following order listed:
 - 2.2.6.3.1. Natural gas
 - 2.2.6.3.2. Oil or coal with sulfur content of less than 1 percent
 - 2.2.6.3.3. All other carbon-based fuels.

2.3 Wholesale Market Competition

Describe the potential effect of the proposed project on wholesale market competition. Discuss whether the cost of energy from the proposed plant would lower or increase the cost of energy and if so, how. Also discuss what the impact of the additional generation would have on the price of energy.

2.4 Excess Heat or Steam Energy

Identify uses for excess heat or steam energy from the project, including any potential for secondary industrial or commercial development. Include both the long-term potential as well as any short-term plans for future steam customers.

3.0 Project Engineering

3.1 Facilities

- 3.1.1. Describe the power plant proposed (technology and major components required). Support with diagrams, drawings, and simulations, as necessary. Describe separately and to the same detail any and all supporting facilities related to fuel delivery and unloading, conveyors, crushers and processors, cooling water systems, water intake and filtering, water discharge, ash loading, and air pollution control.
- 3.1.2. Describe the proposed additions, possible expansions or other modifications that have been evaluated for the future. Describe the purpose for each. Support with similar graphics to those of Section 3.1.1.
- 3.1.3. Estimate the expected hours of operation and capacity on a daily, weekly, seasonal, and annual basis. (Wis. Admin. § PSC 111.53(1)(a)(3)).
- 3.1.4. Provide the facilities' physical dimensions and expected appearance.
 - 3.1.4.1. Provide detailed scale drawings and/or simulations of all the proposed plant facilities for the sites and their footprints.
 - 3.1.4.2. Photo simulations are desirable. (In order to be certain that any photo simulations provided in an application will be useful, please consult with PSC staff before preparing and submitting photos.)
- 3.1.5. Provide the expected operating characteristics for the project.
 - 3.1.5.1. Heat rate
 - 3.1.5.2. Equivalent availability and capacity factors
- 3.1.6. Provide heat balances for the following operating modes:
 - 3.1.6.1. Minimum load operation
 - 3.1.6.2. Half load operation
 - 3.1.6.3. Rated load operation
 - 3.1.6.4. Maximum capacity operation

3.2 Fuel Supply

Describe the proposed fuel supply (Wis. Adm. Code § PSC 111.53(1)(a)(5)) if the energy is based on the combustion of fuel (e.g. coal, natural gas, biomass). Provide the appropriate information under this section for all types of proposed fuels.

- 3.2.1. Identify and describe the types of proposed primary and backup fuels.
- 3.2.2. Discuss the likely fuel source(s) and its (their) availability.
- 3.2.3. Estimate or establish the ranges of each potential fuel's heating value and chemical analysis.
- 3.2.4. Describe the proposed fuel transport and delivery systems.
- 3.2.5. If the fuel is coal:
 - 3.2.5.1. Describe the size and types of vehicles that will be used to deliver the coal to the operating plant, including the source locations, off-site storage and processing if applicable, and routes to on-site coal handling facilities.
 - 3.2.5.2. Describe the process sequence of each type of fuel delivery.
 - 3.2.5.3. Detail the frequency of anticipated deliveries and the quantities of fuel.

- 3.2.5.4. Discuss any modifications of roads, railroads, and any other facilities necessary to handle the delivery of the fuel.
- 3.2.5.5. Describe and diagram on-site fuel handling from delivery through storage, conveyance, and end use.
- 3.2.6. If the fuel is natural gas:
 - 3.2.6.1. Identify the pipeline supplier(s).
 - 3.2.6.2. How much of the fuel supply is expected to be:
 - 3.2.6.2.1. Firm
 - 3.2.6.2.2. Secondary firm
 - 3.2.6.2.3. Interruptible.
 - 3.2.6.3. Describe the size, lengths, routes, and other characteristics of the proposed natural gas pipeline(s) that would serve the project. (See PSC website for Natural Gas Pipeline Application Filing Requirements.)
 - 3.2.6.4. Describe the size and type of vehicles that would be used to deliver the fuel to the plant if, for instance, it is to be delivered by truck or train from a landfill or manure digestion facility.
 - 3.2.6.5. Describe and diagram on-site fuel handling from delivery through gate station or other metering through storage and end use.
- 3.2.7. If the fuel is biomass:
 - 3.2.7.1. Describe the size and types of vehicles that will be used to deliver fuels to the operating plant, including where possible the source locations, off-site processing or storage locations, and routes to on-site biomass handling facilities.
 - 3.2.7.2. Describe the process sequence of each type of fuel delivery, including truck trailer dumping.
 - 3.2.7.3. Detail the frequency of anticipated deliveries and the quantities of fuel.
 - 3.2.7.4. Discuss any modifications of roads, railroads, any other facilities necessary to handle delivery of fuel.
 - 3.2.7.5. Describe and diagram off-site (if applicable) and on-site fuel handling from delivery through processing, storage, conveyance, and end use.
- 3.2.8. Estimate and describe the location(s) and expected capacity of each on-site and off-site (if any) fuel storage.
- 3.2.9. Provide an estimate of the fuel quantity to be used, for the following modes in million BTU per hour:
 - 3.2.9.1. Minimum load operation
 - 3.2.9.2. Half load operation
 - 3.2.9.3. Rated load operation
 - 3.2.9.4. Maximum capacity operation.

3.3 Water – Supply, Storage, Use, Discharge

3.3.1. Supply

Describe the water supply.

3.3.1.1. Describe, diagram, and locate water supply sources for the plant.

3.3.1.2. Describe, diagram specifications, and map water supply pipelines for the plant site(s). (See PSC website for Type 2 Water Projects Application Filing Requirements.)

3.3.1.3. Describe any low-capacity wells (less than 70 gpm) and provide the following information.

3.3.1.3.1. Location

3.3.1.3.2. Size

3.3.1.3.3. Depth

3.3.1.3.4. Maximum pumping capacity

3.3.1.4. Describe any high-capacity wells (70 or more gpm).

3.3.2. Storage

Describe, diagram specifications, and locate on-site water storage tanks, including any for supply water, cooling water, demineralized water, water/oil mixtures for processing, etc.

