

## Chapter PSC 111

## PLANS AND CERTIFICATES FOR MAJOR ELECTRIC FACILITIES

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**PSC 111.01 Purpose and authority.** (1) The purpose of this chapter is to prescribe uniform procedures for the filing and review of information submitted by utilities pursuant to section 196.491, Wis. Stats., pertaining to their advance plans and applications for certificates of public convenience and necessity for proposed bulk electric generating facilities, large electric generation facilities, and high-voltage transmission lines as defined herein. This chapter does not apply to any other proposed utility construction.

(2) These rules are promulgated pursuant to chapter 68, Laws of 1975, and section 227.014, Wis. Stats.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.02 Applicability.** (1) For all or part of a facility to be located outside Wisconsin to serve Wisconsin loads the utility shall list the size, type, cost, general location, and planned date for initial operation and shall consult in advance with the commission and furnish such additional information normally furnished under these rules as the commission may require.

(2) All portions of these rules shall apply to all advance plans and supplemental information except that for the initial set of advance plans and supplemental information the commission may, unless the information is deemed essential by the commission, waive specific requirements if:

(a) Time limitations prevent the acquisition of data;

(b) The utility, with reasonable effort, would be unable to timely submit the required data and/or information; and

(c) The commission has been notified as early as practicable that compliance may not be possible.

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(3) All portions of these rules shall apply to all applications for certificates for construction of facilities submitted under section 196.491 Wis. Stats. with the exception that for the first 2 years after promulgation of these rules the commission may, unless the information is deemed essential by the commission, waive specific requirements if:

- (a) Time limitations prevent the acquisition of data;
- (b) The utility, with reasonable effort, would be unable to timely submit data; and
- (c) The commission has been informed as early as practicable that compliance may not be possible.

(4) The commission may waive specific requirements of this chapter if it is shown that the information requested is not practical to provide in the specific instance or that it is not relevant to the particular circumstances. The commission shall consult with the department before waiving specific requirements concerning the submission of environmental information required in the advance plan.

(5) Detailed economic cost information specified by these rules is not required to be filed for facilities owned wholly by any cooperative association organized under chapter 185, Wis. Stats., for the purpose of generating, distributing, or furnishing electric energy at retail or wholesale to its members.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.04 Definitions.** As used in this chapter:

(1) "Advance plans" means the advance plans for construction of facilities as filed with the commission for review and approval pursuant to section 196.491 (2), Wis. Stats.

(2) "Bulk electric generating facility" means electric generating equipment and associated facilities designed for nominal operation at a capacity of 300,000 kilowatts or more.

(3) "Certificate" means a certificate of public convenience and necessity issued pursuant to section 196.491 (3), Wis. Stats.

(4) "Commencement of construction" means site clearing, excavation, placement of facilities or any other substantial action adversely affecting the natural environment of the site, but does not mean borings necessary to determine foundation conditions or other preconstruction monitoring to establish background information related to site or environmental suitability.

(5) "Department" means the department of natural resources.

(6) "Electric utility" means any public utility, as defined in section 196.01, which is involved in the generation, distribution and sale of electric energy, and any corporation, company, individual or association, and any cooperative association organized under chapter 185 for the purpose of generating, distributing or furnishing electric energy at retail or wholesale to its members only, which owns or operates, or plans within the next 10 years to construct, own or operate, bulk electric generating facilities, large electric generating facilities or high-voltage transmission lines in the state.

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(7) "Facility" means a bulk electric generating facility, a large electric generating facility or a high-voltage transmission line.

(8) "High-voltage transmission line" means a conductor of electric energy exceeding one mile in length designed for operation at a nominal voltage of 100 kilovolts or more, together with associated facilities. "High-voltage transmission line" does not include transmission line relocations which the commission determines are necessary to facilitate highway or airport projects.

(9) "Large electric generating facility" means electric generating equipment and associated facilities designed for nominal operation at a capacity of between 12,000 and 300,000 kilowatts.

(10) "Level 1 utility" means any electric utility which owns or operates, or plans within the next 10 years to commence to construct, own or operate at least 50 megawatts of capacity of a bulk electric generating facility (ies).

(11) "Level 2 utility" means any electric utility which owns or operates, or plans within the next 10 years to commence to construct, own or operate a total capacity of a bulk electric generating facility (ies) of between 1 and 50 megawatts or any electric utility which owns or operates, or plans within the next 10 years to commence to construct, own or operate a total capacity of a large electric generating facility (ies) greater than 50 megawatts.

(12) "Level 3 utility" means all other electric utilities which are required to file an advance plan and do not fall in the level 1 or level 2 classification.

(13) "Major utility research projects and programs" means any project or program for which the total funding is greater than \$30,000 annually.

