

Date Mailed
June 11, 1999

BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Joint Application of Northern States Power Company-Wisconsin,
Northern States Power Company-Minnesota, and Dairyland
Power Cooperative for Authority to Construct and Place in
Service Electric Transmission Lines and Electric Substation
Facilities for the Chisago Transmission Project, Located in
Chisago County, Minnesota, and Polk County, Wisconsin

1515-CE-102
4220-CE-155

**FINDINGS OF FACT, CONCLUSIONS OF LAW,
CERTIFICATE, AND ORDER**

Introduction

In September 1996, three electric utilities filed a joint application for issuance of a certificate of public convenience and necessity (CPCN) by the Public Service Commission of Wisconsin (Commission). Northern States Power Company-Wisconsin and Northern States Power Company-Minnesota (NSP) collaborated with Dairyland Power Cooperative (DPC) on the application. The utilities requested that the Commission authorize the construction of the electric transmission improvements for the Chisago Electric Transmission Line Project, or the “Chisago Project.”

The Chisago Project application consists of four principal elements. The utilities proposed constructing a new 38-mile, 230 kilovolt (kV) transmission line between the Chisago Substation in Chisago County, Minnesota, and the Apple River Substation in Polk County, Wisconsin. They also proposed a new 15-mile, 115 kV transmission line between the Chisago Substation and a new substation (the Lawrence Creek Substation) near Taylors Falls, Minnesota,

Dockets 1515-CE-102/4220-CE-155

rebuilding an existing 69 kV line between this new substation and the Apple River Substation, installing a new 345/230 kV transformer and 230 kV substation facilities at the Chisago Substation, and installing a new 230/161 kV transformer and 230 kV substation facilities at the Apple River Substation.

The Commission's review of this joint application has been conducted under Wis. Stat. §§ 1.12, 196.025, 196.49, and 196.491, and under Wis. Admin. Code chs. PSC 4, 111, and 112.

The joint application of NSP and DPC to construct the Chisago Project is granted, subject to conditions.

Background

By the year 2000, growth in electric demand will place northwestern Wisconsin and east-central Minnesota at risk of widespread service interruptions. In addition, the age, condition, and capacity of transmission lines in this region will require their replacement in the near future, to continue serving local loads reliably. The utilities proposed the Chisago Project as a solution to these problems with the existing electric system in northwestern Wisconsin and east-central Minnesota.

In prior planning dockets, the Commission has reviewed the Chisago Project. In Advance Plans 4, 5, and 6 (1986, 1989, and 1992), the Commission considered whether building a Chisago-Apple River transmission line would be an appropriate means of increasing the transmission system's transfer capability between western and eastern Wisconsin. Shortly thereafter, however, local reliability problems became the primary reasons for needing transmission improvements, instead of transfer capability. Seven Wisconsin utilities and one Minnesota utility prepared an "Interface Transmission Study Report" in 1995 that identified

Dockets 1515-CE-102/4220-CE-155

several alternative plans (sets of transmission system improvements) as solutions to these local reliability problems. For Advance Plan 7 the utilities proposed two of these plans (C and D) as preferred solutions. Both solutions involved a new transmission line from the Chisago Substation to the Apple River Substation. The Commission reviewed the alternatives in Advance Plan 7 and approved Plans C and D in its Advance Plan 7 Order (1996).

Upon further electrical and economic analysis, NSP and DPC developed a single hybrid version that combined aspects of the two preferred solutions: a Chisago-Apple River 230 kV line and a Stone Lake-Bay Front 161 kV line. The utilities' original joint application, in September 1996, proposed the construction of both of these lines. When electric service reliability deteriorated further in the Northern Wisconsin Region, NSP requested that the Commission separately consider the Stone Lake-Bay Front project on an advanced schedule. In November 1997, the Commission granted this request. After holding hearings in Ashland and Hayward, Wisconsin, the Commission issued an order in April 1998, approving construction of the Stone Lake-Bay Front transmission line. This new line is scheduled to begin operation in April 2001.

To the extent practicable, the Commission has attempted to coordinate its review of the Chisago Project with that of the Minnesota Environmental Quality Board (MEQB), because similar reviews and approvals are needed from that agency. Numerous other governmental agencies are involved in reviewing this project. The routes under consideration all cross the St. Croix National Scenic Riverway, which means that federal approval is also necessary from the National Park Service and the U.S. Army Corps of Engineers. Minnesota and Wisconsin agencies must each issue permits to cross a navigable waterway and wetlands, while an easement

Dockets 1515-CE-102/4220-CE-155

from the Wisconsin Department of Natural Resources (DNR) is needed to cross land it owns on one route.

Commission staff prepared both a draft and a final environmental impact statement (EIS) for this project. The Commission issued the draft EIS in September 1998, and held public information meetings jointly with the MEQB in Lindstrom, Minnesota and Dresser, Wisconsin on October 12 and 13, 1998. These meetings were convened to provide background information to the public and to receive comments on both Minnesota's draft Environmental Impact Assessment and the Commission's draft EIS. The Commission issued the final EIS in January 1999.

Public hearings were held, pursuant to due notice, on this project before Examiner Jeffrey Patzke at the Trollhaugen Convention Center in Dresser, Wisconsin. These hearings lasted from February 8 to February 18, 1999, and involved significant participation from members of the public and local representatives. Persons certified as full parties for the purpose of service are listed in Appendix A of this order. Others who appeared and testified at the hearings are listed in the Commission files for this proceeding.

Summary

This Commission order grants NSP and DPC a CPCN, authorizing construction of the Chisago Project, subject to conditions. The project will satisfy the reasonable needs of the public for an adequate supply of electric energy and is in the public interest. By building the facilities, further instances of low voltage or voltage collapse and blackouts can be avoided. The electrical problems developing in northwestern Wisconsin and east-central Minnesota raise serious concerns of public health, safety, and welfare and need to be addressed immediately. Over the

Dockets 1515-CE-102/4220-CE-155

long term, constructing the Chisago Project is also the least costly method of supporting growing demand in northwestern Wisconsin and east-central Minnesota. The project area under review includes four transmission study regions: the Northern Wisconsin Region; the Northwest Wisconsin Region; the Western Wisconsin Region; and the East-Central Minnesota Region. In all, 21 counties in the northwestern quadrant of Wisconsin and six counties in Minnesota are covered, with a total population of 1,200,000.

The Commission approves the South Crossing of the St. Croix River, subject to the condition that the transmission line must be drilled beneath the river and kept underground to a point beyond the bluffs on both sides of the river. The Commission approves the South-Washington Route immediately to the east of the river and the South-USH 8 Route to the Apple River Substation. As an alternative to the South Crossing, the Commission also approves the Dam Crossing of the St. Croix River, but this overhead crossing may be used only if the MEQB or the government agencies that regulate the National Scenic Riverway and Interstate State Park reject the South Crossing. In that case, burying the 230 kV transmission line beneath Louisiana Street through the city of St. Croix Falls is approved.

The total cost of the project is estimated to be \$ 53.5 million. Construction is expected to begin in by 2001 and be completed in 2003.

FINDINGS OF FACT

THE COMMISSION FINDS:

Project Need

Current forecasts indicate that the demand for electricity in northwestern Wisconsin and east-central Minnesota will exceed the capability of the existing transmission system within the

next one to three years. When that critical load limit is passed, the existing electric systems of NSP and DPC will no longer be capable of delivering sufficient electricity in a reliable manner. Low voltage and system overloads are the principal problems in the study area. The electric system's ability to serve local load has been jeopardized for several reasons. In addition to increased load growth, low voltage, line overloads, worn-out facilities, and outdated technology all threaten the areas' electric reliability. Any unexpected increases in load growth, plus the possibility of single or multiple contingency failures of the electric system, only compound the risk that the system will fail.

Many communities in Wisconsin are at imminent risk of blackout. The municipalities of Tony, Conrath, Sheldon, Holcombe, Donald, Hawkins, Kennan, Catawba, Prentice, Lugerville, Phillips, Iron River, Port Wing, Herbster, Cornucopia, Red Cliff, Bayfield, Washburn, Ino, Moquah, Benoit, Mason, Grand View, Drummond, Cable, Seeley, and the surrounding rural areas could lose electric service if transmission improvements are not made as soon as possible. A number of these communities are in winter peaking regions; if a blackout were to occur when the transmission system is operating at peak demand in the winter, life-threatening problems could arise.

Increases in population and in employment levels in northwestern Wisconsin and east-central Minnesota are the principal factors driving the need to improve the transmission system. Population is surging upward in east-central Minnesota, much faster than in other parts of the state, while economic growth is soaring in northwestern Wisconsin. DPC's peak load has exceeded its growth forecasts for each of the past four years. The Northern Wisconsin Region is already in jeopardy during critical periods of the year, forcing NSP to use an operating procedure

Dockets 1515-CE-102/4220-CE-155

(the “Stinson Transfer Trip Scheme”) that can control cascading outages by blacking out some communities in the event of transmission failure. The addition of the Stone Lake-Bay Front 161 kV transmission line will alleviate some of this region’s problem, but only for a short time. The record shows that low voltage problems will probably reappear in the Northern Wisconsin Region within three years.

In the Western Wisconsin Region, wide-ranging outages that have already occurred in the recent past demonstrate that the electric system is not sufficiently strong to withstand a “single contingency,” i.e. the failure of one component in the system. The need for substantial transmission improvements to solve problems in the Western Wisconsin Region will appear by 2002, when electric load is forecasted to exceed 575 MW. By the year 2002, forecasts show that a single contingency in the Northwestern Wisconsin Region will overload the transmission system and cause low voltages. The same situation is likely to occur by the year 2003 in the East-Central Minnesota Region. In addition, problems with this region’s lower-voltage distribution system need immediate correction.