3.3.3. Consumptive Use

Describe and quantify water use, including consumptive use.

3.3.3.1. Provide water balances for the operating modes listed below. In the analysis include:

3.3.3.1.1. Volume/rates into the cooling tower

3.3.3.1.2. Evaporative losses

3.3.3.1.3. Cooling tower blowdown

3.3.3.1.4. Power augmentation

3.3.3.1.5. Evaporative coolers

3.3.3.1.6. Demineralizer usage

3.3.3.1.7. Steam system blowdown

3.3.3.1.8. Potable water

3.3.3.1.9. Fire protection/control

3.3.3.1.10. Any other uses

3.3.3.2. Provide alternatives for reduced water consumption in cooling towers, including anti-fog cooling tower designs and all-dry cooling tower designs. Discuss the impact of the alternative(s) on:

3.3.3.3. Provide flows in gallons per hour for the following operational modes:

3.3.3.3.1. Minimum load operation

3.3.3.3.2. Half load operation

3.3.3.3.3. Rated load operation

3.3.3.3.4. Maximum capacity operation

3.3.3.3.5. Maximum operation in summer (90 °F)

3.3.3.3.6. Maximum operation at average temperature (44 °F)

3.3.3.3.7. Maximum operation in winter (0 °F)

- 3.3.3.4. If the plant is to burn coal or biomass, provide a separate water balance for ash handling, and describe any special Wisconsin Pollution Discharge Elimination System (WPDES) requirement resulting from ash handling water discharges (see Section 5.12.4).

3.3.4. Wastewater discharge

- 3.3.4.1. Describe, diagram specifications, and locate wastewater discharge outfall points for the plant.
- 3.3.4.2. Describe, diagram specifications, and map wastewater collection points and pathways/pipelines for the plant. (See Sections 5.12.4 and 5.12.5 for environmental wastewater and stormwater requirements.)
- 3.3.4.3. Describe, diagram specifications, and map water/oil separation points for the plant and any other protections for removing oil products or byproducts from wastewater.
- 3.3.4.4. Note facilities in the plant design required by WPDES permit (see Section 5.12.4).

3.4 Steam

If steam is to be taken for industrial use outside the power producing portion of the plant, as in a cogeneration project, describe the following.

- 3.4.1. Describe in detail the steam delivery system from the steam generator to the end use. Include details on removal from the steam generator/boiler/turbine system and on transport by pipeline.
- 3.4.2. Describe in detail the size (length and diameter), composition, and operating pressure of the proposed steam lines, the steam customers or clients, their expected level(s) of steam purchase and use, and where and how the pipeline(s) would be built.

3.5 Air Pollution Emissions Control Equipment

- 3.5.1. Describe, diagram, and map locations on the power plant site for important pollution control equipment, including precipitators, baghouses or desulfurization or selective catalytic reduction equipment.
- 3.5.2. Discuss where and how the pollution control equipment is integrated into the power plant processes like exhaust gas flow.

3.6 Solid, Oil, or Hazardous Wastes, including Ash

Describe and diagram the production, composition, handling of waste products, including ash from fuel combustion.

- 3.6.1. Provide a list of all hazardous chemicals to be used on site during (1) construction and during (2) operation. Include liquid fuel as well as other process chemicals. Include also spill containment and cleanup measures. Discuss Spill Prevention Control and Countermeasure and Risk Management planning for the listed hazardous chemicals.
- 3.6.2. Identify the location and capacity of each solid waste reuse/recycling and disposal facility.

- 3.6.4. If coal or solid biomass is a project fuel, provide the following.
- 3.6.4.1. Identify and diagram the location(s) and paths to on-site ash handling facilities.
 - 3.6.4.2. Provide a separate water balance for ash handling, and describe any special WPDES requirements resulting from ash handling water discharges. See Section 3.3.3.4.
 - 3.6.4.3. Identify, locate, and describe each on-site and off-site landfill that meets DNR requirements for receiving ash from the project.
 - 3.6.4.4. Identify, locate, and describe each on-site landfill that is no longer in use, including old landfills that have never been certified and are “grandfathered.”
 - 3.6.4.5. Identify and describe how ash would be transported off site, including potential routes to be taken by trucks or rail transporting the ash and any off-site storage or processing between the plant and the final landfill or other destination.
 - 3.6.4.6. Identify and describe any beneficial use prospects for ash, including where the ash for beneficial use is to be transported.
 - 3.6.4.7. In a manner parallel to that for coal ash, identify and describe any byproducts from flue gas desulfurization, including where and how these byproducts would be retrieved, handled, and transported off site.
- 3.6.5. If oil/water separation is necessary, identify and diagram if necessary where and how this is to occur and where and how the oily waste materials leave the plant site.

3.7 Electricity

- 3.7.1. Describe, diagram, and map the step up transformer substation to be attached to the plant. Identify and diagram lengths, widths, and heights of substation components. Identify voltages and exit pathways for transmission lines of different voltages.
- 3.7.2. Provide the completed transmission interconnection study report from the transmission provider, including all needed transmission system improvements and Midcontinent Independent System Operator, Inc. (MISO) requirements.
- 3.7.3. Provide a general description of the transmission line facilities required for full operation of the proposed project. Identify transmission line end points, approximate length of line, voltage, and substation and/or switching station requirements. Include information regarding who will build the transmission line. Applicant must confer with PSC and DNR staff in order to ascertain the type of information needed concerning transmission facilities required for the project. (See PSC website for Electric Transmission Line Application Filing Requirements.)

4.0 Project Costs

Cost tables should be based on the projected in-service year. Tables must be submitted in a Microsoft Excel format, in addition to Adobe Acrobat (*.pdf) format.

4.1 Capital and Construction Costs

- 4.1.1. The estimated capital cost of the generating facility and all related facilities, broken down by major plant accounts. Identify all cost escalation factors used in the estimate (Wis. Admin. Code § PSC 111.53(1)(c)1.)
- 4.1.2. The construction cost of the facility.
- 4.1.3. Air pollution control requirements' costs that are assumed in making the project cost estimate.
- 4.1.4. Identification and cost of any property being retired (Wis. Admin. Code § PSC 112.06(1m)(e)).
- 4.1.5. Gross costs of alternative methods or locations that the electric utility considered for accomplishing the purpose of the project, with the reasons for rejecting the alternatives (Wis. Admin. Code § PSC 112.06(1)(f)).