(14) "Transmission substation" means a junction point from which more than 2 segments of high-voltage transmission line originate or terminate.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.10 Filing of plans.** Between June 15 and July 1 of each even numbered year each electric utility shall file its plan. Such plan may be part of a jointly prepared plan by 2 or more utilities. Such plan shall be compiled and submitted in a form that can be readily used and reviewed by the general public. Filing shall consist of 500 copies or such other number of copies as the commission deems necessary.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.12 Electric utility forecasts.** Part 1 of the advance plan shall be based on the information required by PSC 111.22 and 111.225 and shall be entitled "Electric Utility Forecasts". Part 1 shall contain a description of the basis for determining the projected demand of the reporting utility or group of utilities and the following information:

(1) A graph of the annual peak demands (coincident demand if a jointly prepared plan is filed) over the next 20-year period.

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(2) A tabulation of annual energy requirements for each of the next 20 years.

(3) Based on the information submitted under PSC 111.22(12), a graph of the load-duration curve (coincident load-duration curve if a jointly prepared plan is filed) for the fifth, tenth and fifteenth year after the plan is filed.

(4) Tabulated annual and monthly peak demands (coincident demands if a jointly prepared plan is filed) for each even-numbered year in the next 14-year period.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.13 Planned system expansion.** Part 2 of the advance plan shall be entitled "Planned System Expansion" and shall contain:

(1) A listing of all generating facilities for which construction is planned to commence during the next 15 years; including size, type, year of completion of construction, and general location;

(2) A listing of all existing facilities intended to be removed from service during the next 15 years; and

(3) Map(s) identifying the planned high-voltage transmission line additions for which construction is planned to start within 10 years, including voltage, planned in-service date and, if known, ownership. These maps may be reduced copies of those maps provided in response to section PSC 111.25(4).

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.135 System alternatives.** Part 3 of the advance plan shall be entitled "System Alternatives" and provide the following information:

(1) A description of the alternative methods of generation, fuel type, and general locations and listing of the reasons for selecting the method of generation, fuel type and general location as proposed in PSC 111.13(1); and

(2) For each general high-voltage transmission network alternative identified in PSC 111.25(5), provide map(s) identifying the information required by PSC 111.25(6).

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.14 Specific proposed and alternative generation sites.** Part 4 of the advance plan shall be entitled "Specific Proposed and Alternative Generation Sites" and shall identify the location of proposed and alternative specific sites for all generating facilities over 200,000 kilowatts for which a certificate of public convenience and necessity has not been applied for under section 196.491(3), Wis. Stats., but the commencement of whose construction is planned within three years. Part 4 shall contain a summary of the significant impacts of the proposed generating facilities on the environment and shall list the means by which potential adverse effects will be avoided or minimized.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

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**PSC 111.15 Proposed and alternative transmission line routes.** Part 5 of the advance plan shall be entitled "Proposed and Alternative Transmission Line Routes" and shall identify the location of tentative routes for high-voltage transmission lines in which construction is intended to be commenced in the succeeding 18 months and the alternate routes considered. Part 5 shall list the effects of such transmission lines on the environment and the means by which adverse effects will be avoided or minimized.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.16 Research programs.** Part 6 of the advance plan shall list and briefly describe (including estimated cost) each major research project and program in which the utility is directly engaged and which will continue or commence in the succeeding three years and summarize the reasons for selecting specific areas for research. The utility will also summarize its current contribution to the Electric Power Research Institute (EPRI) and similar joint research efforts and provide a listing of current jointly-financed research activities.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.17 Conservation and load management program.** Part 7 of the advance plan shall list existing planned programs and policies to discourage inefficient and excessive power use and shall describe each program or policy.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.18 Regional associations.** Part 8 of the advance plan shall describe the relationship of the utilities to each other, to regional associations, and power pools.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.21 Supplemental information.** Supplemental information necessary for a detailed evaluation of the advance plans shall be submitted as required in PSC 111.22 to PSC 111.28, inclusive. Said supplemental information will be filed with the commission between June 15 and July 1 of every even-numbered year. The commission will specify the number of copies required.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.22 Analysis of future electrical needs.** (1) The purpose of this section is to define the methods which serve as a basis for estimating future electrical needs identified in PSC 111.12 and present individual utility forecasting data. Supplemental information defined in this section shall be presented in a complete and separate chapter for each utility or group of utilities under common ownership. Such chapter will be entitled "Chapter 1—Future Electrical Noncoincident Needs" followed by the name of the submitting utility.

(2) Chapter 1 shall contain a description of the projection method used including all pertinent mathematical relationships derived for use in making the forecast. Included in the description are the following:

(a) Identification of pertinent implied and/or explicit assumptions and supporting summarized data to justify the assumptions.

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(b) Identification of the data base(s) from which the mathematical relationships were derived.

(c) Identification of any adjustments which are based upon judgments and the reasons such judgments are required.

(d) An initial listing of all minor civil divisions within the geographic area covered by the projection. This does not require a projection for each minor civil division. Any minor civil division which is served by more than one utility should be allocated to the utility which provides the major portion of electrical energy in that minor civil division. This information shall be updated in subsequent reports.

(3) Part 1 of Chapter 1, entitled "Forecasting Annual and Monthly Peak Demand and Energy", shall contain all of the descriptive information identified in (2) as it relates to forecasting annual and monthly peak demand and energy for the next 20-year period. Annual and monthly peak demand and energy shall be tabulated therein including the annual summer and annual winter peak demands.