Some parties questioned the accuracy of the utilities’ load growth projections. These forecasts, however, are consistent with forecasts that the Commission reviewed and approved in prior Advance Plans, and that Minnesota and other states approved in their planning dockets. A witness appearing on behalf of the Concerned River Valley Citizens (CRVC) asserted that the need for the Chisago Project has not yet been shown, because additional stability and reliability studies should first be completed to determine whether the Chisago Project will alleviate or exacerbate local electric problems. Substantial evidence in the record indicates that stability

studies are unnecessary at this stage because stability is not the limiting element on the system, and that the utilities' single contingency studies properly assessed transmission reliability.

A principal issue in this docket is whether delaying a decision would be appropriate, in order to coordinate potential solutions to local problems with solutions to regional, transfer capacity problems. The expert witness for MEQB raised the concern that planning, to date, has focused too intensely on local problems and has failed to address long-range, bulk power transfer issues. Given the imminent need for system improvements, however, a need that this record clearly defines, waiting for a single comprehensive solution is not an appropriate response. The delay involved in further study will only increase the risk of system failure. In addition, the record shows that the Chisago Project is a flexible option that would fit well with solutions to regional bulk transfer problems.

Energy Priorities

Wis. Stat. § 1.12 establishes a priority list of methods to meet energy demand. Through this statute the Legislature has declared that energy conservation and efficiency are the state's most preferred options, followed by (in descending order) noncombustible renewable energy resources, combustible renewable energy resources, natural gas, oil or coal with a sulfur content of less than one percent, and other carbon-based fuels. Wis. Stat. § 196.025 requires that the Commission implement these priorities, to the extent cost-effective, technically feasible, and environmentally sound, when making any energy-related decisions.

Demand-side management (DSM) programs are the vehicle for promoting energy conservation and efficiency in the electric industry. Relying solely on DSM to offset the need for the Chisago Project is unrealistic. The record indicates that the cost of achieving such an

energy conservation goal would be high, which means that DSM is not a cost-effective alternative by itself.

DSM can sometimes be used in conjunction with other, preferred alternatives, whose combined effect may offset the need for a transmission line. Some DSM can be employed to reduce electric load while the remainder of the area's energy demand is met with local improvements, such as installing new generation or making changes in the lower-voltage electric distribution system that serves the locality. This process is generally known as "targeted area planning" (TAP). The utilities rejected TAP solutions as alternatives to the Chisago Project because the geographic area in need of improvement is too large and because the need is too immediate. In this case, these concerns reasonably prevent the use of TAP to avoid or defer the need for the Chisago Project. TAP is intended to target a specific area, not an area as large as northwestern Wisconsin and east-central Minnesota. In addition, TAP alternatives require time to implement. Modifying consumer habits to increase conservation substantially, and installing cost-effective local solutions, are slow processes that cannot be completed quickly enough to replace the Chisago Project. NSP and DPC did complete a TAP study for the Northern Wisconsin Region. This 1996 study, which concluded that TAP could not avert the need for the Stone Lake-Bay Front transmission line in that single region, supports the conclusion that TAP cannot supplant a larger Chisago Project that is designed to serve all four regions.

The use of small generating plants, distributed throughout northwestern Wisconsin, was also considered as a method of reducing the need for transmission improvements. Distributed generation could consist of conventional fossil-fueled power plants or of plants that use renewable resources. Both types of plants are analyzed in the record.

The cost of adding new generation in northwestern Wisconsin to substitute for the Chisago Project is high. Distributed generation would need to support the area as well as the Chisago Project and do so for as long a period. Without the Chisago Project, by the year 2010 the transmission system in this area will be unable to support approximately 120 megawatts (MW) of load. Because each individual generating plant has a higher outage rate than a transmission line, though, more than 120 MW of new generation would be needed to replace the Chisago Project. If the least-expensive generating plants (combustion turbines that burn natural gas) were installed, their combined cost would be two to three times more expensive than the Chisago Project. Renewable resources fare no better, because their overall cost exceeds that of a combustion turbine.

The record discusses the viability of increasing production from existing generating plants, in lieu of making transmission improvements. Both NSP and DPC operate numerous power plants in northwestern Wisconsin. Some of them, such as the hydroelectric plants, are currently run at full capacity. Others are operated at less than their nominal capacity, but increasing the energy production from these existing plants will not replace the Chisago Project. In the Northern Wisconsin Region, insufficient generation is available to protect the area. Elsewhere in the study area, the utilities' generation capacity is operated to bolster the area's reliability when the transmission system does not have sufficient capability. This causes uneconomic generation dispatch to occur and makes it difficult to schedule plant maintenance.

Transmission Alternatives

This Commission has examined different proposals to improve the area's transmission system extensively, over a period of more than a decade. From this analysis four transmission

plans arose to correct the reliability problems of northwestern Wisconsin and east-central Minnesota. The cost, electrical performance, and environmental impact of these plans all vary. Each plan, also known as a transmission “system alternative,” has unique geographic endpoints for its major transmission lines and describes a different engineering solution to the electric problems of the area. The record shows that the Chisago Project and the Arrowhead alternative offer the best electrical performance. Compared to the Chisago Project, the Arrowhead alternative is much more expensive and would take longer to build. Overall, the Chisago Project is the least expensive transmission system alternative. It is also the system alternative that best serves all four regions in the study area over the long term. The other system alternatives would need substantial modification, incorporating some of the transmission improvements of the Chisago Project, to support all four areas in the future.

CRVC asserted that components of the King alternative could be trimmed without affecting its performance, making its cost closer to that of the Chisago Project. However, other testimony rebuts the assertion that this alternative is overbuilt.

An environmental review shows that none of the system alternatives would be less damaging than the Chisago Project. The principal environmental impact of the Chisago Project is caused by crossing the St. Croix National Scenic Riverway, but each of the other alternatives must also cross the Riverway at other locations. If an underground crossing is completed in a manner that satisfies the National Park Service and the Wisconsin DNR, the Chisago Project’s impact can be substantially mitigated. In addition, this order imposes numerous other conditions to lessen the project’s environmental impact. Overall, the Chisago Project is the shortest of the

Dockets 1515-CE-102/4220-CE-155

system alternatives and shares most of its transmission right-of-way (ROW) with existing utility corridors or roads. Proper routing of the line can minimize its general environmental impacts.

River Crossing Alternatives

Three sites to cross the St. Croix River are offered in the record. The North Crossing, located four miles north of the cities of Taylors Falls and St. Croix Falls, is not favored by any party. Construction at this site would be a new crossing of the river, which is not consistent with the National Park Service's objective of consolidating river crossings. It is not a feasible location for this project.

The South Crossing is located three miles south of Taylors Falls and St. Croix Falls. With substantial mitigation, it is a reasonable site to cross the St. Croix River. Two natural gas pipelines travel underground and cross the river at the South Crossing, with a cleared ROW 75 feet wide passing through the woodlands on each side of the river and up the bluffs. This area is an important element of the St. Croix National Scenic Riverway and needs to be protected against further aesthetic or environmental damage. The National Park Service owns and manages most of the land along the Minnesota shore, and holds scenic easements on both sides of the river. Wisconsin's portion of Interstate State Park surrounds the South Crossing. This section of the Lower St. Croix River is a popular recreational site.

Overhead transmission lines through this area are not a viable option, because they would constitute a significant new manmade feature on the landscape. The National Park Service stated that the South Crossing is only possible if it is constructed underground. An underground line that shares the natural gas pipelines' corridor to the greatest extent possible would further widen the ROW by 10 to 50 feet. NSP is willing to bury its transmission line from bluff to bluff,

approximately 3,800 feet, so the overhead structures that would be erected beyond the edges of the National Scenic Riverway are not visible to river users. Requiring that the line be constructed underground, with the eastern overhead-underground transition station located east of County Highway (CTH) S in Wisconsin and the western transition station located beyond the western bluff of the river, is reasonable to maintain the scenic integrity of the Riverway.

The gas pipelines were installed in 1960 by trenching across the river. This is no longer a feasible construction method, because its potential for adverse environmental effects is too great. Many rare or endangered species of mussel are found in this area and their habitat could be destroyed by trenching. Horizontal directional drilling is a preferred method of installing the line, although its use entails the risk that a bentonite slurry could leak into the river. If industry-standard leak detection technology is used, this risk can be reasonably mitigated.

Horizontal directional drilling may not be feasible all the way up the bluffs on each side of the river. Therefore, it is reasonable to allow the utilities to trench the transmission line from a point beyond the river's edge to the eastern transition station. The governmental agencies that manage the National Scenic Riverway and Interstate State Park, however, ultimately control what construction activity is allowable at the South Crossing. If these river agencies, as they work with the utilities, determine that horizontal directional drilling is technically feasible from bluff to bluff and is a preferable construction method, the utilities should adopt this method at the South Crossing. These agencies can also decide the appropriate mitigation measures for reclaiming the horizontal directional drilling entry and exit sites, the proper location of these sites, and the mitigation techniques for maintaining any additional right-of-way that will be needed.

Three types of underground cable technology exist for a high-voltage transmission line beneath the St. Croix National Scenic Riverway. High-pressure fluid-filled cable and self-contained fluid-filled cable both rely on conduits filled with pressurized oil, constantly bathing the cables in dielectric fluid for insulation. Pumping stations or pressure tanks are needed to maintain pressure in this liquid, and small buildings must be constructed to house the fluid reservoirs, alarms, and controls. A third technology, using extruded dielectric cables with cross-linked polyethylene insulation, does not require a pressurizing station. To avoid the need for constructing pumping stations in Interstate State Park, it is reasonable to require that NSP use extruded dielectric cable from bluff to bluff. If this cable technology allows construction at 345 kV, it is reasonable to require that the South Crossing be built to this design. Constructing the new river crossing to 345 kV design will avoid the need to return to this site for more construction activity, if the need to convert the 230 kV transmission line arises in the future.