4.2 Proposed Method for Financing the Project

- 4.2.1. The complete terms and conditions of any lease arrangements.
- 4.2.2. Identification of any affiliated interest approvals required for each unit.
- 4.2.3. If applicable, a demonstration of how the conditions of Wis. Stat. § 196.52(9)(a)3(b) on leased generation contracts have been met.
- 4.2.4. Comparisons of contracts between costs of the proposed project as a leased generation project, as a rate-based proposal, or as competitive bids received.

4.3 Forecasted Costs

- 4.3.1. Identification and justification of the costs used for the purchase power forecast.
- 4.3.2. Identification and justification of the fuel forecasts used for the first year of operation and levelized in nominal terms over the life of the unit or facility (over the 20-25 year study period) in \$/MBTU. Identify all cost escalation factors used in the estimate (Wis. Admin. Code § PSC 111.53(1)(c)2.).
- 4.3.3. An estimation of the annual production cost, calculated as operating, maintenance and fuel costs for the first year of operation and levelized in nominal terms over the life of the facility. Include all cost escalation factors used and other significant supporting data (Wis. Admin. Code § 111.53(1)(c)3.).
- 4.3.4. An estimation of the annual total cost, calculated as capital and production costs for the first year of operation ((mills per net kWh generated) levelized in nominal terms over the life of the facility. Include all cost escalation factors used and other significant supporting data (Wis. Admin. Code § 111.53(1)(c)4.).
- 4.3.5. An estimation of the useful life of facility, based on depreciation rates established by the Commission (Wis. Admin. Code § 111.53(1)(c)5.).
- 4.3.6. The comparative costs of the fuel alternatives identified.
- 4.3.7. The effects of the project on costs of operation and on the quality and reliability of service (Wis. Admin. Code § PSC 112.06(1m)(d)).

4.4 Transmission Costs, if Applicable

- 4.4.1. Table(s) detailing the projected total costs for each proposed electric transmission route broken into the major categories listed below. Each major category of costs should be broken down into logical components and/or contracts.
 - 4.4.1.1. Material Costs
 - 4.4.1.2. Labor Costs
 - 4.4.1.3. Other Costs
 - 4.4.1.4. Pre-certification Costs
 - 4.4.1.5. High-Voltage Transmission Impact Fees
 - 4.4.1.6. Operation and Maintenance Costs
- 4.4.2. Underground construction costs (if any) separate from overhead construction costs.
- 4.4.3. Separate costs of any substation construction. (See PSC website for Electric Transmission Line Application Filing Requirements.)
- 4.4.4. For 345 kV projects, a summary table of total costs (transmission and substation) for each proposed route, broken down by the following voltage classes.
 - 4.4.4.1. 345 kV
 - 4.4.4.2. Less than 345 kV
 - 4.4.4.3. Distribution

5.0 Natural Resources in the Project Area(s): Descriptions and Potential Impacts

5.1 Mapping Requirement

Provide maps for each site alternative. All the maps should be the most recent version available and extend a minimum of one-half mile from the proposed project boundaries (see Section 1.8).

5.2 History of Site and Grounds

- 5.2.1. Describe the history of use for each generation site, including any uses that could have resulted in site contamination (petrochemical storage, fertilizer or pesticide use, etc.).
- 5.2.2. Describe any remediation conducted on the site(s).
- 5.2.3. If no remediation has been performed on a contaminated site, describe what must be done in order for the project to proceed.

5.3 Constructions Areas

- 5.3.1. Identify location, size, and land cover of laydown areas and material storage areas.
- 5.3.2. Identify location, size, and land cover of construction parking areas.
- 5.3.3. Describe the expected use of these areas after project completion.
- 5.3.4. Describe any plans for post-construction site restoration.

5.4 Geology

- 5.4.1. Describe the geology of each site.
- 5.4.2. Identify any special conditions (e.g. type and depth to bedrock, unusual soil conditions etc.) related to site geology that might create unusual or special circumstances requiring special methods or management during construction.
- 5.4.3. Describe any impact on geological formations (soils, glacial deposits, bedrock) for each site. Note location of active mines or quarries within one half mile.

5.5 Topography

- 5.5.1. Describe the general topography of each site and surrounding area.
- 5.5.2. Describe the expected changes to site topography due to grading activities.

5.6 Soils

- 5.6.1. Identify and discuss the properties of each soil type on each site.
- 5.6.2. Discuss the expected impacts on soils, including volume or tonnage to be excavated, and from where on the site.
- 5.6.3. Describe where mitigation may be required and what techniques would be used (e.g. topsoil segregation, contamination remediation). Include information on how excess soils will be handled.

5.7 Archeological and Historic Resources

- 5.7.1. List each county, town, range, section and $\frac{1}{4}$, $\frac{1}{4}$ section in which any construction would occur.
- 5.7.2. Provide a copy of the results of a Wisconsin Historic Preservation Database (WHPD) cultural resources search for the entire project construction area, whether it is completed in-house or by a consulting archaeologist. In the search results, list each archeological, historical, or sacred resource from the WHPD that would be found in areas of project-related construction, by State Site number, Burial Site number (if any), and Name. Submit this information to the PSC Historic Preservation Officer under separate cover and do not enter it into the ERF. Reference the review in the application.
- 5.7.3. For each archeological or historical resource identified, describe without showing the specific location of the resource how the proposed project might affect the resource and how the project could be modified to reduce or eliminate any potential effect on the resource.