(4) For level 1 and level 2 utilities, Part 2 of Chapter 1, entitled "Estimating Annual Load-Duration Curves", shall contain all of the descriptive information identified in (2) as it relates to estimating annual load-duration curves for each of the next 20 years. Annual results tabulated in a format specified by the commission shall be summarized therein.

(5) For level 1 utilities, Part 3 of Chapter 1, entitled "Estimating Weekly Load-Duration Curves", shall contain all of the descriptive information specified in (2) as related to estimating weekly load-duration curves for each of the next 20 years. (Actual weekly load-duration curves should not be submitted.)

(6) Each utility shall analyze the impact on its future electrical needs of various load management and conservation policy alternatives, as required by (7), (8) and (9), and identified in PSC 111.28, and shall submit a description on how each such alternative will affect future demand and energy needs. Included in the description shall be:

(a) Identification and justification of implied and/or explicit assumptions;

(b) Specific changes made in the mathematical relationships described in (2); and

(c) Any judgmental adjustments.

The commission may specify 6 months in advance of the deadline for filing this information policy alternatives to be reviewed under this subsection.

(7) Part 4 of Chapter 1, entitled "Effects of Policy Alternatives on Annual and Monthly Demand and Energy", shall contain all of the information identified in (6) as related to forecasting the effects of policy alternatives on the annual and monthly peak electrical demands and energy. Annual and monthly results shall be tabulated for every fourth year of the next 20-year period.

(8) For level 1 and level 2 utilities, Part 5 of Chapter 1, entitled "Effects of Policy Alternatives on Annual Load-Duration Curves",

shall contain all of the information specified in (6) as related to the effect of policy alternatives on the forecasted annual load-duration curves. Tabulated results in a format specified by the commission for every fourth year of the next 20 years shall be provided.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.225 Coincident state forecast.** (1) All level 1 and level 2 utilities shall cooperate and develop one coincident state forecast. A description of the method used to develop the coincident forecast shall be given including all pertinent mathematical relationships, all pertinent implied and/or explicit assumptions, pool relationships, and any judgmental adjustments. This analysis shall be presented in one jointly prepared volume entitled "Chapter 2—Coincident State Forecast".

(2) Part 1 of Chapter 2, entitled "Forecasting Annual and Monthly Coincident Demand for Wisconsin", shall contain all of the pertinent information listed in (1) as related to forecasting annual and monthly coincident state electrical demands. Tabulated annual and monthly coincident peak demands for each of the next 20 years shall be summarized in Part 1.

(3) For level 1 and level 2 utilities, Part 2 of Chapter 2, entitled "Estimating Annual Coincident Load-Duration Curves", shall contain all of the pertinent information listed in (1) as related to estimating annual coincident load-duration curves. Annual coincident load-duration curves tabulated in a format specified by the commission for each even-numbered year of the next 20 years shall also be contained in Part 2.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.23 System generation alternatives.** (1) The purpose of this section is to define the characteristics of the generation alternatives considered and to summarize the analysis of system alternatives which serve as a basis for present expansion plans identified in PSC 111.13. Supplemental information defined in this section shall be presented in a complete and separate chapter for each level 1 and level 2 utility or for any combination of such utilities. Such chapter shall be entitled "Chapter 3—Analysis of System Generation Alternatives". Requirements of such chapter include:

(a) All economic costs shall be expressed in terms of the cost levels of January 1 of the year of filing.

(b) Escalation rates for construction costs shall be provided through the next 15 years and operating and maintenance costs through the life of the plant.

(c) Sources of all cost estimates shall be identified including a description of the derivation of cost estimates where they differ from the source.

(d) Identification of any studies regarding future costs prepared for or by any utility which pertain to the advance plans.

(e) Factors which show variation with plant size shall be identified with the expected variation shown.

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(2) Part 1 of Chapter 3, entitled "Generation Alternatives", shall identify for each available generation alternative considered including major pollution control alternatives such as flue gas (or exhaust gas) scrubbers and methods for removing heat from condenser cooling waters.

(a) Capital cost plus escalation rates.

(b) Operating, maintenance and fuel costs, which shall be divided into fixed and variable costs with an identification of what factors are included and the percent such factors contribute to total cost, and expected escalation rates through the life of the plant.

(c) Expected heat rates over a range of operating capacity.

(d) Required time for scheduled maintenance.

(e) Expected forced-outage rates.

(f) Expected life of the facility in years.

(g) Estimated pollutant emissions and effluents per kilowatt hour at minimum load and design load, including SO<sub>2</sub>, NO<sub>x</sub>, particulate, ash, radioactive discharges, radioactive waste, and other waste discharges which are of general concern. Assumptions regarding coal input, efficiency of pollution abatement equipment, etc. should be specified.

(h) Waste disposal cost if not included in (b).

(3) Part 2 of Chapter 3 entitled "Fuel Availability and Cost", shall identify for each fuel type considered:

(a) Summary of domestic and foreign proven reserves.

(b) General state of the market now and in the future.

(c) Current dollar cost and expected escalation rates for total delivered costs including a cost breakdown for each major component of cost such as mined ore costs, enrichment, milling, fabrication, and transportation. Such costs shall be consistent with the costs identified in (2) (b) and should identify any significant variation due to general site location.