The Environmental Impact Assessment, prepared by MEQB staff, describes routes in Minnesota that lead to the South Crossing. The Assessment does not identify any signal defect in these route alternatives that would make the South Crossing a poor choice. It is reasonable to assume that the MEQB, if it approves the Chisago Project and selects the South Crossing, can find an appropriate Minnesota route from the Chisago Substation to the South Crossing.

The third river crossing site is located at the hydroelectric dam between Taylors Falls and St. Croix Falls. The Dam Crossing is a heavily disturbed site supporting a dam, hydroelectric plant, and several distribution and transmission circuits. Its use would least affect the National Scenic Riverway. The impact on Taylors Falls of using this crossing, and on areas affected by transmission corridors in Minnesota, is described in the MEQB's Environmental Impact

Dockets 1515-CE-102/4220-CE-155

Assessment. As with the South Crossing, the Assessment does not identify any problems in Minnesota that would prevent the use of the Dam Crossing.

Routes from the Dam Crossing

The impact on St. Croix Falls of the routes associated with the Dam Crossing, however, could be significant. If an overhead 230 kV transmission line were used, it would pass through central portions of this city and would conflict with the city's development plans. An underground 230 kV transmission line could be installed beneath Louisiana Street to avoid these problems. The eastern underground-overhead transition station would be placed in the city's industrial park, which is an appropriate location for overhead facilities. An existing 69 kV transmission line that passes through St. Croix Falls on Washington Street must also be rebuilt. If the 230 kV transmission line is buried under Louisiana Street, the rebuilt 69 kV line could remain in its current location. Work on the 69 kV line would then have no impact on the community. Placing the 230 kV transmission line underneath Louisiana Street and keeping the 69 kV line unmoved will protect the development plans of St. Croix Falls and will control the aesthetic impacts of the project. Aesthetic impacts can be further reduced by using low-profile structures that are at or below tree height within 400 feet of the river on the Minnesota side and by allowing low-growing vegetation to remain in the ROW (unless the MEQB prescribes a different line configuration for the Minnesota portion of the project). If the Dam Crossing is used, the 230 kV line should be placed within the existing ROW of the 69 kV line that currently crosses the river at this site, below the dam.

If the 230 kV transmission line needs to be upgraded to 345 kV in the future, however, this could not be accomplished for the routes through St. Croix Falls associated with the Dam

Dockets 1515-CE-102/4220-CE-155

Crossing. It is unlikely that a 345 kV transmission line could be successfully buried beneath the streets of St. Croix Falls, and a 345 kV overhead line's appearance would impose significant aesthetic and socioeconomic impacts. For this reason, it is reasonable to approve the Dam Crossing and the Dam-Louisiana-Washington Route only if MEQB, or the river agencies, prohibit the use of the South Crossing.

The National Park Service's policy is to discourage further proliferation of river crossings. The utilities can reasonably conform to this policy by removing utility lines that currently cross the St. Croix National Scenic Riverway, but will become unnecessary upon construction of the Chisago Project. When the Lawrence Creek Substation is built in Minnesota, distribution lines extending from an NSP substation in St. Croix Falls across the river will no longer be needed to serve customers in Minnesota. These lines should be removed. In addition, NSP has kept a 34.5 kV line across the river, just north of the dam, although it carries no electricity. Requiring the removal of this unused subtransmission line is a reasonable method of mitigating impacts of the Chisago Project on the Scenic Riverway, regardless of which crossing is used.

Routes from the South Crossing

From the South Crossing, it is reasonable to use the South-Washington Route. The 230 kV transmission line would be installed on single-circuit, overhead structures and routed east approximately 1.5 miles, where it can intersect with an existing DPC 69 kV transmission line and share its corridor on double-circuit structures. This will require only 40 feet of new ROW, rather than the 100 feet that would be necessary if a separate new corridor were created.

Oak is a dominant species in area woodlots through which these lines would pass. Oak is highly susceptible to oak wilt disease, which often results in death within one year of initial infection. The primary cause of the disease is a fungus, which can be spread throughout a forest by sap-feeding beetles or through interconnected root systems. Initial infection in a stand of healthy trees is possible by wounding, pruning, or removing trees during spring or early summer, when the beetles are active and the fungus is producing spores. To prevent the spread of this disease, construction and maintenance activities that result in wounding, pruning, or removing oak trees should follow the standards described in the Wisconsin DNR's "Statewide Utility Guidelines for Cutting and Pruning Oaks."

The existing DPC 69 kV transmission line travels east from Poplar Lake, connecting to the Sand Lake Substation, the Garfield Substation, and the Apple River Substation. Up to the Garfield Substation, it is reasonable to use this corridor for both the 69 kV and the 230 kV transmission lines. East of the Garfield Substation, however, the 69 kV line crosses more than 500 acres of heavily wooded, environmentally sensitive land: the D. D. Kennedy Environmental Area; the Lake Wapogasset Bible Camp; and the Town of Garfield Recreational Area. Owners of these parcels have formed a partnership with the Wisconsin DNR and the YMCA to protect more wild lands in the same area. In addition, the line crosses 270 acres of restored and protected private land. These natural areas are high-quality habitat, and a poor location for a transmission line. A substantial environmental benefit can be achieved by removing the 69 kV transmission line from these areas and allowing the corridor to revegetate to the greatest extent feasible. This can be accomplished by using the South-USH 8 Route, which reroutes the 69 kV line north at the Garfield Substation, traveling on Segment VV (150th Street) to U. S. Highway

(USH) 8, then six miles east to State Trunk Highway (STH) 46. The 230 kV transmission line can follow the same corridor on double-circuit structures. At STH 46 the 69 kV line turns south while the 230 kV line continues east, sharing corridor with a different DPC 69 kV line to the Apple River Substation. Some homeowners live on this portion of STH 46. The 69 kV line should be installed on the east side of STH 46 to minimize the impact to these homes, unless using the east side of the highway is impractical. This South-USH 8 Route is a reasonable path for the Chisago Project.

DPC notes that USH 8 may be expanded in the near future, but plans for its improvement are still in the early stages. The utility is concerned that waiting for decisions about highway expansion could delay the Chisago Project. The alternative discussed in the record, however, would require DPC to secure an easement from the Town of Garfield to cross the Garfield Recreational Area. Given the town's stated opposition to negotiating an easement, this alternative does not appear feasible. DPC should stay in contact with the Wisconsin Department of Transportation to accommodate any plans to expand USH 8.

General Mitigation Measures

Archeological and historical sites are likely to exist at the South Crossing, adjacent to the St. Croix River. Under Wis. Stat. § 44.40 and Section 106 of the National Historic Preservation Act, the State Historical Society of Wisconsin (SHSW) has determined that an archeological survey will be needed before construction can commence. A survey may also be needed along the South-USH 8 Route. The utilities should follow the SHSW's recommendations concerning the type and scope of surveys to be completed.

If MEQB or the river agencies require use of the Dam Crossing, it is reasonable to authorize a variant of the South-USH 8 Route between the industrial park of St. Croix Falls and the Apple River Substation. From the industrial park, the 230 kV transmission line can follow USH 8 east for five miles to Segment VV (150th Street). DPC's 69 kV transmission line can be routed north on Segment VV, to remove it from the Town of Garfield Recreational Area and neighboring natural areas. East of Segment VV, the South-USH 8 Route can be used to complete the corridor.

Wetlands are found along the Chisago Project route. These are important environmental areas because they store runoff, regenerate groundwater, filter sediments and pollutants, and provide essential habitat for many species of wildlife. Utility construction and maintenance practices can adversely affect these areas by damaging the soil structure, altering the hydraulic characteristics of the area, and introducing opportunistic weedy species. These species, such as purple loosestrife, often crowd out native vegetation while failing to provide food or nesting habitat for wildlife. It is reasonable to require that wetlands along the transmission route be spanned, to the extent practicable. Where work must be performed in wetlands, it should be completed when the ground is frozen. If winter construction is not practicable, the use of large mats and wide track vehicles can reduce the damage imposed. To control the invasion of purple loosestrife, the utilities should survey the wetlands along the route before construction and identify portions of the route that pass through areas uninfested with purple loosestrife. For five years after construction, the utilities should then identify and remove new infestations of this plant from these areas. Removal should occur before seed dispersal and be conducted in accordance with methods recommended by the Wisconsin DNR. The utilities should confirm

Dockets 1515-CE-102/4220-CE-155

their annual inspection and removal of purple loosestrife in writing, within 90 days of undertaking these activities.

Transmission line construction also can adversely affect farming operations. If transmission structures are poorly located in fields, farmers can lose productive land or find that their wind and soil conservation practices are disrupted. Working around these structures can take additional time and can risk damage to farm implements. Utility work in farm fields can damage crops, cause soil compaction, promote weed infestation, and damage drainage tiles. To avoid or minimize these problems, it is reasonable for the utilities to work with farmers concerning the location of the transmission structures, complete their construction activities in farm fields in dry soil conditions outside of the growing season to the extent practicable, limit the use of heavy equipment in crop areas, and chisel plow farm fields, if necessary, after construction is complete.

Wholesale Competition

Under Wis. Stat. § 196.491(3)(d)7, the Commission must find that a proposed facility will not impose a material adverse impact on competition in the relevant wholesale electric service market before it can issue a CPCN. The Chisago Project provides only an incidental increase in the bulk transfer of electricity, so NSP (which owns and operates the major electric transmission facilities between eastern Wisconsin utilities and the Mid-Continent Area Power Pool) will not gain further advantage by constructing this project. The statutorily-mandated creation of independent transmission system operation by June 30, 2000, can also neutralize a utility's ability to manipulate the market through its transmission system.

FINDINGS OF ULTIMATE FACT

THE COMMISSION FINDS:

1. NSP is an electric utility as defined in Wis. Stat. § 196.491(1)(d), and a public utility as defined in Wis. Stat. § 196.01. DPC is an electric utility as defined in Wis. Stat. § 196.491(1)(d).