5.8 Existing Vegetative Land Cover, Excluding Agricultural Uses

- 5.8.1. List and locate the existing vegetation communities on and adjacent to each site.
- 5.8.2. List the total number of acres in each land cover type on all proposed sites, and list the number of acres impacted in each land cover type for all proposed sites.
- 5.8.3. Provide observations of prevalent animal and plant species observed during site visits. Information provided should be adequate to characterize the habitat quality of the site accurately.
- 5.8.4. Describe expected impacts to plant and animal habitats and populations.
- 5.8.5. Describe forested lands in particular that are on and adjacent to the site(s) or crossed by any of the potential connecting facilities. Define forested land as any wooded landscape with greater than 20 percent canopy cover excluding narrow windbreaks between agricultural fields but including woodlands adjacent to waterways.
- 5.8.6. For each site and each potential connecting facility, describe the forested lands in particular that would be potentially affected by the project. Include the following information:
 - 5.8.6.1. Type of woods
 - 5.8.6.2. Dominant species
 - 5.8.6.3. Average age and size of trees
 - 5.8.6.4. Ownership (private versus public)
 - 5.8.6.5. Current and past use.
- 5.8.7. Provide specific details for mitigating or minimizing construction impacts in and around forested lands.
- 5.8.8. Provide a detailed re-vegetation and site restoration plan that discusses the following items:
 - 5.8.8.1. Types of re-vegetation proposed for impacted areas.
 - 5.8.8.2. Vegetative monitoring criteria (number of post-construction years or percent cover achieved) and methods.
 - 5.8.8.3. Invasive species monitoring and management.

5.9 Invasive Species (Uplands and Wetlands)

- 5.9.1. Describe areas where invasive species or disease-causing organisms have been observed or are a concern for the construction of the project (e.g., invasive plants, oak wilt, emerald ash borer, etc.).
- 5.9.2. Describe mitigation methods that would be used to avoid the spread of invasive plants or disease-causing organisms and comply with Wis. Admin. Code ch. NR 40, such as cleaning of machinery, surveys, etc.

5.10 Rare Species, Natural Communities, and DNR/USFWS Endangered Resource Reviews

Pre-application meetings with DNR staff are required to determine the information necessary to be included in the application. DNR staff will indicate the type, scope, and timing of required field work relative to the application process. In the Introduction, pages ii-iii of this document, additional details about performing habitat assessments and how to file results of the DNR-required field surveys.

Endangered Resource (ER) Reviews may be done by either requesting a review from the BNHC or by submitting a proposed ER review completed by a certified individual to the BNHC for concurrence. Please note that NHI-related information (i.e., the names and locations of endangered, threatened, special concern species, natural communities, and habitat features) are considered confidential. Submit information in both a redacted (non-confidential) and confidential version. Submit the following species information.

- 5.10.1. Document communication with DNR and USFWS, as applicable.
- 5.10.2. Submit approved DNR ER review.
- 5.10.3. Submit maps and/or data files showing NHI occurrences.
- 5.10.4. Submit results from habitat or natural community assessments and biological surveys for the proposed routes segments that DNR has requested to be included in the application. Results from additional surveys conducted during the review of the application, prior to the start of construction, and/or post-construction must be submitted as they are completed. For each project site, discuss concerns and potential impacts to rare species as identified in the Endangered Resources Review and field studies.
- 5.10.5. For any DNR-identified follow-up actions that must be taken to comply with endangered species law, discuss how each action or rare species identified would affect the proposed project and the specific segment.
- 5.10.6. For any DNR-identified recommended actions to help conserve Wisconsin's rare species and high-quality natural communities, discuss which actions would be incorporated into the proposed project.

5.11 Wetlands and Permits

- 5.11.1. Submit waterway and wetland DNR and USACE permit application materials for all proposed project construction that may impact waterways or wetlands.
- 5.11.2. Submit completed DNR Waterway/Wetland Impact Location Table and a Waterway/Wetland Environmental Inventory Table (DNR Tables 1 and 2).
- 5.11.3. Wetland Practicable Alternatives Analysis (Wis. Admin. Code Ch. NR 103)
 - 5.11.3.1. Describe how wetlands were factored into the project location selection process.

- 5.11.3.2. Describe how the project avoids and minimizes wetland impacts including consideration for placing structures outside wetlands. Explain how proposed access routes will avoid or minimize wetland impacts.
- 5.11.3.3. For proposed construction that will impact wetlands, detail why project alternatives are not practicable after taking into consideration cost, available technology, and logistics in light of overall project purpose.
- 5.11.3.4. If wetland impacts cannot be avoided, describe all temporary and permanent impacts, as well as the construction and restoration methods that would be used to minimize wetland impacts.

5.11.4. Wetland Delineations

Delineate the wetlands and type of wetland within project boundaries and adjacent to any proposed construction activities.

Identify all wetlands on a map in accordance with the U.S. Army Corps of Engineers' January 1987 Technical Report Y 87-1 entitled, "Corps of Engineers Wetland Delineation Manual" and relevant guidance documents. Wetland delineation reports should not be submitted as part of the printed application but in electronic format only.

In lieu of field-delineating wetlands, it is acceptable to identify wetland boundaries by utilizing a more conservative approach including the use of remote sensing tools. These wetland determinations can then be refined with simple field surveys to determine the general upland/wetland boundaries.

Remote sensing of wetland boundaries should include wet and potentially wet areas identified from existing mapping resources, including: Wisconsin Wetland Inventory, NRCS Soil Survey, USGS Topographic Maps, and available USDA FSA Slides.

These wetland boundary determinations can be refined with field verification by taking into account topography and vegetation. If vegetation is lacking, hydrology indicators³ such as inundation, saturation in upper 12 inches, watermarks, drift lines, sediment deposits, drainage patterns, and water-stained leaves should be used to define the general edge of the wetland

- 5.11.5. Identify those wetlands that would be deemed "significant" or "high-quality" wetlands.

5.12 Water

Water intake, consumption, and discharge are regulated by the DNR. For water-related permits, contact the DNR.

5.12.1. Existing Water Bodies and Waterways

- 5.12.1.1. Identify all waterbodies and waterways on each project site and within one-half mile of each project boundary or that may be crossed by any proposed connecting facilities (see Section 1.8).
- 5.12.1.2. Identify which waterways in the project area(s) that the DNR considers to be navigable water of the state under Wisconsin Statutes Ch. 30.

³ A more complete list of hydrology indicators can be found in the Corps of Engineers Wetland Delineation Manual, Report Y-87-1, 1987, Appendix B, Routine Wetland Determination form.

