U.S. Hydropower Resource Assessment

Minnesota

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U.S. Hydropower Resource Assessment for Minnesota

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ABSTRACT

The U.S. Department of Energy is developing an estimate of the undeveloped hydropower potential in the United States. The Hydropower Evaluation Software (HES) is a computer model that was developed by the Idaho National Engineering Laboratory for this purpose. HES measures the undeveloped hydropower resources available in the United States, using uniform criteria for measurement. The software was developed and tested using hydropower information and data provided by the Southwestern Power Administration. It is a menu-driven program that allows the personal computer user to assign environmental attributes to potential hydropower sites, calculate development suitability factors for each site based on the environmental attributes present, and generate reports based on these suitability factors. This report describes the resource assessment results for the State of Minnesota.

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U.S. Hydropower Resource Assessment for Minnesota

INTRODUCTION

In June 1989, the U.S. Department of Energy initiated the development of a National Energy Strategy to identify the energy resources available to support the expanding demand for energy in the United States. Public hearings conducted as part of the strategy development process indicated that undeveloped hydropower resources were not well defined. As a result, the Department of Energy established an interagency Hydropower Resource Assessment Team to ascertain the undeveloped hydropower potential. In connection with these efforts by the Department of Energy, the Idaho National Engineering Laboratory designed the Hydropower Evaluation Software (HES), which has been used to perform a resource assessment of the undeveloped conventional hydropower potential in over 30 states. This report presents the results of the hydropower resource assessment for the State of Minnesota. Undeveloped pumped storage hydropower potential is not included.

The HES was developed as a tool to measure undeveloped hydropower potential regionally or by state. The software is not intended to provide precise development factors for individual sites, but to provide regional or state totals. Because the software was developed as a generic measurement tool encompassing national issues, regional and state totals must be considered judiciously; various local issues may skew undeveloped hydropower potential totals. The information for the resource assessment was compiled from the Federal Energy Regulatory Commission's Hydroelectric Power Resources Assessment database and several other sources. Refer to DOE/ID-10338, the *User's Manual* (Francfort, Matthews, Rinehart 1991) for the specifics of the software and to DOE/ID-10430.1, the *Status Report* (Conner, Francfort, Rinehart 1996) for an overview of all resource assessment activities to date.

Model Development

Hydropower Evaluation Software, both a probability-factor computer model and a database, is a menu-driven program that is intended to be user-friendly. Computer screens and report-generation capabilities were developed to meet the needs of users nationwide. The software uses environmental attribute data for each potential site to generate an overall project environmental suitability factor (PESF) between 0.1 and 0.9. The PESF reflects the considerations that (a) environmental concerns can make a potential site unacceptable, prohibiting its development (for a suitability factor of 0.1), or (b) if there are no environmental concerns, there is a higher likelihood of site development (0.9 indicating the highest likelihood of development). A combination of attributes can result in a lower suitability factor because multiple environmental considerations would reduce the likelihood that a site may be developed to its physical potential.

Model Goal

The goal of the HES is to assemble an accurate resource database of all sites with undeveloped hydropower potential in the United States for use as a planning tool to determine the viable national hydropower potential. Undeveloped hydropower potential is not limited to the development of new sites; it also includes the development of additional hydropower-generating capacity at sites that currently have hydropower, but are not developed to their full potential. This undeveloped hydropower potential is a source of nonpolluting, renewable energy available to meet the growing power needs of the United States. The HES should help make this goal obtainable and ensure a set of uniform criteria for national assessment.

Dam Status

The effects of environmental attributes vary by dam status. The dam status classifications used in

the resource assessments (see Appendices) are as follows:

- W = Developed hydropower site with current power generation, but the total hydropower potential has not been fully developed. Only the undeveloped hydropower potential is discussed in this report.
- W/O = Developed site without current power generation. The site has some type of developed impoundment or diversion structure, but no developed hydropower generating capability.
- U = Undeveloped site. The site does not have power generation capability nor a developed impoundment or diversion structure.

ASSESSMENT RESULTS

Summary Results

A total of 40 sites (Table 1) have been identified and assessed for their undeveloped hydropower potential. The HES results for individual site capacities range from 1 kilowatt (kW) to 48 megawatts (MW). Most of the HES-modeled sites in Minnesota are small hydropower sites (only one individual site is larger than 15 MW). In fact, 60%

of the sites have individual site capacities of less than 1 MW each (Figure 1).