2. The facilities approved in this order are necessary to satisfy the reasonable needs of the public for an adequate supply of electric energy.

3. The facilities approved in this order are in the public interest after considering alternative sources of supply and routes, individual hardships, engineering, economic, safety, reliability, and environmental factors. Other alternatives brought forth are not in the public interest.

4. Alternatives that consist of energy conservation, the use of renewable resources, and the use of locally installed natural gas-fired generators are not, in comparison to the Chisago Project, cost-effective, technically feasible, and environmentally sound.

5. The facilities approved in this order will not have undue adverse impact on other environmental values.

6. The facilities approved in this order will not substantially impair the efficiency of NSP's service or provide facilities unreasonably in excess of the probable future requirements. When placed in operation, the facilities will increase the value or available quantity of service in proportion to the amount they increase the cost of service.

7. The facilities approved in this order will not unreasonably interfere with orderly land use and development plans for the area involved.

8. The facilities approved in this order will not have a material adverse impact on competition in the relevant wholesale electric service market.

9. The conditions specified in this order are in the public interest after considering individual hardships, engineering, economic, safety, reliability, and environmental factors and will not have undue adverse impact on environmental values.

10. The public convenience and necessity require completion of this project.

11. The EIS prepared for this docket, as supplemented by the hearing record, accurately describes the environmental effects of the Chisago Project and otherwise complies with Wis. Stat. § 1.11.

CONCLUSION OF LAW

THE COMMISSION CONCLUDES:

It has jurisdiction under Wis. Stat. §§ 1.11, 1.12(4), 196.025, 196.49, and 196.491 and Wis. Admin. Code chs. PSC 4, 111, and 112, to issue a certificate and order authorizing NSP and DPC to construct and place in operation the facilities approved in this order, subject to the conditions specified.

CERTIFICATE

THE COMMISSION CERTIFIES:

NSP and DPC may install and place in operation the facilities of the Chisago Project, as specified in this order, at a total estimated construction cost in Wisconsin of \$28.9 million. The cost of the project in Minnesota west of the river crossing is estimated to be \$24.6 million. The

Dockets 1515-CE-102/4220-CE-155

total estimated project cost is \$53.5 million, using the (underground) South Crossing, the South-Washington Route, and the South-USH 8 Route. If the Dam Crossing is used, the total estimated construction cost is \$42.5 million, using the (overhead) Dam Crossing, the Louisiana-Washington Route, and the South-USH 8 Route. Each utility is granted a Certificate of Public Convenience and Necessity upon the condition that it notify the Commission before proceeding with any substantial changes in the design, size, cost (10 percent), location, or ownership of the proposed facilities of the project and subject to the conditions stated in the order below.

ORDER

THE COMMISSION ORDERS:

1. The certificate is valid only if construction commences within two years of the date this order is signed.
2. NSP shall use the South Crossing, unless the MEQB or the government agencies that manage the St. Croix National Scenic Riverway or the Interstate State Parks (the National Park Service, U.S. Army Corps of Engineers, Minnesota DNR, or Wisconsin DNR reject this site.
3. At the South Crossing, the following construction techniques shall be used unless the MEQB or another regulatory agency described in paragraph 2 imposes a different standard:
 - (a) The transmission line shall be underground from the west bluff to the east bluff. The western transition station shall be beyond the western bluff of the river, while the eastern transition station shall be east of CTH S.

(b) Overhead structures approaching each bluff shall be located beyond the edges of the National Scenic Riverway and shall not be visible to river users.

(c) Horizontal directional drilling shall be used to bore beneath the St. Croix River for the line, using all industry-standard leak detection technology.

(d) Trenching may be used for the remainder of the underground portion of the route, to the transition stations on each side of the National Scenic Riverway.

(e) Extruded dielectric underground cable shall be used between the transition stations, to avoid the need for pumping stations in the National Scenic Riverway.

(f) Underground construction shall be at 345 kV if technically feasible, to avoid the need to return to this site at some point in the future for more construction.

4. If the MEQB or a river agency prohibits the use of the South Crossing, NSP may use the Dam Crossing.

5. If the Dam Crossing is used, the following construction techniques shall be used unless the MEQB or a river agency imposes a different standard:

(a) An overhead 230 kV transmission line is permitted.

(b) Low-profile structures, at or below the tree height within 400 feet of the river on the Minnesota side, are required. NSP shall allow low-growing vegetation to remain in the ROW.

(c) The 230 kV line shall be placed within the existing right-of-way of the 69 kV line that crosses the river below the dam.

6. When the Lawrence Creek Substation is built, NSP shall remove the distribution lines extending across the river from St. Croix Falls that are no longer needed to serve customers in Minnesota.

7. NSP shall remove its unused 34.5 kV line, located just north of the dam.

8. If the South Crossing is used, NSP and DPC shall use the South-Washington Route and the South-USH 8 Route to connect the new 230 kV and rebuilt 69 kV transmission lines to the Apple River Substation.

9. If the Dam Crossing is used, NSP shall use the Louisiana-Washington Route through the city of St. Croix Falls. From the city's industrial park, the 230 kV transmission line shall follow USH 8 east to Segment VV (150th Street). East of Segment VV, the South-USH 8 Route shall be used. The western transition station shall be placed adjacent to the hydroelectric plant and the eastern transition station shall be located in the industrial park.

10. To mitigate the impact of these transmission lines, the utilities shall perform the following procedures:

(a) Follow the Wisconsin DNR's standards specified in its "Statewide Utility Guidelines for Cutting and Pruning Oak" when engaging in construction or maintenance activities that result in wounding, pruning, or removing oak trees.

(b) Work with the SHSW to avoid or reduce potential adverse impacts to historical, archeological, and traditional cultural sites as construction of the project proceeds. The utilities shall perform any surveys the SHSW determines are needed along the transmission line route.

- (c) Span wetlands along the transmission route, to the extent practicable.

Each utility shall schedule wetlands construction for winter months when the ground is frozen, unless the utility notifies the Wisconsin DNR and the Commission of unforeseen problems and works out an acceptable solution. If construction must occur when the ground is unfrozen, the utility shall use large mats and wide track vehicles to reduce impacts on vegetation and the soil. Each utility shall survey wetlands along the route before construction and identify portions of the route that pass through areas uninfested with purple loosestrife. For five years after construction is completed, the utilities shall identify and remove new infestations of purple loosestrife from these areas. Removal shall occur before seed dispersal and be conducted in accordance with methods recommended by the Wisconsin DNR. The utilities shall confirm their annual inspection and removal of purple loosestrife in writing, within 90 days of undertaking these activities.

(d) Work with farmers concerning the location of the transmission structures, complete their construction activities in farm fields during dry soil conditions to the extent practicable, limit the use of heavy equipment in crop areas, and chisel plow farm fields, if necessary, after construction is complete.

11. NSP and DPC shall submit quarterly progress reports to the Commission indicating the project's major construction and environmental milestones, the extent of physical completion to date, and expenditures to date, commencing within 90 days of the date that construction commences.

Dockets 1515-CE-102/4220-CE-155

12. Upon completion of the project, NSP and DPC shall notify the Commission when the facilities of the Chisago Project are placed in service and report the actual cost segregated by plant account.

13. NSP and DPC shall work with landowners from whom ROW easements are required in determining reasonably acceptable line routing and actual physical structure placement prior to construction, in order to minimize impacts.

14. NSP and DPC shall reasonably restore and grade, to its original condition or better, any property adversely affected by trucks or equipment used for the project.

15. NSP and DPC shall inform landowners from whom ROW easements are required of their rights and obligations, as described within Wis. Stat. § 182.017.

16. Jurisdiction is retained.

Dated at Madison, Wisconsin, _____

By the Commission:

Lynda L. Dorr
Secretary to the Commission

LLD:DAL:mem:G:\Order\Pending\1515-CE-102/4220-CE-155

See attached Notice of Appeal Rights

Dockets 1515-CE-102/4220-CE-155

Dissent of Commissioner John Farrow:

I agree with my fellow Commissioners that the reliability of the electric system in northwestern Wisconsin and east-central Minnesota is in jeopardy and that transmission improvements are needed to maintain reliability in these areas. I also agree that the planning performed to date shows the Chisago Project is the least costly solution to these problems. However, the record indicates the concern of several parties that the local needs of these areas should be considered in conjunction with the regional, bulk transfer needs of eastern Wisconsin. The Wisconsin Reliability Assessment Organization (WRAO) recently issued its draft "Report on Transmission System Reinforcement in Wisconsin" and is scheduled to release a final Report in early June. I believe it is reasonable to incorporate this final Report into the record of this docket before issuing a CPCN, in case the WRAO's findings support a combined solution to local reliability and bulk transfer problems.

I also would prefer to enlarge the record on underground construction techniques before selecting the proper crossing of the St. Croix National Scenic Riverway. The record presently before us indicates that horizontal directional drilling from bluff to bluff is probably not feasible. If that is actually the case, trenching would be needed down to each side of the river at the South Crossing. Before making a decision on the crossing options, I need additional information about whether horizontal directional drilling is practicable and whether the National Park Service, Minnesota DNR, and Wisconsin DNR would allow trenching down the bluffs. In addition, completing this project at a lower voltage may make it easier to accomplish an underground crossing or reduce some of the environmental impacts of the Chisago Project. For example, construction of a 161 kV transmission line could involve lower structures than those needed for a

Dockets 1515-CE-102/4220-CE-155

230 kV transmission line, which could reduce the aesthetic impact of the project. I would be interested in reopening this docket to hear testimony on whether constructing this project at 161 kV could reasonably meet the area's needs and ease construction or environmental problems.