- 5.12.1.3. Identify the waterways in the project area(s) that are classified as follows and the site-specific methods that would be used to mitigate potential impacts to these waterways:
 - 5.12.1.3.1. Outstanding or Exceptional Resource Waterbodies/Waterways
 - 5.12.1.3.2. Trout Streams
 - 5.12.1.3.3. Wild or Scenic Rivers.
 - 5.12.1.4. Evaluate the potential impacts to each identified waterbody/waterway.
 - 5.12.1.5. For each proposed waterbody and waterway crossing, identify the need and method for constructing the crossing.
 - 5.12.1.6. Provide the methods to be used for avoiding, minimizing, and finally mitigating construction impacts in and near waterbodies and waterways.
- 5.12.2. Potential Water Sources
- 5.12.2.1. Identify and fully describe all sources of water required for the project.
 - 5.12.2.2. For each proposed generation unit estimate the volume of water usage in daily, monthly, and annual averages.
 - 5.12.2.3. For low-capacity (less than 70 gpm) on-site well sources, provide the following information:
 - 5.12.2.3.1. Potential impacts to residential, commercial, and municipal wells.
 - 5.12.2.3.2. Proposed mitigation/compensation plan in the event facility water usage causes impacts to nearby wells.
 - 5.12.2.4. For high-capacity (70 or more gpm) on-site well sources, provide the following information:
 - 5.12.2.4.1. High-capacity well permit applications.
 - 5.12.2.4.2. Analyses estimating the cone of depression and potential impacts to residences within one-half mile of each proposed site.
 - 5.12.2.4.3. Mitigation/compensation plan in the event facility water usage causes impacts to residential, commercial, or municipal wells.
 - 5.12.2.5. For municipal water utility groundwater sources, provide the following information:
 - 5.12.2.5.1. Operating water utility and supply well(s) location(s).
 - 5.12.2.5.2. Capacity of municipal well(s) providing service.
 - 5.12.2.5.3. Reserve capacity of the municipal system.
 - 5.12.2.5.4. Potential impacts on the ability of the utility to provide water to municipal customers.

- 5.12.2.5.5. Methods proposed for delivering the municipal water to plant sites, including the following information:
 - 5.12.2.5.5.1. Size of pipeline(s) required.
 - 5.12.2.5.5.2. Proposed routes for pipeline(s).
 - 5.12.2.5.5.3. Length of proposed pipeline(s).
 - 5.12.2.5.5.4. Entity or entities that would construct, operate and own the pipeline.
 - 5.12.2.5.5.5. Property owners located along the water supply pipeline routes, identified also on maps and in the mailing list.
- 5.12.2.6. For surface water sources, provide the following information:
 - 5.12.2.6.1. Identify the proposed surface water source.
 - 5.12.2.6.2. If the water source is one of the Great Lakes, submit documentation for compliance with the Great Lakes Compact.
 - 5.12.2.6.3. Physical information for the intake structures/facilities including:
 - 5.12.2.6.3.1. Location(s)
 - 5.12.2.6.3.2. Depth of intake
 - 5.12.2.6.3.3. Detailed maps and engineering drawings
 - 5.12.2.6.3.4. Construction methods and sequence of construction.
 - 5.12.2.6.4. Environmental characterization of the area at and near the intake facilities including:
 - 5.12.2.6.4.1. Substrate at the intake location.
 - 5.12.2.6.4.2. Fish and invertebrate species and communities present.
 - 5.12.2.6.4.3. Mammal and bird use in the immediate area.
 - 5.12.2.6.4.4. Vegetative cover on and near the shoreline.
 - 5.12.2.6.5. Discuss and describe the potential impacts of the water withdrawal on the water body and downstream users, including:
 - 5.12.2.6.5.1. Physical modeling of the effects of the expected intake structure and water withdrawal on bottom sediments and biota.
 - 5.12.2.6.5.2. Fish and invertebrate species and communities.
 - 5.12.2.6.5.3. Mammal and bird use in the immediate area.
 - 5.12.2.6.5.4. Vegetative cover on and near the shoreline.
 - 5.12.2.6.6. Discuss the minimization and mitigation of identified potential impacts.
- 5.12.3. Water Consumptive Use
 - 5.12.3.1. Identify each source of water that would go through consumptive use.
 - 5.12.3.2. For each generation unit, estimate consumptive water usage in daily, monthly, and annual averages.
 - 5.12.3.3. Estimate the total consumptive use/net loss of water from the water source (e.g. through contact or non-contact cooling, plant processes, once-through cooling, evaporative cooling etc.). Refer to Wis. Stat. § 281.35 regarding water loss approvals.

5.12.4. Wastewater Discharges

- 5.12.4.1. Submit the DNR WPDES permit applications. (Check with the PSC docket coordinator for whether electronic or paper copies are required for the PSC.)
- 5.12.4.2. Provide figures and descriptions of the proposed wastewater discharge structures including:
 - 5.12.4.2.1. Location and type of discharge site (surface water, groundwater, or municipal wastewater system).
 - 5.12.4.2.2. Description of the proposed wastewater pipes and facilities (e.g., length, composition, and location of pipes).
 - 5.12.4.2.3. The construction methods and sequence of construction.
- 5.12.4.3. Provide the chemical and physical attributes of discharged waters including:
 - 5.12.4.3.1. Use and expected concentration of biocides and metals.
 - 5.12.4.3.2. Temperature of discharge at the discharge point and the expected variation on a yearly basis.
 - 5.12.4.3.3. Estimated volumes of wastewater that would be discharged in daily, monthly, and annual averages.
 - 5.12.4.3.4. Estimated average, maximum and minimum daily flows in cubic feet per second and the expected variation on a yearly basis.
- 5.12.4.4. ***If discharging to surface waters***, submit the following:
 - 5.12.4.4.1. Location and depth of discharge outfall structure(s).
 - 5.12.4.4.2. Description and engineering drawings of any structure(s) proposed to be installed at the end of a discharge pipe (diffuser, screen, etc.).
 - 5.12.4.4.3. Characterization of the environment of the discharge pipe and outfall location including, but not limited to:
 - 5.12.4.4.3.1. Type of substrate
 - 5.12.4.4.3.2. Water quality.
 - 5.12.4.4.3.3. Fish and invertebrate species and communities present.
 - 5.12.4.4.3.4. Mammal and bird use of the immediate area.
 - 5.12.4.4.3.5. Vegetative cover in or near the shoreline.
 - 5.12.4.4.4. Discussion and characterization of the potential impacts of the discharge on the water body and downstream users, including:
 - 5.12.4.4.4.1. Modeled results of the expected effects of the discharge on bottom sediments, flora, and fauna.
 - 5.12.4.4.4.2. The anticipated temperature mixing zone configuration, and the expected variation on a yearly basis.
 - 5.12.4.4.5. If appropriate, the proposed methods for invasive mussel control.