(4) Part 3 of Chapter 3, entitled "Selection of Alternatives for System Study", shall contain a discussion of what alternatives identified in (2) were selected for detailed system analysis and why.

(5) Part 4 of Chapter 3, entitled "Plant Retirements", shall identify plants to be retired over the next 15 years and a discussion of the reasons for such retirement.

(6) Part 5 of Chapter 3, entitled "Analysis of Projected Systems", shall contain the following:

(a) A description of the method used to analyze alternative systems including the method of individual plant loadings.

(b) A summary of each system studied including plant type, plant size, expected in-service dates, general location, percent of ownership, if known, and a generally estimated transmission system loss for each plant to be added in the next 15 years.



(c) For each system alternative identified in (b), a summarized table for each year of the next 15 years, indicating:

1. A general estimate of the transmission loss as a percentage of net generation.
2. Fuel usage by type, amount and average net efficiency of conversion.
3. Total of operating, maintenance and fuel costs.
4. Capacity factor for each unit or plant operating at 15% capacity factor or greater.
5. Quantity of significant pollutant effluents and emissions discharged.
6. Sales and purchases external to the system analyzed including the amount and total cost with the demand and energy rate specified.

(7) Part 6 of Chapter 3, entitled "Operating Characteristics of Existing System", shall identify for each plant and/or unit in service and operating at 15% capacity factor or above:

- (a) Plant and/or unit size.
  - (b) Plant and/or unit average heat rate and operating, maintenance, fuel and waste disposal costs divided into fixed and variable costs and the expected escalation rates.
  - (c) Plant and/or unit heat rates over a range of operating capacity.
  - (d) Anticipated number and duration of scheduled maintenance.
  - (e) Average forced-outage rates for future operation.
  - (f) Estimated remaining useful life.
  - (g) Estimated significant pollutant emissions and effluents discharged per kilowatt hour at minimum load and design load.
  - (h) Provide average values over the last two years for parameters in (b), (c), (d), and (g).
- (8) One year in advance of the deadline for filing plans, the commission may identify system configurations to be included in the system alternatives evaluated in the subsequent plan.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.24 Analysis of specific plant sites.** (1) The purpose of this section is to define the methods and data which serve as a basis for identifying the location of proposed and alternative specific sites. Supplemental information defined in this section shall be presented in a complete and separate volume for each generating facility over 200 megawatts for which a certificate of public convenience and necessity has not been applied for but where commencement of construction is planned within three years. A separate chapter shall be prepared for each proposed generating facility and will be entitled "Chapter 8—Analysis of Sites for" followed by the name of the proposed generating facility.

(2) Chapter 8 shall:

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- (a) Show all pertinent assumptions.
- (b) Indicate data sources for all pertinent data.
- (c) Delineate calculative procedures and assumptions for pertinent data.

(3) Part 1 of Chapter 8 shall be entitled "Site Selection Method" and shall contain the following:

(a) A list of the criteria used to select among alternative sites and, for each criterion listed, indicate how the criterion was measured, what value of the criterion was defined as acceptable or non-acceptable, and provide supporting reasons for the selection of the criterion and the method of measurement.

(b) A description of the method used to evaluate the criteria, including, if applicable:

- 1. A description of the method used to weigh each criterion; and
- 2. A list of the order of importance assigned to each criterion.

(c) A description of the methods used to combine the various criteria of different importance so that direct comparison among sites can be made.

(4) Part 2 of Chapter 8 shall describe the operating characteristics of the proposed generating facility.

(a) Section 2.1 of Part 2, entitled "General Plant Description", shall provide a general description of the proposed facility including estimated capacity factor, average heat rate, fuel type and usage, and a description of general plant systems.

(b) Section 2.2, entitled "Fuel Input", shall for fossil fuel plants contain the following:

- 1. Fuel analysis including trace minerals necessary to calculate pertinent air emissions and a discussion of the sampling technique with appropriate variance calculations.
- 2. Stack characteristics including specific stack dimensions including height, exit diameter, and design gas exit velocity and temperature.
- 3. A description of air pollution abatement equipment including as appropriate precipitator performance and scrubber performance characteristics.

(c) For nuclear facilities, section 2.2 shall contain a discussion of the fuel type, fabrication, and handling and holding systems for fresh fuel, spent fuel, and all fission products formed at the plant. A list detailing the estimated quantity and frequency of radiation released shall be provided, categorized as gaseous, liquid, and solid releases.

(d) Section 2.3, entitled "Cooling System", shall provide a discussion of the proposed cooling system including type, size, flow rates, temperature rise across the condenser, heat rejected and evaporation, and necessary chemical treatment of the cooling water.

(e) Section 2.4, entitled "Other Water Use", shall contain a description of all other major water intakes and discharges including identification of flow rates, chemical additives required, and dispersion and/or treatment methods used.