If reopening the docket would have the effect of delaying the completion date of the Chisago Project, I would not make these recommendations. The utilities, however, have requested that they be allowed to defer commencement of construction for two years, in part because they must secure the approval of many different government agencies for this project. Issuing a CPCN a few months from now, in order to enlarge the record on these specific areas, should not affect the decision timelines of these other agencies nor affect the overall construction schedule.

Notice of Appeal Rights

Notice is hereby given that a person aggrieved by the foregoing decision has the right to file a petition for judicial review as provided in Wis. Stat. § 227.53. The petition must be filed within 30 days after the date of mailing of this decision. That date is shown on the first page. If there is no date on the first page, the date of mailing is shown immediately above the signature line. The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

Notice is further given that, if the foregoing decision is an order following a proceeding which is a contested case as defined in Wis. Stat. § 227.01(3), a person aggrieved by the order has the further right to file one petition for rehearing as provided in Wis. Stat. § 227.49. The petition must be filed within 20 days of the date of mailing of this decision.

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

This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

Revised 9/28/98

APPENDIX A

This proceeding is not a contested case under Wis. Stat. ch. 227, therefore there are no parties to be listed or certified under Wis. Stat. § 227.47. However, the persons listed below participated.

Public Service Commission of Wisconsin (Not a party but must be served)
610 North Whitney Way
P.O. Box 7854
Madison, WI 53707-7854

NORTHERN STATES POWER COMPANY - WISCONSIN

by

Mr. John D. Wilson, Attorney
100 North Barstow Street, P.O. Box 8
Eau Claire, WI 54702-0008

NORTHERN STATES POWER COMPANY - MINNESOTA

by

Mr. Jim Alders
G04 414 Nicollet Mall
Minneapolis, MN 55401

DAIRYLAND POWER COOPERATIVE

by

Mr. Jeffrey L. Landsman, Attorney
Wheeler, Van Sickle and Anderson, S.C.
25 West Main Street, Suite 801
Madison, WI 53703

CITIES OF ST. CROIX FALLS, WI and TAYLORS FALLS, MN

by

Mr. John Bannigan, Attorney
Bannigan & Kelly, P.A.
1750 North Central Life Tower
445 Minnesota Street
St. Paul, MN 55101-2132

Dockets 1515-CE-102/4220-CE-155

RENEW WISCONSIN

by

Mr. Michael Vickerman
222 South Hamilton Street
Madison, WI 53703

CONCERNED RIVER VALLEY CITIZENS, INC. (CRVC)

by

Mr. Thomas R. Martin, Vice President
34312 Malmberg Avenue
Lindstrom, MN 55045

BIG ROCK CREEK FARM PARTNERSHIP

by

Mr. Raymond M. Roder, Attorney
Reinhart, Boerner, Van Deuren, Norris & Rieselbach, S.C.
22 East Mifflin Street, Suite 600
P.O. Box 2020
Madison, WI 53701-2020

CITIZENS' UTILITY BOARD

by

Mr. Dennis Dums
Research Director
16 North Carroll Street, Suite 300
Madison, WI 53703

WISCONSIN PUBLIC POWER, INC.

by

Mr. Michael Stuart
Mr. Scott Barnhart
1425 Corporate Center Drive
Sun Prairie, WI 53590-9109

WISCONSIN ELECTRIC POWER COMPANY

by

Mr. James D. Zakrajscheck, Attorney
231 West Michigan Street, Room P346
P.O. Box 2046
Milwaukee, WI 53201-2046

WISCONSIN ELECTRIC COOPERATIVE ASSOCIATION

by

Mr. Warren J. Day, Attorney
30 West Mifflin Street, Suite 401
Madison, WI 53703

MINNESOTA DEPARTMENT OF PUBLIC SERVICE (MDPS)

by

Ms. Ellen Gavin, Assistant Attorney General
State of Minnesota
Office of the Attorney General
525 Park Street, Suite 500
St. Paul, MN 55103

MINNESOTA ENVIRONMENTAL QUALITY BOARD (MEQB)

by

Mr. Alan R. Mitchell, Attorney
State of Minnesota
Office of the Attorney General
445 Minnesota Street, Suite 900
St. Paul, MN 55101-2127

WISCONSIN INDUSTRIAL ENERGY GROUP

by

Mr. Richard L. Olson, Attorney
Mr. Todd Smith
LaFollette & Sinykin
One East Main Street
P.O. Box 2719
Madison, WI 53701-2719

MADISON GAS AND ELECTRIC COMPANY

by

Mr. Curt F. Pawlisch, Attorney
Cullen, Weston, Pines & Bach
122 West Washington Avenue, Suite 900
Madison, WI 53703

WISCONSIN MERCHANTS FEDERATION

by

Mr. Douglas Q. Johnson
Senior Vice President and General Counsel
30 West Mifflin Street
Madison, Wisconsin 53703