- 5.12.4.5. ***If discharging to a local municipality***, submit the following:
 - 5.12.4.5.1. Identification of the local municipality.
 - 5.12.4.5.2. Agreements regarding quantity and quality of discharge to be treated.
 - 5.12.4.5.3. Identification and descriptions of any secondary impacts to the municipal treatment system and any user charges (e.g., Will the municipality require any expansion or upgrades to handle new wastewater stream?)

5.12.5. Storm Water Management

- 5.12.5.1. Erosion control and storm water management plans must be submitted to DNR if the project involves land disturbance in excess of 1 acre. DNR plan approvals may also authorize construction site pit and trench dewatering wastewater discharges to surface waters or seepage systems. Permit applications should be submitted also to the PSC.
- 5.12.5.2. Provide a description of a storm water management plan with diagrams that complies with local and state regulations.
- 5.12.5.3. Describe and provide drawings detailing any proposed storm water management facilities including:
 - 5.12.5.3.1. Any on-site wastewater and storm water treatment facilities
 - 5.12.5.3.2. Any solids or sludges generated from operations
 - 5.12.5.3.3. Any process water pretreatment facilities (demineralizers), blow-down characteristics, and solid waste by-products from water pre-treatment.
 - 5.12.5.3.4. Estimate the amount of flow that storm water management facilities would be designed to handle.
 - 5.12.5.3.5. Identify locations of the point(s) of collection and discharge.
 - 5.12.5.3.6. If the generation unit would burn solid fuel (e.g. coal-fired or biomass-fired), describe the storm water management plan for fuel handling and storage facilities and ash handling and disposal facilities.
 - 5.12.5.3.7. A description of an erosion control plan with diagrams that complies with local and state regulations.

5.13 Air Quality

Air pollution control and air quality impacts are regulated by the DNR. For instructions on filing for DNR air quality permits, consult with DNR.

- 5.13.1. List the DNR air permits required for the project and the status of air permit applications, matching permits to proposed locations, units, and fuels.
- 5.13.2. Describe the type(s) of fuel to be used.
- 5.13.3. Provide a narrative of the air emissions modeling and results, including the following:
 - 5.13.3.1. Control technologies expected to be required for the project for each type of fuel and pollutant (include specific methods or plans to control mercury emissions if the proposed plant will burn coal). Include a diagram of the boiler and any pollution controls.

- 5.13.3.2. Estimated hourly emission rates in pounds per hour at full, 75%, 50%, and 25% load for:
 - 5.13.3.2.1. Carbon monoxide (CO)
 - 5.13.3.2.2. Nitrogen oxides (NO_x)
 - 5.13.3.2.3. Particulate matter less than 10 microns and less than 2.5 microns in diameter (PM₁₀, PM_{2.5})
 - 5.13.3.2.4. Sulfur dioxide (SO₂)
 - 5.13.3.2.5. Mercury (Hg)
 - 5.13.3.2.6. Volatile organic compounds (VOCs)
 - 5.13.3.2.7. Sulfuric acid (H₂SO₄)
 - 5.13.3.2.8. Lead (Pb)
 - 5.13.3.2.9. Greenhouse gases, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases like hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Include emissions associated with other project inputs besides the boiler fuel itself.
- 5.13.3.3. Estimated maximum expected annual emission rates from project sources for the pollutants listed in Section 5.13.3.2.
- 5.13.3.4. Projected emissions in tons-per-year (tpy), by source and for the entire plant, for the pollutants listed in Section 5.13.3.2.
- 5.13.3.5. How the proposed project would affect air quality in relation to NAAQS and PSD increments.
 - 5.13.3.5.1. Provide background ambient levels for criteria pollutants in micrograms per cubic meter at 1, 3, 8, & 24-hour intervals. Also provide annual totals, if available.
 - 5.13.3.5.2. Provide modeling results comparing expected project emissions with the NAAQS (include the expected impact distance and direction).
 - 5.13.3.5.3. Provide all PSD increment modeling results, including those for known pollutants that did not hit the significance threshold.
- 5.13.3.6. Provide expected annual emissions in tons per year (tpy) of CO₂, N₂O, CH₄, and hydrofluorocarbons by source and for the entire plant in two tables:
 - 5.13.3.6.1. Assuming maximum capacity operation for 8760 hours per year.
 - 5.13.3.6.2. Assuming an anticipated capacity factor that allows for outages and the electric market variations.
- 5.13.3.7. Provide tables listing annual organic and inorganic hazardous air pollutant (HAP) emission estimates, with an estimated tpy emitted for each HAP and a total estimated tpy for all HAP emissions.
- 5.13.4. Describe sources and projected amounts of dust (“fugitive dust”) and how it would be controlled.
 - 5.13.4.1. Discuss dust sources and control measures to be used during and after construction.
 - 5.13.4.2. Discuss fugitive dust emissions from fuel storage piles and fuel handling and conveyance, and measures to be taken to control them.

5.14 Solid Waste Handling and Disposal

- 5.14.1. Identify any solid waste that would be produced as a result of electricity production (e.g. coal or biomass ash and sorbent by-products, scrubber sludge).
- 5.14.2. Describe the composition and quantity of the wastes over the expected life of the plant and how each would be handled.
- 5.14.3. List the DNR solid waste and landfill permits required for the project and the status of permit applications.
- 5.14.4. Identify the location(s) on the project site where solid waste (bed ash, fly ash and flue gas desulfurization by products, etc.) would be stored, transported, and loaded for removal.
- 5.14.5. Discuss the potential for beneficial use or reuse of ash and other combustion byproducts.
- 5.14.6. Locate and describe the potential ash landfills that could be utilized for combustion wastes. Describe how much ash would need to be transported and how many trucks that transport would require. Map the most probable truck routes to the landfill(s).