(f) Section 2.5, entitled "Waste Handling Systems", shall contain a description of major plant systems designed to handle solid waste and include:

1. A general description including identification of input and outputs to the waste handling system.

2. An analysis of trace metal discharges, if any.

3. The method of handling waste within the plant complex.

(5) Subsequent parts, starting with Part 3 of Chapter 8, shall be developed for each specific proposed and alternative site. Each such part shall contain the following sections:

- (a) Section —.1\* entitled "Definition of Impact Area", shall define the impact area based on the contaminant dispersion characteristics. At least 6 months prior to filing of the advance plan, the utility shall provide the commission with site specific dispersion characteristics and the commission will then specify an impact area.

- (b) Section —.2, entitled "Existing Air Quality", shall identify, for fossil fuel plants, existing air quality and include overlays showing the existing air quality for SO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, hydrocarbons, and particulates.

- (c) Section —.3, entitled "Existing Water Quality", shall include a description of existing surface water quality including estimated low flow measurements and pertinent measurements of water quality.

- (d) Section —.4, entitled "Land Use", shall define existing and, as available, potential land uses in the impact area. Information shall be provided in form required by the commission and include:

1. Areas of residential concentrations including incorporated residential areas and population density.

2. In the case of alternate sites for fossil fuel plants, the location of critical institutions including hospitals, nursing homes, homes for the elderly, and other facilities, in which patients with respiratory problems may be found.

3. Agricultural production, including soil productivities and actual agricultural production statistics by minor civil division.

4. Forestry production including soil productivities and present acreage and type of forested area including the location, size, and description of any state and county forests.

5. Recreation areas including organized recreational areas such as campgrounds, public lands and trout streams with an identification of the type and location of state and county facilities.

6. The estimate of energy used by the industrial/commercial sector.

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\*Place appropriate part number in blank

7. Open space lands showing scientific areas, wetlands, and areas of significant wildlife habitat.

8. Location of known historical and archeological sites.

(e) Section —.5, entitled "Air Dispersion", shall contain air dispersion characteristics including a discussion of the assumptions, summary of input data, and sample calculations of the air dispersion model and overlays of calculated isopleths for each specific site being considered. For nuclear facilities, the estimated concentration of radioisotopes released to the atmosphere shall be provided.

(f) Section —.6, entitled "Cooling System Impacts", shall provide a discussion of cooling system impacts, including, as appropriate:

1. Cooling tower and/or cooling lake plume dispersion characteristics for each specific site being considered.

2. Mixing zone calculations including the location of discharge, type, assumptions used to derive the mixing zone, and calculated isotherms for each specific site.

3. A list of discharged chemicals and radionuclides and their estimated concentration at the point of discharge, if different from ambient conditions.

4. A description of the effects on the surface waters of the consumptive use of water through evaporation from the cooling system and other consumptive uses.

5. A description of any interaction between cooling water discharges and other charges.

(g) Section —.7, entitled "Other Water Impacts", shall contain a description of the location of other major water discharges, including a list of chemicals and radionuclides and their estimated concentrations, if different from ambient, at the point of discharge; and the physical effects of dredging, placement of structures, etc.

(h) Section —.8, entitled "Solid Waste Disposal Impacts", shall identify solid waste disposal facilities and discuss characteristics including, if appropriate:

1. Site characteristics of any ash basin including soil analysis, depth to ground water, depth to bedrock, and the life of the basin for each specific site.

2. A description of the method and approximate route of shipment to any off-site disposal.

(i) Section —.9, entitled "Fuel Transport System", shall contain:

1. Identification of the method of transportation.

2. The approximate annual average fuel requirements of transportation.

3. The approximate anticipated routes and transportation cost.

(j) Section —.10, entitled "Associated Transmission Requirements", shall contain for each specific site being considered: (If this

information appears in another part of the supplemental information, it may be deleted from this chapter.)

1. Required transmission lines including terminal points, voltage, length, and construction and operating costs.
2. Pertinent load flow studies supporting the general network design.

(k) Section —.11, entitled "Impact of Abnormal Occurrence", shall only apply to proposed nuclear facilities. This section shall show the area potentially affected if each of the 9 classes of accidents, as defined by the Nuclear Regulatory Commission, should occur.

Such analysis shall be done for each accident class, for each specific site being considered and shall include the area potentially affected for meteorological conditions occurring 90% of the time. Analysis as to the potential impact should include:

1. Quantity of radiation assumed to be released.
2. Probability of that release.
3. Anticipated short- and long-term effects on human health, vegetation and animal life.
4. Identification of the assumed emergency response plan and its assumed effectiveness in making the calculation.

(6) The final part of Chapter 8 shall put forth reasons for the selection of the specific proposed site.

(7) The commission may require evaluation of additional sites providing such request is made 1½ years in advance of the deadline for filing of the advance plans.

8. Meteorological data shall be collected for each specific proposed and alternative site, as per commission specifications, for at least one year prior to filing the information in this section.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.25 Future high-voltage transmission network.** (1) The purpose of this section is to identify future transmission network needs and to present an analysis of alternatives. Information defined in this section shall be presented in a complete and separate chapter for any combination of electric utilities. Such chapter shall be entitled "Chapter 4 — Analysis of Future High-Voltage Transmission Network Alternatives", Supplemental information shall define anticipated transmission needs for a 10-year period commencing at the required submission date.