The nonmodeled undeveloped hydropower potential total for Minnesota was identified as 226 MW. The HES results lowers this estimate about 40% to 136 MW. The greatest reduction in undeveloped hydropower potential, by MW, occurs at sites with no structures in place (undeveloped category). These sites have an HES-modeled undeveloped hydropower potential of 14 MW, a 41 MW reduction in the estimated undeveloped hydropower potential (Figure 2). The developed sites, with power, have the lowest percentage decrease in modeled undeveloped potential capacity. The unadjusted potential is 98 MW, and the modeled capacity is 72 MW, a 27% decrease in capacity (Figure 2). As can be deducted from Figure 3, the undeveloped sites have the smallest HES-modeled average capacity per site (2.0 MW), and the developed sites with power have the highest HES-modeled average capacity per site (5.9 MW). Figure 4 illustrates a developed site at the St. Cloud Dam.

The 40 identified sites are located within 8 major river basins and several minor river basins. The number of sites per river basin range from 1 in several major rivers basins to 14 sites in the Mississippi River Basin (Figure 5). The St. Louis River Basin has the most undeveloped hydropower potential (60 MW) of the Minnesota river basins (Figure 6).

Table 1. Undeveloped hydropower potential summaries for Minnesota. The table contains the nonmodeled undeveloped nameplate potential and the HES-modeled undeveloped hydropower potential totals.

	Number of projects	Nameplate potential (MW)	HES-modeled potential (MW)
With Power	12	98.0	71.5
W/O Power	21	73.2	51.1
Undeveloped	7	54.7	13.9
State Total	40	225.9	136.5

Figure 1. Number of sites, by capacity groups, with HES-modeled undeveloped hydropower potential.

Figure 2. The nonmodeled and HES-modeled undeveloped hydropower potential.

Figure 3. The number of sites with undeveloped hydropower potential and the total megawatts of HES-modeled undeveloped hydropower potential.

Figure 4. Example of a Minnesota undeveloped site that was subsequently developed. The site, at the St. Cloud Dam (FERC 04108) on the Mississippi River, has a current capacity of 8 megawatts and annually produces about 42,000 megawatt-hours of energy.

Figure 5. Number of sites with undeveloped hydropower potential in the Minnesota river basins.

Figure 6. Megawatts of HES-modeled undeveloped hydropower potential in the Minnesota river basins.

Detailed Results

The appendices contain, in the form of HES-generated reports, detailed information about the undeveloped hydropower potential in Minnesota:

Appendix A lists the undeveloped hydropower potential by dam status groups. It includes the number of sites, nonmodeled undeveloped hydropower potential, and HES-modeled undeveloped hydropower potential.

Appendix B contains the hydropower resource assessment by river basin. For each site, it includes the project number, project name, stream name, dam status, nonmodeled undeveloped hydropower potential, and the HES-modeled undeveloped hydropower potential. Subtotals are provided for each river basin.

Appendix C lists the project numbers, plant name, stream name, if a site is Federally owned, nonmodeled undeveloped hydropower potential, and HES-modeled undeveloped hydropower potential. The sites are grouped by dam status.

Appendix D contains a resource database list for each of the 40 sites in Minnesota. Information includes plant name, stream, state, county, river basin and owner names, project number, name plate and HES-modeled undeveloped hydropower potential, the unit and plant types, dam status, latitude, longitude, and the environmental factors that the HES uses to determine the project environmental suitability factor.

OBTAINING INDIVIDUAL STATE INFORMATION

Additional copies of the hydropower resource assessment results for individual states are available and can be obtained by writing or calling the authors or the National Technical Information Service (NTIS).

Telephone Orders—(703) 487-4650. NTIS sales desk and customer services are available

between 8:30 a.m. and 5:00 p.m., Eastern Standard Time.

Fax—(703) 321-8547. Customers may fax their orders to NTIS. These orders may be charged to a NTIS deposit account, American Express, VISA, or MasterCard.

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ADDITIONAL HYDROPOWER EVALUATION SOFTWARE INFORMATION

Additional information concerning the HES can be obtained by contacting Ben Rinehart or Jim Francfort at the addresses provided below. Copies of the software and the User's Manual may also be obtained from these individuals.