Dockets 1515-CE-102/4220-CE-155

MN EQB ROUTE ADVISORY TASK FORCE

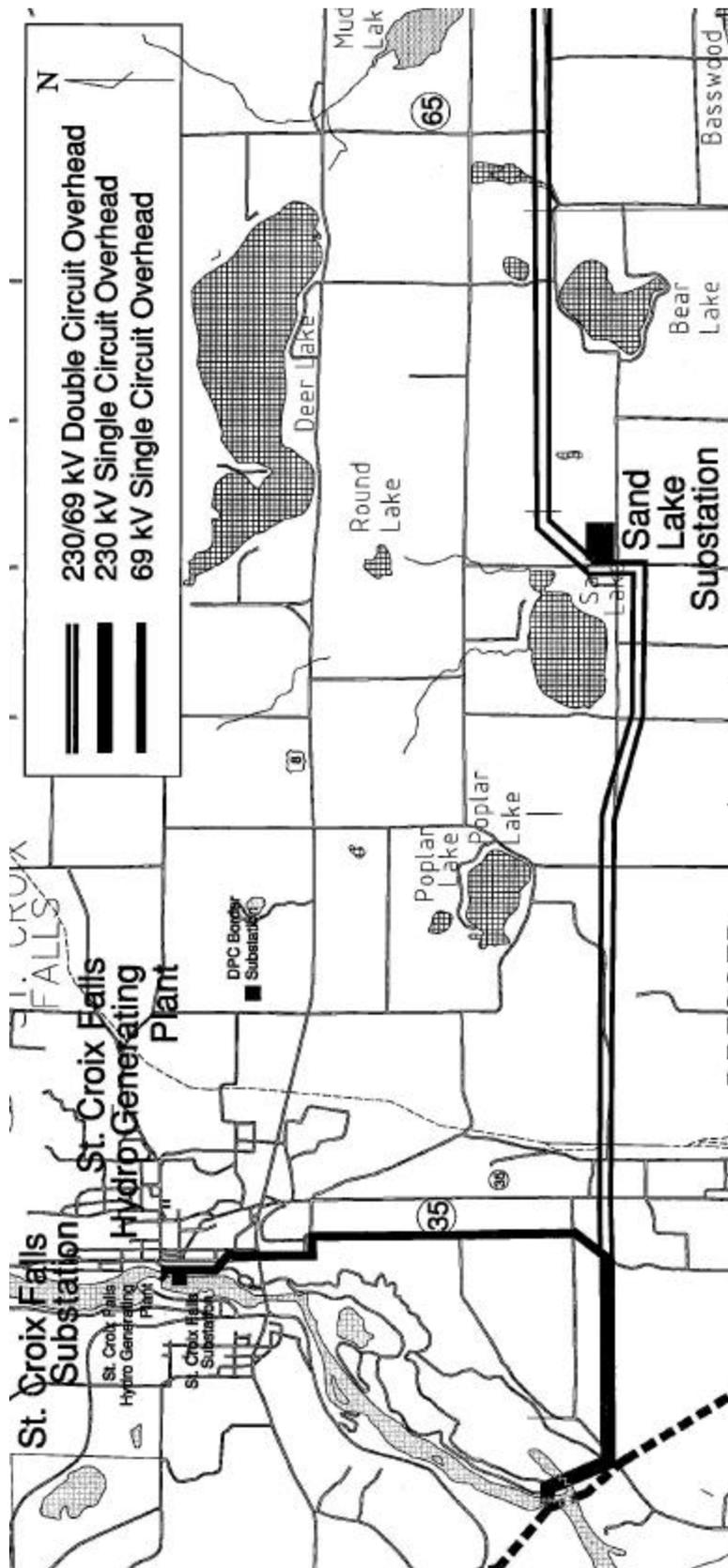
by

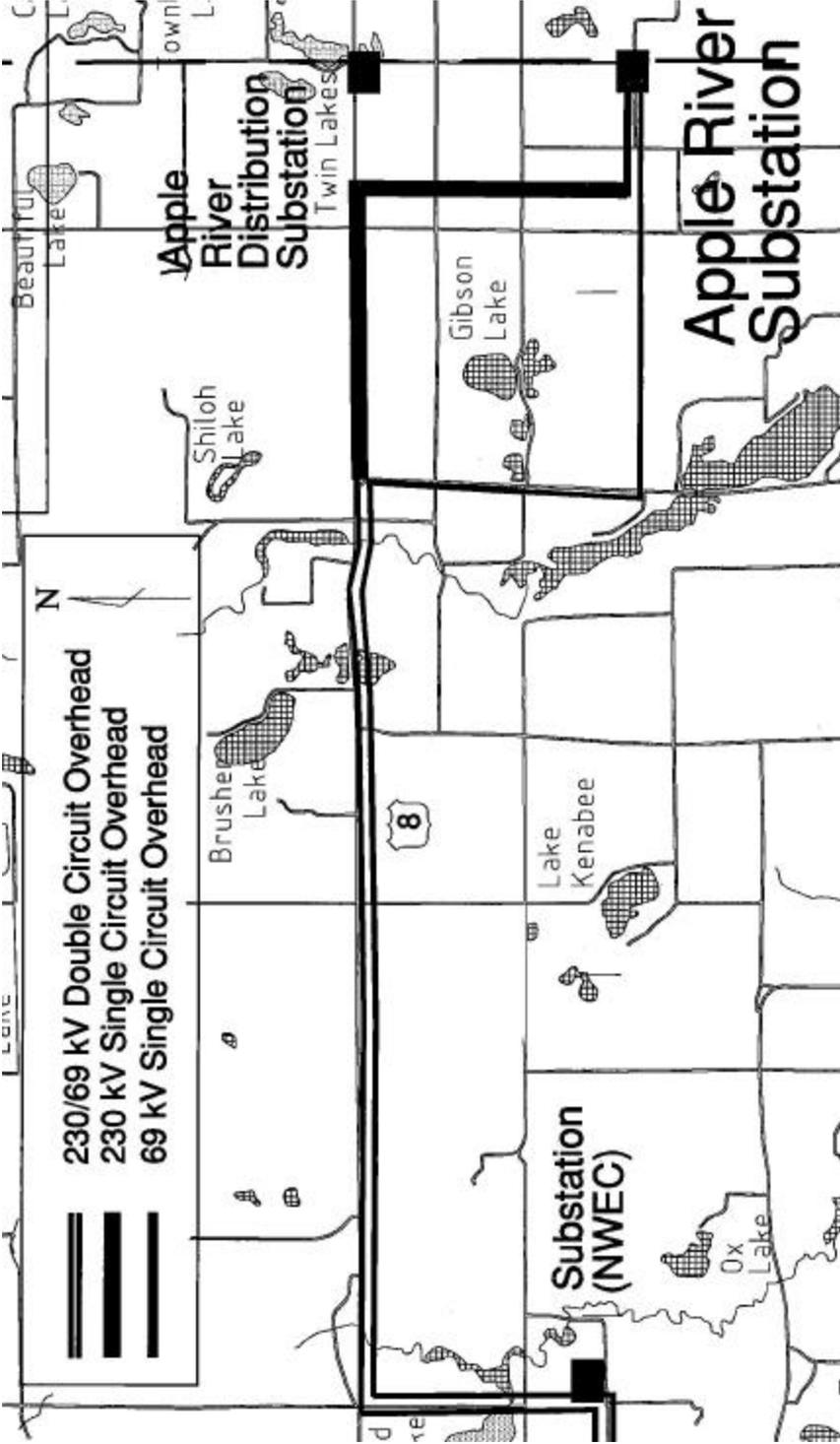
Mr. Bill Neuman
18837 Osceola Road
Shafer, MN 55074

PUBLIC SERVICE COMMISSION OF WISCONSIN

(Not a party, but must be served)

610 North Whitney Way
P.O. Box 7854
Madison, WI 53707-7854





Date Mailed February 7, 2002

BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Joint Application of Northern States Power Company-Wisconsin,
Northern States Power-Minnesota, and Dairyland Power
Cooperative for Authority to Construct and Place in Service
Electric Transmission Lines and Electric Substation
Facilities for the Chisago Transmission Project, Located in
Chisago County, Minnesota, and Polk County, Wisconsin

1515-CE-102
4220-CE-155

AMENDED ORDER

Introduction

On May 15, 2001, Xcel Energy and Dairyland Power Company (DPC) filed a request that the commission change the scope of the Chisago Transmission Project. As originally approved in 1999, the major element of this project was a 230 kV transmission line, 38 miles long, between the Chisago Substation in Chisago County, Minnesota, and the Apple River Substation in Polk County, Wisconsin.

The Commission issued a Certificate of Public Convenience and Necessity (CPCN) approving the Wisconsin portion of the Chisago Project on June 10, 1999. Two lawsuits followed the issuance of that CPCN order, but the applicants ultimately reached a settlement with the cities of Taylors Falls, Minnesota, and St. Croix Falls, Wisconsin. The applicants agreed to seek specific revisions to the Chisago Project, regarding the transmission line route and its overall design; this agreement resulted in the dismissal of the lawsuit that the city of St. Croix Falls had filed. The second appeal was filed by a private group named the Concerned River Valley Citizens (CRVC), which did not sign onto the settlement agreement. However, by

Docket 1515-CE-102, 4220-CE-155

consent of all the parties, CRVC's lawsuit was remanded to the Commission for further review of the proposed revisions.

Because the applicants need the Commission's review and approval before they can change their project, in their settlement agreement, Xcel Energy and DPC agreed either to file a new application with the Commission or to seek a reopening of the current dockets. Their request for a change in scope constitutes the latter. Wis. Stat. § 196.39 describes how the Commission can reopen its dockets and amend previous decisions. That statute provides:

196.39 (1) The commission at any time, upon notice to the public utility and after opportunity to be heard, may rescind, alter or amend any order...made by the commission, and may reopen any case following the issuance of an order in the case, for any reason.

To comply with this requirement, the Commission issued a formal "Request for Comments" on the proposed changes to the Chisago Project. The Commission solicited these comments for the purpose of hearing from parties about the merits of the proposal and about the need to conduct additional evidentiary hearings. The Commission declared that it would accept comments about whether the companies' proposed Scope Change for the Chisago Project should be approved or disapproved, and about whether the Scope Change raises any issues that were not addressed in the Commission's prior CPCN hearings. In its "Request for Comments," the Commission stated, "Any person seeking to show that such an issue does exist should also discuss whether this issue affects a substantial interest of the person, and whether an evidentiary hearing will be required to address the issue. Any person who wants the Commission to schedule an evidentiary hearing in this docket has the burden of demonstrating, by sworn affidavit, that a substantial issue of fact exists for which the hearing is necessary." The

Docket 1515-CE-102, 4220-CE-155

Commission received comments from CRVC, the city of St. Croix Falls, Xcel Energy, and DPC.

At its open meeting on January 22, 2002, the Commission considered these comments.

Findings of Fact

In the original order that approved the issuance of a CPCN, the Commission required that the applicants “notify the Commission before proceeding with any substantial changes in the design, size, cost (10 percent), location, or ownership” of the Chisago Project. Because of the substantial changes that are involved in the settlement agreement, the applicants notified the Commission pursuant to this requirement and sought the Commission’s approval of these changes. On August 27, 2001, Xcel Energy and DPC supplemented their original request with further information about the proposed Scope Change. These changes involve a reduction in transmission voltage, alterations in the transmission line route, and the addition of a new transformer at the eastern end of the project (the Apple River Substation). The approved cost for the Wisconsin portion of the 230 kV Chisago Project was \$28.9 million; the companies originally estimated that their revised project would cost \$27.9 million, but in their August filing increased that amount to a total of \$29.5 million.

Rather than a 230 kV transmission line, the applicants now propose to install 115 kV transmission facilities between the Chisago and Lawrence Creek Substations in Minnesota and 161 kV facilities between the Lawrence Creek Substation in Minnesota and the Apple River Substation in Wisconsin. Xcel Energy and DPC request that the transmission line route cross the St. Croix River at the existing hydroelectric dam (known as the Dam Crossing in the record), using single-circuit, overhead facilities. In the St. Croix Substation on the Wisconsin side of the

Docket 1515-CE-102, 4220-CE-155

river, the line would convert to underground construction and continue underground, east along Louisiana Avenue and south on Blanding Woods Road into the city industrial park. The underground 161 kV line would then turn west and continue underground beneath Pine Street and East Pine Street to the DPC Border Substation.

At the Border Substation, the 161 kV line would switch to an overhead design that would be double-circuited with an existing DPC 69 kV transmission line, in an existing right-of-way (ROW), southward to the Sand Lake Substation. This substation is located south of USH 8 at the intersection of 208th Street and 110th Avenue. The double-circuit 161/69 kV line would then continue east on 110th Avenue to 150th Street. The double-circuit line would proceed north on 150th Street to USH 8 and then east along USH 8 to STH 46. The 69 kV line would turn and follow STH 46 south for 1.5 miles and then east on an existing transmission line ROW to the Apple River Substation. The 161 kV line would continue east on USH 8 as a single-circuit line for about 0.25 mile. Near Shiloh Lake, a DPC 69 kV line (approaching from the north) would join the 161 kV line and the two lines would be double-circuited for about one mile on USH 8 before turning south toward the Apple River Substation.

This revised transmission route consists of route segments that were all previously considered at the Commission's hearings in 1999; much of it was approved as the "alternate route" in the original CPCN order. In addition to these changes, the applicants and the two cities agreed to several other project revisions:

1. The new 115 kV transmission line will replace the existing 69 kV transmission line from the Chisago County Substation to the Lawrence Creek Substation.

2. Xcel Energy will remove the existing 69 kV transmission line and three distribution circuits at the river crossing at the dam, along with the unused 34.5 kV transmission line crossing directly above the dam. Xcel Energy will also remove the 69 kV transmission line portion of a north/south line currently above ground on Main Street/Washington Street/Highway 87 in the city of St. Croix Falls and through Interstate Park. DPC will remove the existing 69 kV line from Garfield Substation to Highway 46, which passes through the D.D. Kennedy Environmental Area and the Garfield Recreation Area.
3. Xcel Energy and the city of St. Croix Falls have agreed to develop a plan for the removal of overhead distribution lines and utility poles along a section of Washington Street, in the city. Xcel Energy plans to relocate the overhead distribution lines east, to follow an existing distribution line.
4. Xcel Energy will work with the city of St. Croix Falls to perform the underground construction in conjunction with major roadwork that the city plans for Louisiana Street and Blanding Woods Road. The underground construction will require two cables per phase. Large size cables are required in order to provide adequate ampacity at the lower voltage.
5. Xcel Energy will place the underground-to-overhead transition structure for the 161 kV transmission line within DPC's Border Substation. No alterations to existing facilities at this substation are needed to accommodate the work.