6.0 Community Resources in the Project Area(s): Descriptions and Potential Impacts

6.1 Community Resource Maps and Photos (see Section 1.8)

- 6.1.1. Provide maps showing sites in relation to nearest residences and other buildings, indicating distances to both the site boundary and the plant footprint.
- 6.1.2. Provide additional maps, if necessary showing proximity to schools, day care centers, hospitals, and nursing homes up to one-half mile from the site.

6.2 Current Land Ownership

- 6.2.1. Identify plans for temporary or permanent acquisition of lands or rights-of-way from landowners.
- 6.2.2. State whether or not the applicant has an option to purchase for each site or connecting facility route under review.

6.3 Local Zoning

- 6.3.1. Provide copies of any zoning ordinances affecting each project site and the area within one-half mile of the site boundary (provide only the pages introducing and identifying the document and directly citing the ordinance language).
- 6.3.2. Describe (1) the existing zoning and (2) the expected zoning changes needed for the project.
- 6.3.3. List the total number of acres in each existing zoning classification on each proposed site, and list the number of acres impacted by the project in each existing zoning classification.
- 6.3.4. Describe zoning changes to be requested of local government for the proposed project at each site alternative. Report the name of the entity responsible for zoning changes, the process required to make a zoning change, and the outcome or expected outcome for those changes.

6.4 Land Use Plans

- 6.4.1. Provide relevant portions of any land-use plans adopted by local governments within one-half mile of the project boundary for each site. Include not only general land-use plans, but also other relevant planning documents such as county recreation plans, farmland preservation plans, highway development plans, and sewer service area plans.
- 6.4.2. Describe how the project blends into or conflicts with any of the land-use plans and how any conflicts might be resolved.

6.5 Agriculture

- 6.5.1. Describe any farming activities at the proposed site(s), current or in the immediate past.
- 6.5.2. Identify any agricultural practices that may be affected by the project construction or operation including but not limited to irrigation systems, aerial seeding or spraying, organic farms, and drainage tiles.
- 6.5.3. Identify the number and size of parcels enrolled in farmland preservation programs that may be affected by the proposed project.

- 6.5.4. Provide specific details for mitigating or minimizing construction impacts in and around agricultural lands.
- 6.5.5. Indicate whether the project requires an Agricultural Impact Statement (AIS) from the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP).
 - 6.5.5.1. State whether the project would affect more than five acres of any one farm operation, and if the applicant has the power to condemn property (eminent domain).
 - 6.5.5.2. Provide official correspondence to and from the DATCP Agricultural Impact Program regarding the need for an AIS, and document its progress to-date.
- 6.5.6. Discuss induced voltage issues as they relate to the project areas and connecting facility routes. Provide for each power line route:
 - 6.5.6.1. The number of confined animal dairy operations within 300 feet of any proposed electric transmission or distribution centerline on or off the project site alternatives.
 - 6.5.6.2. The number of agricultural buildings located within 300 feet of the proposed centerline.
 - 6.5.6.3. A discussion of induced voltage issues as they relate to the project and its related power line routes.

6.6 Conservation Easements and Programs

- 6.6.1. Within one-half mile of each site alternative and along each connecting facility route, identify properties with conservation easement agreements.
- 6.6.2. For each conservation easement that would be crossed by a route, identify and discuss:
 - 6.6.2.1. The holder of the easement and the type of easement.
 - 6.6.2.2. The conditions of the easement.
 - 6.6.2.3. What approvals are necessary to construct on the property.
 - 6.6.2.4. The potential impacts to the landowner, including costs, penalties etc. if there is construction on the property.
 - 6.6.2.5. Whether the proposed project is consistent with the stated goals of the easement.
- 6.6.3. Identify properties within proposed project sites or connecting facility ROWs that are enrolled in the Managed Forest Law (MFL) or Forest Crop Law (FCL) programs, and discuss how they might be affected.

6.7 Communication with Potentially Affected Public

- 6.7.1. List all attempts made to communicate with and provide information to the public.
- 6.7.2. Provide a description of public information meetings and who was invited.
- 6.7.3. Submit copies of the public outreach mailings and handouts.
- 6.7.4. Provide electronic copies of written public comments (e.g., letters, emails, forms, etc.) submitted prior to filing the application with the PSC.

6.8 Demographics

- 6.8.1. Provide a description of the area within one-half mile of the proposed site(s) in terms of population, racial or ethnic composition, and income levels.
- 6.8.2. Provide the same information (required in item 6.8.1) for the township, county, or Standard Metropolitan Statistical Area as a whole.

6.9 Local Government Impacts

- 6.9.1. For each site alternative, list all services to be provided (e.g. water, fire, EMS, police, security measures, and traffic control) by the city, town, and/or county during (1) construction and (2) when the plant is in operation. Specifically, address community and facility readiness for incidents such as fires, boiler implosions/explosions, coal dust explosions and critical piping failures.
- 6.9.2. Identify all local government infrastructure and facility improvements required (e.g. sewer, water lines, railroad, police, and fire) for each site.
- 6.9.3. Describe the effects of the proposed project on city, village, town and/or county budgets for these items.
- 6.9.4. Estimate the revenue to any city, village, township, or county resulting from the project in terms of taxes, shared revenue, or payment in lieu of taxes.
- 6.9.5. Describe any other benefits to the local community at each site (e.g., employment, reduced production costs, goodwill gestures).
- 6.9.6. List any existing facilities that would be retired as a consequence of the proposed facilities at either site, and discuss any job impacts that could result from the retirement(s).
- 6.9.7. High Voltage Transmission Line Fee Distributions
If a high-voltage electric transmission line is expected to be one of the connecting facilities for this project, provide the following.
 - 6.9.7.1. An estimate of all high-voltage impact fees that must be paid to the Department of Administration by the applicants as required under Wis. Stat. §196.491(3g).
 - 6.9.7.2. Identify which components of the total project cost were used as the base cost and how the fees were calculated.
 - 6.9.7.3. Provide estimates of one-time and annual environmental fee payments that would be made to each affected city, village, town, and county.