(2) Part 1 of Chapter 4, entitled "Criteria for Transmission Network Planning and Design", shall list all the principal criteria upon which the design of the transmission network is based, together with an explanation of the criteria.

(3) Part 2 of Chapter 4, entitled "Planned Transmission Network", shall contain a listing of all high-voltage transmission lines and associated transmission substations for which construction is planned to commence in the subsequent 10 years. Such listing shall include for each proposed transmission line:

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(a) An identification key which relates to mapped information required in (4).

(b) Design voltage.

(c) Planned in-service date.

(d) Estimated cost in terms of the cost levels of January 1 of the year of filing.

(e) Approximate length.

(f) Description of need including:

1. As applicable, present spatial substation loads creating need, 10 year projected load at present and projected substations, and the basis for determining the projected load.

2. Summary of load flow and stability studies, where available, and any other pertinent information, showing the necessity for the proposed line.

3. Outage rates on critical lines.

4. Transparent overlay map(s) at the scale of 1:250,000 identifying the planned transmission additions listed in (3) shall be provided including the identification of each line according to:

(a) Identification key corresponding to (3) (a).

(b) Design voltage.

(c) Company ownership, if known.

(d) Planned in-service date.

Such map(s) shall describe the general point-to-point location of proposed lines. Two sets of such map(s) shall be filed.

(5) Part 3 of Chapter 4, entitled "Network Alternatives", shall provide an identification and discussion of significant network alternatives. The following information shall be provided for each network alternative considered:

(a) Identification code corresponding to the required mapped information identified in (6).

(b) Design voltage.

(c) Planned in-service date.

(d) Estimated cost in terms of the cost levels of January 1 of the year of filing.

(e) Approximate length.

(f) A description of the advantages and disadvantages of the alternative network and the reasons for rejecting the network design.

(6) For each alternative network identified in (5), an overlay map at the scale of 1:250,000 shall be provided with each proposed transmission line identified including (only two sets of maps need be filed):

- (a) An identification code corresponding to the information provided in (5) (a).
- (b) Design voltage.
- (c) Company ownership, if known.
- (d) In-service date.
- (7) For the geographic areas defined by the map data identified in (4) and (6), overlay maps at the scale of 1:250,000 shall be prepared showing the following:
  - (a) Glacial or surficial geology.
  - (b) Topography.
  - (c) General soil associations.
  - (d) Major water resources including wetlands.
  - (e) General vegetation cover.
  - (f) Soil association productivity ratings.
  - (g) General land use areas.
  - (h) Anticipated land use areas.
  - (i) Areas of public ownership.
  - (j) Population density.

Only two sets of maps need be filed and only if there has been any change in the data.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.26 Specific transmission routes.** (1) The purpose of this section is to identify and provide information for the analysis of specific high-voltage transmission line routes on which construction is intended to commence within 18 months subsequent to the deadline for filing long-range plans. Supplemental information defined in this section shall be presented in a complete and separate chapter for any combination of electric utilities. Such chapter shall be entitled "Chapter 5 — Analysis of Specific Alternative Transmission Line Routes".

(2) Each transmission line project defined in (1) shall be a separate and individual part of the volume defined in (1).

(3) Each part identified in (2) shall contain a description of the project design, including, as applicable:

- (a) Map(s) showing proposed alternative routes and/or substation sites.
- (b) Projected date for start of construction.
- (c) Substation voltage transformations and/or line voltage.
- (d) Total length for each alternative considered.
- (e) Right-of-way width.

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- (f) Structure type, including a drawing.
- (g) Average ruling span length.
- (h) Approximate average structure height.
- (i) Any special substation profile or landscaping.
- (j) If wetland areas are involved, describe the design and any plans for insuring minimum interruption to water flow.
- (k) Any deviations from standard procedure for project construction and maintenance techniques.
- (l) Cost of project, including:
  - 1. Cost by account numbers.
  - 2. Total cost.
  - 3. Comparative cost of alternative routes.
- (4) Provide a current generalized land use map for the project area and indicate specific proposed and alternative routes and/or substation sites considered.
- (5) Provide for the specific proposed and alternative routes and/or substation sites the following summarized information:
  - (a) Status of land use plans for the project area and the conformance of specific routes to these plans, if applicable.
  - (b) Indicate the status of conformance with existing zoning ordinances.
  - (c) Summarize the impact on agricultural activities.
  - (d) Summarize the impact on developed commercial and/or industrial areas.
  - (e) Summarize the impact on cultural features including historical sites and archeological sites.
  - (f) Summarize the impact on forestry.
  - (g) Summarize the impact on recreation.
  - (h) Summarize the impact on residential areas.
  - (i) Discuss the feasibility of corridor sharing.
  - (j) Summarize the impact on natural areas.
- (6) Provide information regarding the status of contact with the affected landowners.
- (7) To the extent known, summarize the necessary permits and approvals which must be obtained for the specific proposed and alternative routes.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.27 Major utility research projects.** (1) The purpose of this section is to identify and describe all major research projects and programs which will continue over or commence in the succeeding Register, May, 1976, No. 245



three years after the deadline for the filing of the advance plan. Supplemental information defined in this section shall be presented in a complete and separate chapter for any combination of electric utilities. Such chapter shall be entitled "Chapter 6—Major Utility Research Programs".