6. The modifications of the Apple River Substation that were approved as part of the original project will no longer be required. Instead, the following work will need to be done:
 - a. Replace the two existing 161 kV lattice-type termination structures to accommodate motor-operated disconnect switches.
 - b. Install an additional line termination structure to accommodate the new 161 kV transmission line from the St. Croix Falls Substation.
 - c. Develop a new ring bus to include four new 161 kV circuit breakers and eight 161 kV disconnect switches. No new property is required to accommodate the new ring bus.
 - d. Install a new 161/69 kV, 67 MVA transformer.
 - e. Increase the fence size of the Apple River Substation to accommodate the new equipment.

Conclusions of Law

1. The period scheduled to receive written comments and reply comments on the applicants' proposed Scope Change constituted a reasonable opportunity to be heard under Wis. Stat. § 196.39. The comments received do not demonstrate that any person has a right to additional contested case hearings under Wis. Stat. § 227.42(1).
2. No party was prejudiced by the applicants' failure to provide formal notification of their request to reopen, as required by Wis. Admin. Code § PSC 2.63, because the comment

Docket 1515-CE-102, 4220-CE-155

period that the Commission scheduled provided all parties the same opportunity to file objections as is established by this rule.

3. The Commission has authority under Wis. Stat. §§ 196.39 and 196.395 to amend its prior CPCN order in this docket and to impose the conditions specified below.

Opinion

The Commission received the first round of comments about the applicants' proposed changes to the Chisago Project from CRVC and the city of St. Croix Falls. Reply comments were received from Xcel Energy, DPC, and the city of St. Croix Falls. These comments, which are discussed in detail below, do not raise any new substantial issue of fact that was not addressed at the Commission's prior hearings. As a result, the Commission finds that scheduling additional evidentiary hearings in this docket is unnecessary and bases this order upon the record developed to date.

CRVC filed an original set of comments on November 21, 2001, and a supplemental Addendum on December 4, 2001. Accompanying its first comments were two affidavits, from electrical engineer Bernard Hughes and from attorney Carol Overland, that identify a number of different issues. Under Wis. Stat. § 227.42(1), a right to a contested case hearing exists if a dispute of material fact is raised regarding a matter that would injure or threaten to injure a substantial interest of the person seeking a hearing, if there is no evidence of legislative intent not to protect this interest, and if the person's injury is different in kind or degree from any associated injury to the general public. CRVC requested an evidentiary hearing regarding all the issues listed in the affidavits of Mr. Hughes and attorney Overland.

Contrary to the Commission's instructions in its "Request for Comments" that affidavits must be sworn, the affidavit from Mr. Hughes was not signed or notarized.¹ The affidavit of attorney Overland, while properly sworn, does not demonstrate any expertise in matters of electrical engineering. Notwithstanding these infirmities, the Commission will address the issues presented by CRVC's comments and affidavits. These issues can be organized into eight different subject areas:

1. Adequacy of original planning studies and consideration of alternatives.
2. Appropriateness of the metrics used to demonstrate need.
3. Extent to which the need for the Chisago Project is driven by regional bulk market transactions.
4. Potential for the Chisago Project to have negative effects on voltage at the Apple River Substation.
5. Impact of the Commission's recent approval of the Arrowhead-Weston project.
6. Impact of adding more generation and improving the transmission system on the need for the line.
7. Cost of the project.
8. Increase in transmission line capacity rating.

The first three areas all deal with the need for the Chisago Project. This topic was extensively addressed in the prior hearings, including subjects such as the original planning

¹ Only on January 21, 2002, after the deadline for submitting comments and one day before the Commission had scheduled an Open Meeting to consider this docket, was a notarized affidavit faxed to the Commission.

Docket 1515-CE-102, 4220-CE-155

studies, the reliability metrics of SAIFI and CAIDI,² and the relationship between bulk market transactions and project need. In its “Request for Comments,” the Commission directed parties to discuss whether the Scope Change raised any new issues, not covered in the Commission’s prior CPCN hearings, for which additional hearings may be necessary. These first three areas of CRVC’s comments do not identify new issues; they were addressed at the previous hearings.

The fourth topic involves allegations raised by attorney Overland that the Chisago Project could exacerbate voltage problems on the transmission system because it will require reactive support in the future. As shown by the applicants’ response to CRVC’s discovery questions, this issue is unrelated to the Scope Change because the same need for reactive support (by the year 2015) existed in the original 230 kV Chisago Project.

Attorney Overland next contends that the Commission’s approval of the Arrowhead-Weston 345 kV line, and the likelihood that additional generation will be developed on the system, require a reexamination of the need for the Chisago Project. How the Arrowhead-Weston project might affect the Chisago Project was addressed in the Commission’s hearings for the Chisago Project, and in the Arrowhead-Weston hearings. The 1999 Report of the Wisconsin Reliability Assessment Organization (WRAO) was in progress at the time of the Chisago hearings, and witnesses discussed its draft contents at those hearings. The Report was also introduced as an exhibit in the Arrowhead-Weston docket. It describes the Chisago Project as an integral system reinforcement that must be completed for the local load serving needs of northwestern Wisconsin, while the Arrowhead-Weston line performs the independent function of providing regional reliability. Witnesses at the Chisago hearings also testified that modifying an

² “SAIFI” means System Average Interruption Frequency Index, and “CAIDI” means Customer Average Interruption Duration Index. *See* Wis. Admin. Code § PSC 113.0602(20).

Docket 1515-CE-102, 4220-CE-155

Arrowhead-Weston line to provide local support would impose additional delay, before necessary improvements could be completed, and could create new single-contingency transmission overload conditions. The record from these hearings shows that the electrical performance of an Arrowhead-Weston line, if redesigned to replace the Chisago Project, would be uncertain. CRVC has not raised a new issue that would require more hearings on the Scope Change, nor has it provided a basis for concluding that the Arrowhead project could now be modified in a timely manner to provide local support for the whole study area and supplant the Chisago Project.

CRVC also asserts that, since the Commission's prior hearings, more transmission and more generation have been built and these additional facilities need to be factored into a new analysis of need for the Chisago Project. Attorney Overland alleges that the prior engineering studies of the applicants and WRAO are now out of date. In response to a data request from CRVC, Xcel Energy, and DPC listed the transmission improvements that have been made since the Chisago Project application was filed in early 1996. Most of these improvements were already under consideration at the time that the Commission reviewed the Chisago Project, and were itemized in the MAPP Regional Plan, issued December 3, 1998. Only four of the listed improvements were not in the 1998 MAPP Plan: the Stone Lake-Gingles-Bayfront project, the Eau Claire transformer replacement, the Eau Claire capacitors, and the Jeffers Substation. The Stone Lake-Gingles-Bayfront transmission line was originally part of the Chisago Project, but became its own transmission project that the Commission separately approved. The other three improvements were designed to address unexpected equipment failure, the Eau Claire-area voltage, and local Eau Claire-area load, respectively; they do not address the electrical needs of

Docket 1515-CE-102, 4220-CE-155

the entire Chisago Project study area (the Western Wisconsin Region, Northern Wisconsin Region, Northwestern Wisconsin Region, and Eastern Minnesota Region). In its response to CRVC discovery requests, Xcel Energy stated that it has made no generation additions, plant re-ratings, or capacity or efficiency improvements within any of these four regions since the issuance of the Chisago Project CPCN. DPC installed two 48 MW combustion turbines in Chippewa County in summer of 2001, but they will not substantially diminish the need throughout the study area that the Chisago Project is designed to address.

The next issue raised by CRVC concerns the revised costs of the Chisago Project. Commission orders routinely instruct a utility that is proposing a change in costs for a construction project to notify the Commission's chief engineer of the alteration, and to explain the reason for the change. In the Chisago CPCN, the Commission directed that the applicants must notify the Commission before proceeding if the cost of the project were to change by more than 10 percent. The original order approved an estimated construction cost of \$28.9 million for the Wisconsin portion of the project. The revised project is now estimated to cost \$29.5 million. This is a cost increase of just 2 percent, and by itself would not trigger any notification requirement under the Commission's order.

CRVC asserts that the cost of this project should also include the cost of the additional line losses that will be incurred, because of the voltage reduction from 230 kV to 115/161 kV. It asked Xcel Energy and DPC discovery questions on this subject, but the applicants responded that they have not compared the economic value of losses and cannot estimate the economic impact of the increase in losses associated with the lower-voltage project. The applicants did, however, perform an economic analysis of its Scope Change, comparing it to a 161 kV project

Docket 1515-CE-102, 4220-CE-155

and to two other alternatives. This analysis can be found in the “Chisago Electric Reliability Project Hybrid 115/161 kV Analysis” (September 17, 2001), which Xcel Energy prepared and submitted to CRVC and to the Commission. The utility estimated the overall costs of two Chisago options (161 kV and 115/161 kV) and two Advance Plan 7 system alternatives.³ For comparability, the cost of East Central Minnesota load serving improvements was included for each alternative. The economic analysis assigned loss penalties to the 115/161 kV Scope Change alternative and to the two system alternatives. Even so, the study concluded that the 115/161 kV proposal would be less expensive than any of the three alternatives.

The issue of line losses was also raised at the prior Chisago hearings. In its 1999 Environmental Impact Statement (EIS) for the Chisago Project, the Commission analyzed line losses for both a 230 kV and a 161 kV alternative. This independent analysis concluded that, even at 161 kV, the Chisago Project would be less expensive overall than any system alternative. Since Xcel Energy’s “Chisago Electric Reliability” report confirms that a 115/161 kV project is even less expensive than the 161 kV alternative, the Commission finds that the Chisago Project, as now proposed, is the least costly option.