6.10 Workforce

- 6.10.1. Provide information on the workforce size and skills required for the plant construction and operation.
- 6.10.2. Identify the expected source of the work force for construction and operation at either site.

6.11 Traffic, Roads, Railroads

- 6.11.1. Describe types of vehicles that will visit and be used on site during construction. Include vehicles used by workers arriving to and departing from the construction sites as well as construction and supply vehicles.
- 6.11.2. Describe how construction traffic will enter and leave each proposed site.
- 6.11.3. Give an estimate of traffic frequency and volume during construction. Include access traffic by workers, equipment and supply deliveries, and any earthmoving equipment.

- 6.11.4. Estimate the potential impacts of construction traffic on the local transportation system at each site. In particular provide information on:
 - 6.11.4.1. Probable routes for delivery of heavy and oversized plant equipment loads
 - 6.11.4.2. Potential for road damage and any compensation for damage.
 - 6.11.4.3. Anticipation of any traffic congestion caused by the project.
 - 6.11.4.4. Any changes in rail line usage and any interference with existing rail traffic.
 - 6.11.4.5. How heavy loads or large loads would be handled.
- 6.11.5. Describe changes in the types and frequency of traffic expected on roads and railroads due to plant operation at each site. Describe expected traffic routes, including but not limited to those for transport of ash to landfills.
- 6.11.6. Describe any permanent changes required to existing roads, railroads, traffic signals, etc., as a result of this project at each site.

6.12 Noise

- 6.12.1. For each site alternative, provide existing and projected noise measurements as described in the PSC Noise Measurement Protocol and pre-construction consultations.
- 6.12.2. Provide copies of any applicable local noise ordinances at each site.
- 6.12.3. Provide potential noise impacts of the following types of activities or equipment if applicable:
 - 6.12.3.1. Fuel delivery train couplings when coal cars are being staged and moved for emptying.
 - 6.12.3.2. Fuel unloading either through bottom dump or rotary car dumper.
 - 6.12.3.3. Noise generated from different rail car types.
 - 6.12.3.4. Unloading, dumping, and loading of fuel delivery trucks and ash/waste removal trucks.
 - 6.12.3.5. Steam blows for plant start-up.
 - 6.12.3.6. Cooling tower operation.
 - 6.12.3.7. Air separation units or other generation unit components whose noise might dominate the plant site.

6.13 Odors

Identify any odors that may be perceptible outside the plant boundary during both construction and operation.

6.14 Fogging and Icing

- 6.14.1. Provide an analysis of the potential for icing, fogging, and salt deposition due to operation of the proposed facility for each proposed site, including specific location and duration. Take into account each plume mitigation alternative being considered in the project application.
- 6.14.2. Submit fogging probability maps, icing probability maps, CaCO₃ deposition probability maps, and plume length maps for each plume mitigation alternative being considered.
- 6.14.3. Discuss and provide diagrams of any potential mitigation measures contemplated for decreasing fogging or deposition.

6.15 Residential and Urban Communities

- 6.15.1. Identify the distances from nearby residences to the proposed facilities' footprint and site boundary for each site alternative.
- 6.15.2. Discuss anticipated impacts of the proposed plant at each site alternative to residential/urban neighborhoods and communities such as noise, dust, duration of construction, time-of-day of construction, road congestion, impacts to driveways, etc.
- 6.15.3. Discuss how anticipated impacts would be mitigated.
- 6.15.4. Discuss the property value concerns that have been communicated to the applicant for each site alternative.
- 6.15.5. Discuss potential impacts to more regional communities that could result from river-related activities, air pollution, or other far-reaching effects of plant operation.
- 6.15.6. Discuss any concerns that groups or potentially impacted communities have raised.
- 6.15.7. Locate and describe hospitals, schools, daycare facilities, and retirement homes within one half mile of each proposed site alternative, or describe and locate the closest of each if one does not exist within a half mile.

6.16 Visual Impacts

- 6.16.1. Plant profiles and appearances
 - 6.16.1.1. Provide the physical area and height dimensions for the plant components at each site alternative. Submit diagrams and drawings to illustrate the power plant footprint and the heights of the plant components (e.g. boiler building, exhaust stack)
 - 6.16.1.2. Submit photo simulations of the project at each site for public-valued view sheds as discussed in pre-application meetings.
 - 6.16.1.3. Identify scenic roads within the project area(s) and discuss the potential impact of the project.
- 6.16.2. Lighting
 - 6.16.2.1. Describe each site lighting plan during project construction. Compare and contrast the intensity of the proposed lighting with the existing light regime in each site's neighborhood.
 - 6.16.2.2. Describe each site lighting plan for plant operation. Compare and contrast the intensity of the proposed lighting with the existing light regime in each site's neighborhood.
 - 6.16.2.3. Describe the potential impacts of each site's lighting on adjacent land uses.
 - 6.16.2.4. Provide copies of any applicable local ordinances that relate to the proposed lighting plans.

6.17 Parks and Recreation Areas

- 6.17.1. Identify any parks and recreation areas or trails that may be impacted by the proposed project at both sites, and the owner/manager of each recreation resource.
- 6.17.2. Discuss how short- and long-term impacts to these resources might be mitigated.

6.18 Airports

- 6.18.1. Identify the location of all private and public airports/airstrips near each project site and connecting facility.
- 6.18.2. Describe the airports/airstrips, their runways (length, orientation), and type of use.
- 6.18.3. Describe any potential for impact to aircraft safety and intrusion into navigable airspace (runway approaches).
- 6.18.4. Identify potential construction limitations and permit issues.
- 6.18.5. Provide documentation of consultation with the WisDOT Bureau of Aeronautics and the FAA.

6.19 Communication Towers

- 6.19.1. Identify the types of communication towers that are located adjacent to each power plant site and each of the proposed connecting facility routes.