(2) The chapter identified in (1) shall contain the following information as reasonably available:

- (a) Title of the project.
- (b) Supporting utilities.
- (c) Date of commencement and completion.
- (d) Funding level listed by each supporting utility.
- (e) Organization performing the research.
- (f) Contact person in the organization listed in (e).
- (g) Specific objectives of the project.
- (h) Specific schedule of workload.
- (i) Reason for selecting specific objectives.
- (j) Probability of success.

(k) If successful, what specific effects would it have on electric utility operation, including, as applicable:

1. Change in reliability.
2. Change in operating and maintenance costs.
3. Change in capital costs.
4. Change in impact of the construction and/or operation of the facilities.
5. Change in facility siting methods.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.28 Conservation programs.** (1) The purpose of this section is to identify and describe existing and planned programs and/or policies to discourage inefficient and excessive power use. Supplemental information defined in this section shall be presented in a complete and separate chapter for any combination of electric utilities. Such chapter shall be entitled "Chapter 7 — Conservation Programs".

(2) For ongoing programs and/or policies designed to discourage inefficient and excess power use and for such programs and/or policies which will commence in the succeeding two years, the following information shall be provided:

- (a) Title of the program or policy.
- (b) Implementing utility and/or utilities.
- (c) Description of the program or policy.
- (d) Planned starting and terminating dates.

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- (e) Funding level, if appropriate.
- (f) Probability of achieving various levels of success.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.31 Public review of advance plans.** (1) The commission shall encourage the maximum practicable public review of advance plans submitted for commission approval.

(2) To publicize the availability of the advance plans and familiarize the public with the procedure for its review, an announcement sheet shall be distributed. The announcement sheet will:

(a) Inform the public that copies of applicable portions of the plan have been filed with the main public library of each county affected by the plan and identify such libraries and that copies of applicable portions of the plan have also been filed with the county planner or county clerk and the clerk of each municipality and town in which a bulk generating facility or large electric generating facility is proposed to be located. It shall state that the applicable portion of the plan is available upon request to each public library in each municipality or town in which a bulk generating facility or large electric generating facility is proposed to be located. Copies of the advance plan will be sent to any other county planner, county clerk or public library that requests same.

(b) Describe the procedure that will be followed, including the manner of distribution of the environmental assessment, the public hearing date if known, and the opportunity to request notification of the above.

(c) Explain in what manner and by what date comments on the advance plan should be submitted.

(3) The commission shall make reasonable efforts to assure that the announcement sheet shall be circulated to the following:

(a) Local and regional units of government which have jurisdiction over the area that may be affected by the proposed plan. A request shall be made for posting the announcement sheet at the places(s) normally used for public notices.

(b) Local and regional news media in the areas affected by the plan.

(c) Groups, clubs, committees or individuals which have requested notification.

(d) Each public library in each municipality or town in which a bulk generating facility or large electric generating facility is proposed to be located.

(4) In addition to the notice of hearing sent to other parties, the commission shall send a notice of hearing to those groups, clubs, committees or individuals that have requested notification.

(5) A press release regarding such hearing shall be sent to a sufficient number of local and regional news media in the area affected by the plan to ensure public awareness. This may be in the form of the notice of hearing.

(6) The commission may, at its discretion, hold informational meetings to present major issues and alternatives under consideration and to answer questions of the public. Public notice will be made through media serving the area primarily affected by the issues under consideration.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.41 Certificate for facilities-general.** (1) Construction on a facility shall not commence until the commission shall have issued a certificate therefor.

(2) At least 20 days prior to the filing of an application for a bulk or large electric generating facility the applicant shall:

(a) Notify the department and the commission of its intention to make such application; and

(b) Consult with commission staff to determine what additional environmental information shall be required as part of the application.

(3) After consultation with the department, where applicable, the commission may waive compliance with any requirement of sections PSC 111.42 and 111.43 and section 196.491(3), Wis. Stats., to the extent necessary to restore service which has been substantially interrupted by a natural catastrophe, accident, sabotage, or act of God. A certificate will ordinarily not be required for rebuilding along the same route with equivalent construction portions of any transmission lines damaged by such causes; however, in special cases involving major reconstruction the commission may require a certificate.

(4) Three copies of each application for a certificate shall initially be filed. The commission will notify applicant of the additional number of copies required and applicant shall promptly furnish these.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

**PSC 111.42 Certificate application for bulk or large electric generating facility.** The application shall include the following:

(1) Information concerning the proposed subject and its operating characteristics:

(a) Description of all major systems and the site.

(b) Plant and/or unit rating.

(c) Division of ownership, if applicable.

(d) Estimated initial (original) capital cost broken down by major plant accounts. Identify any escalation factors used.

(e) Planned fuel, source, availability and projected unit fuel cost (cents per million Btu), both for first-year and levelized over the life of the unit or plant in first-year dollars. For the levelized cost state the assumptions made. For fossil fuel indicate heating value, chemical analysis, type of transportation (rail, water, or combination), and approximate capacity of on-site storage.