Finally, CRVC alleges that the Hybrid Plan will “greatly increase” the capacity of the Chisago Project transmission line, and suggests that the purpose of the project may be changing from local load serving to bulk transfers. The 230 kV transmission line had a capacity of 774 MVA (summer rating). Although the overhead 161 kV portion of the new line will have a higher capacity of 868 MVA (summer rating), the underground portion of the transmission line is only 742 MVA. As a result, the revised project will actually have less capacity than the

³ The alternatives from Advance Plan 7 that Xcel Energy evaluated were a Sandstone-Washco 161 kV transmission line and a Hwy 70-Apple River 161 kV transmission line.

Docket 1515-CE-102, 4220-CE-155

original Chisago Project. The amount of power that the line will carry is a function of the impedance of the line and of the transformers at each end. A 115/161 kV transmission line will have substantially more impedance than the 230 kV proposal, which means this lower-voltage line will carry less power in virtually any dispatch scenario than a 230 kV transmission line.

The comments received only identified issues that were addressed at the Commission's prior hearings on the Chisago Project. As a result, the applicants' Scope Change does not present a dispute of material fact regarding a matter that would injure or threaten to injure any person's substantial interest and does not give any person a right to additional contested case hearings.

In addition to these comments on the substance of the Scope Change, CRVC protests that the applicants failed to serve it with copies of the Scope Change request, which violated Commission rules and deprived CRVC of the opportunity to object to a reopening. Under Wis. Admin. Code §§ PSC 2.61 and 2.63, a petition to reopen must be served on all parties to the proceeding, and objections to a petition may be filed with the Commission.⁴ The applicants did neglect this duty to serve copies of their request to reopen the docket upon CRVC, but they allege that CRVC already had ample knowledge that such a request would be made, because it had stipulated in Polk County Circuit Court to remand the Chisago Project to the Commission for further proceedings on the negotiated project changes. Xcel Energy asserts that, by agreeing to this remand, CRVC had assented to a reopening of the docket.

⁴ Wis. Admin. Code § PSC 2.63 provides that petitions for reopening "shall be served in the same manner as applications for rehearing." It further states, "Objections to a petition may be filed and served in the same manner as objections to an application for rehearing. Petitions for reopening and objections thereto shall be accompanied by a certificate showing the names of the persons upon whom service was made and the date and manner of service." Under Wis. Admin. Code § PSC 2.61(1), applications for rehearing must be served upon all parties to a proceeding. This rule allows other parties seven days after the date of service to file any objections.

The Commission need not determine whether CRVC waived its rights by stipulating to a remand, because CRVC never actually lost the opportunity granted by Commission rules to object to the applicants' proposal. In fact, when the Commission issued its "Request for Comments" on the Scope Change it expanded CRVC's right to protest. Not only did the Commission grant CRVC the ability to file any objections it chose, but it also gave CRVC the right to argue for further hearings in the docket. While Wis. Admin. Code § PSC 2.61(1) specifies that objections to a reopening request must be filed within seven days, the Commission scheduled an extended period for filing both initial comments and reply comments. CRVC, which performed discovery and submitted lengthy comments objecting to the Scope Change, offered no argument that the applicants' failure to formally notify it of the request to reopen prejudiced CRVC. For these reasons, the Commission finds that CRVC did receive the benefit of the rights granted by Commission rules that address reopening requests.

Certificate

The Certificate of the original CPCN order is replaced with the following text:

"Xcel Energy and DPC may install and place in operation the facilities of the Chisago Project, as specified in the applicants' Scope Change request and in the Findings of Fact. The cost of the project in Minnesota, west of the St. Croix River, is estimated to be \$24.6 million. The cost of the project in Wisconsin is estimated to be \$29.5 million. The total estimated project cost is \$54.1 million. Xcel Energy and DPC are each granted a Certificate of Public Convenience and Necessity upon the condition that they notify the Commission before proceeding with any substantial changes in the design, size, cost (10 percent), location, or ownership of the proposed facilities of the project and subject to the conditions stated in the order below."

Order

1. Order paragraph 1 of the original CPCN order is replaced with the following text:

“1. The CPCN is valid only if the applicants commence construction, as defined in Wis. Stat. § 196.491(1)(b), no later than one year after the latest of the following:

a. The date when this order is no longer subject to judicial review or all appeals resulting from such judicial review have been finally determined.

b. The date when all other federal, state and local approvals, permits and licenses that are required prior to the commencement of construction are no longer subject to judicial review or all appeals resulting from such judicial review have been finally determined.”

2. Order paragraph 2 of the original CPCN order is replaced with the following text:

“2. The design and route of the Chisago Project shall be as specified in the applicants’ Scope Change request and in the Findings of Fact.”

3. Order paragraphs 3 to 9 of the original CPCN order are repealed.

4. All other terms and conditions of the original CPCN order remain in effect.

5. The Commission retains jurisdiction.

Dated at Madison, Wisconsin, _____

By the Commission:

Lynda L. Dorr
Secretary to the Commission

LLD:DAL:bap:g:\order\pending\1515-CE-102, 4220-CE-155 Chisago amended order

See attached Notice of Appeal Rights

Notice of Appeal Rights

Notice is hereby given that a person aggrieved by the foregoing decision has the right to file a petition for judicial review as provided in Wis. Stat. § 227.53. The petition must be filed within 30 days after the date of mailing of this decision. That date is shown on the first page. If there is no date on the first page, the date of mailing is shown immediately above the signature line. The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

Notice is further given that, if the foregoing decision is an order following a proceeding which is a contested case as defined in Wis. Stat. § 227.01(3), a person aggrieved by the order has the further right to file one petition for rehearing as provided in Wis. Stat. § 227.49. The petition must be filed within 20 days of the date of mailing of this decision.

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

This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

Revised 9/28/98

APPENDIX A
(CONTESTED)

In order to comply with Wis. Stat. § 227.47, the following parties who appeared before the agency are considered parties for purposes of review under Wis. Stat. § 227.53.

Public Service Commission of Wisconsin
(Not a party but must be served)
610 North Whitney Way
P.O. Box 7854
Madison, WI 53707-7854

NORTHERN STATES POWER COMPANY - WISCONSIN

by
Mr. Jordan J. Hemaidan, Attorney
Michael, Best & Friedrich, LLP
One South Pinckney Street, Suite 700
P.O. Box 1806
Madison, WI 53701-1806

NORTHERN STATES POWER COMPANY - MINNESOTA

by
Mr. Jim Alders
G04 414 Nicollet Mall
Minneapolis, MN 55401

DAIRYLAND POWER COOPERATIVE

by
Mr. Jeffrey L. Landsman, Attorney
Wheeler, Van Sickle and Anderson, S.C.
25 West Main Street, Suite 801
Madison, WI 53703

CITY OF TAYLORS FALLS, MN

by
Patrick J. Kelly, P.A.
Song Lo Fawcett, P.A.
Kelly & Fawcett, P.A.
2350 USBanc Piper Jaffray Plaza
444 Cedar Street
St. Paul, MN 55101

Docket 1515-CE-102, 4220-CE-155

CITY OF ST. CROIX FALLS

by

Mr. Frank Jablonski, Attorney
Porter, Jablonski & Associates
7 North Pinckney Street
Madison, WI 53703

RENEW WISCONSIN

by

Mr. Michael Vickerman
222 South Hamilton Street
Madison, WI 53703

CONCERNED RIVER VALLEY CITIZENS, INC. (CRVC)

by

Ms. Carol A. Overland, Attorney
Overland Law Office
Pottery Place
P.O. Box 559
Red Wing, MN 55066

BIG ROCK CREEK FARM PARTNERSHIP

by

Mr. Raymond M. Roder, Attorney
Reinhart, Boerner, Van Deuren, Norris & Rieselbach, S.C.
22 East Mifflin Street, Suite 600
P.O. Box 2020
Madison, WI 53701-2020

CITIZENS' UTILITY BOARD

by

Mr. Dennis Dums
Research Director
16 North Carroll Street, Suite 300
Madison, WI 53703

WISCONSIN PUBLIC POWER, INC.

by

Mr. Michael Stuart
Mr. Scott Barnhart
1425 Corporate Center Drive
Sun Prairie, WI 53590-9109

Docket 1515-CE-102, 4220-CE-155

WISCONSIN ELECTRIC POWER COMPANY

by

Mr. Charles Cummings, Attorney
231 West Michigan Street, A292
P.O. Box 2046
Milwaukee, WI 53201-2046

WISCONSIN ELECTRIC COOPERATIVE ASSOCIATION

by

Mr. Warren J. Day, Attorney
30 West Mifflin Street, Suite 401
Madison, WI 53703

MINNESOTA DEPARTMENT OF PUBLIC SERVICE (MDPS)

by

Ms. Ellen Gavin, Assistant Attorney General
State of Minnesota
Office of the Attorney General
525 Park Street, Suite 500
St. Paul, MN 55103

MINNESOTA ENVIRONMENTAL QUALITY BOARD (MEQB)

by

Mr. Dwight S. Wagenius, Assistant Attorney General
State of Minnesota
Office of the Attorney General
900 NCL Tower
445 Minnesota Street
St. Paul, MN 55101-2127

WISCONSIN INDUSTRIAL ENERGY GROUP

by

Mr. Richard L. Olson, Attorney
Mr. Todd Smith
LaFollette & Sinykin
One East Main Street
P.O. Box 2719
Madison, WI 53701-2719

Docket 1515-CE-102, 4220-CE-155

MADISON GAS AND ELECTRIC COMPANY

by

Mr. Curt F. Pawlisch, Attorney
Cullen, Weston, Pines & Bach
122 West Washington Avenue, Suite 900
Madison, WI 53703

WISCONSIN MERCHANTS FEDERATION

by

Mr. Douglas Q. Johnson
Senior Vice President and General Counsel
30 West Mifflin Street
Madison, Wisconsin 53703

MN EQB ROUTE ADVISORY TASK FORCE

by

Mr. Bill Neuman
18837 Osceola Road
Shafer, MN 55074