(f) Estimated annual production cost (operating and maintenance cost plus fuel cost) in first-year dollars for the first year, and levelized

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over the life of the facility in first-year dollars. Escalation factors used and other significant supporting data shall be included.

(g) Estimated annual cost (capital and production cost) in mills per net kilowatt-hour generated (in first-year dollars) annualized over the estimated life of the facility. Escalation factors used and other significant supporting data shall be included.

(h) Unit heat rates over the range of operating capacity.

(i) Estimated availability and capacity factors for future operating and the basis for such estimates.

(j) Estimated useful life based on depreciation rates established by the commission.

(k) Estimated rate of discharge of pollutants for appropriate time intervals as related to applicable regulatory standards.

(2) A discussion of the site-related factors considered including, but not limited to, availability of cooling water, availability of transportation for fuel delivery, required transmission line construction, transmission losses, and system reliability. If a certificate for required transmission line construction is not included in the application, identify for each required additional transmission line the location of termini, length in miles, and voltage.

(3) A discussion of need for the proposed addition, including the following:

(a) For level 1 and level 2 utilities or any combination thereof a discussion of need in terms of demand, energy and load-duration-curve projections as submitted under PSC 111.22(1) through (8) for the most recent approved advance plan, updated as necessary.

(b) For level 3 utilities a discussion of need in terms of projected system peak demands from PSC 111.22(3) for the most recent approved advance plan, updated as necessary.

(4) Identify the basis for selection of the proposed facility from the alternatives available as follows:

(a) For level 1 and level 2 utilities or any combination thereof identify the basis for selection of the proposed facility with reference to information included in section PSC 111.23(2) to (8), inclusive, of the advance plan most recently approved by the commission.

(b) For level 3 utilities submit a list of the alternatives to the submitted proposal considered. Provide comparative information relative to initial project cost, annual costs and other pertinent factors to indicate basis for selection of proposed addition from among the alternatives available.

(5) Provide such additional information as the commission may request including, but not limited to, information necessary for the commission to make the determinations listed in section 196.491(3)(d) 1 through 6, Wis. Stats., or to prepare a Preliminary Environmental Report and Environmental Impact Statement.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.

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**PSC 111.43 Certificate application for high-voltage transmission line.** (1) The application shall include the following descriptive information:

(a) In-service date and complete description of proposed line including approximate length, proposed structure type, design span length, conductor size and type, and foundation type.

(b) Basis for selection of transmission voltage and structure type.

(c) Location map showing the proposed specific route and termini, alternative routes and termini, and information concerning the basis for selection of the specific proposal, with reference as applicable to section PSC 111.25(2) through (7) of the last approved advance plan, updated as necessary.

(d) Information relating to need for the proposed addition and including the following information:

1. Criteria upon which the design of the proposed addition to the high voltage transmission network is based, including a concise explanation of the criteria.

2. A tabulation of available historical outage data on existing critical lines associated with the need for the proposed line.

3. A tabulation showing the approximate load and number of customers affected by an outage of critical lines associated with the proposed line.

4. Summary of load flow and stability studies (if applicable), supporting demand projections and other information considered pertinent by applicant, showing the necessity of the proposed line.

(e) Division of ownership, if applicable.

(f) Description of and basis for any associated interconnection with existing or proposed facilities of other utilities.

(g) Estimated initial (original) cost broken down by major plant accounts. Identify any escalation factors used for labor or material in preparing cost estimate.

(h) Design criteria:

1. Basic Wisconsin State Electrical Code criteria for structures and conductors.

2. Other design criteria conductors in excess of those required by the Wisconsin State Electrical Code.

(i) Such additional information not already covered as the commission may request including but not limited to information necessary for the commission to make the determinations listed in section 196.491(3)(d)1 through 6, Wis. Stats., or to prepare a Preliminary Environmental Report and Environmental Impact Statement.

(2) The foregoing subsection (1) shall not apply to the construction of any high-voltage transmission line which is begun before April 1, 1977 and for which a certificate under section 196.49, Wis. Stats., is not required as of September 30, 1975.

(3) If an Environmental Impact Statement is required under section 1.11, Wis. Stats., additional information shall be required as part of the application and shall consist of a set of overlay maps at a scale of 1 inch to 2 miles for the study area defined by commission staff showing:

- (a) Proposed alternative routes.
- (b) Glacial geology.
- (c) Topography.
- (d) General soil associations plus water resources and wetland areas.
- (e) Vegetative cover including wildlife habitat.
- (f) Generalized existing land use.
- (g) Proposed land use.
- (h) Land in public ownership.
- (i) Areas of residential concentration.
- (j) Active mines and quarries.
- (k) Soil productivities.
- (l) Radio/television towers, VORTAC, airports.
- (m) Wild rivers, scenic rivers, scenic roads.
- (n) Historical sites.
- (o) Valuable natural areas.
- (p) Existing corridors.
- (q) Population density.

**History:** Cr. Register, May, 1976, No. 245, eff. 6-1-76.