Ben Rinehart, Project Manager
Idaho National Engineering Laboratory
P.O. Box 1625, MS 3830
Idaho Falls, ID 83415-3830
(208) 526-1002

Jim Francfort
Idaho National Engineering Laboratory
P.O. Box 1625, MS 3875
Idaho Falls, ID 83415-3875
(208) 526-6787

Information concerning the State of Minnesota's involvement with the resource assessment or about the identified sites may be obtained by contacting:

Richard Hvelskamp
Minnesota Department of Public Service
121 7th Place East, Suite 200
St. Paul, Minnesota 55101-2145
(612) 296-7107

REFERENCES

- Francfort, J. E., S. D. Matthews, and B. N. Rinehart, 1991, *Hydropower Evaluation Software User's Manual*, DOE/ID-10338, Idaho National Engineering Laboratory, Idaho Falls, Idaho.
- Conner, A. M., J. E. Francfort, and B. N. Rinehart, 1996, *Uniform Criteria for U.S. Hydropower Resource Assessment, Hydropower Evaluation Software Status Report-II*, DOE/ID 10430.1, Idaho National Engineering Laboratory, Idaho Falls, Idaho.

Appendix A

Summary Report

DATE: 07/01/96

H Y D R O P O W E R C A P A C I T Y S U M M A R Y

<u>State</u>	<u>Category</u>	<u>Number of Projects</u>	<u>Name Plate Capacity (KW)</u>	<u>HES Adjusted Capacity (KW)</u>
MN	With Power	12	98010	71517
	W/O Power	21	73180	51055.50
	Undeveloped	7	54742	13899.80
	STATE TOTAL	40	225932	136472.30
TOTALS	With Power	12	98010	71517
	W/O Power	21	73180	51055.50
	Undeveloped	7	54742	13899.80
GRAND TOTAL		40	225932	136472.30

Appendix B
River Basins Report

HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** River Basin CROW WING RIVER BASIN					
MN021	SYLVAN CROW WING R	W	10.00	0.50	5.00
02663	PILLAGER CROW WING R	W	1520.00	0.50	760.00
** Subtotal **			1530.00		765.00
** River Basin MINNESOTA RIVER BASIN					
10988	MINNESOTA FALLS MINNESOTA R	WO	860.00	0.10	86.00
** Subtotal **			860.00		86.00
** River Basin MINOR RIVER BASINS					
MN013	HIGH FALLS PIGEON R	U	10600.00	0.10	1060.00
MN006	BAPTISM BAPTISM R	WO	10.00	0.90	9.00
09844	POPLAR RIVER POPLAR R	WO	10.00	0.90	9.00
MN007	LOWER POPLAR POPLAR R	WO	10.00	0.90	9.00
MN008	UPPER POPLAR POPLAR R	WO	10.00	0.90	9.00
MN009	CASCADE CASCADE R	WO	10.00	0.90	9.00
MN010	BRULE NO 5 BRULE R	WO	10.00	0.50	5.00
MN011	BRULE NO 4 BRULE R	WO	10.00	0.50	5.00
MN012	BRULE NO 3 BRULE R	WO	10.00	0.50	5.00
MN014	BRIGHTDALE S BR ROOT R	WO	10.00	0.75	7.50

HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
08454	MISSISSIPPI L&D 5A MISSISSIPPI R	WO	10500.00	0.75	7875.00
04438	HOGO(SAUK CENTRE) SAUK R	WO	230.00	0.90	207.00
** Subtotal **			21420.00		9209.50
** River Basin MISSISSIPPI MAIN STREAM					
MN016	LOWER DAM MISSISSIPPI R	U	10.00	0.10	1.00
MN018	BAILEY MISSISSIPPI R	U	11200.00	0.10	1120.00
MN019	MONTICELLO MISSISSIPPI R	U	11200.00	0.10	1120.00
MN020	CLEARWATER MISSISSIPPI R	U	11200.00	0.10	1120.00
MN015	TWIN CITY L&D 1 MISSISSIPPI R	W	7200.00	0.50	3600.00
02056B	HENNEPIN ISLAND MISSISSIPPI R	W	30000.00	0.50	15000.00
09586	ST CLOUD MISSISSIPPI R	W	10.00	0.90	9.00
MN022	BRAINERD MISSISSIPPI R	W	2000.00	0.50	1000.00
MN023	GRAND RAPIDS MISSISSIPPI R	W	1000.00	0.50	500.00
02056A	LOWER DAM MISSISSIPPI R	WO	22000.00	0.50	11000.00
11175	CROWN MILL MISSISSIPPI R	WO	3400.00	0.50	1700.00
11379	COON RAPIDS MISSISSIPPI R	WO	15000.00	0.90	13500.00
MN017	ELK RIVER ELK R	WO	300.00	0.90	270.00

HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
08198	LAKE WINNIBIGOSHISH DAM MISSISSIPPI R	WO	800.00	0.50	400.00
** Subtotal **			115320.00		50340.00
** River Basin RAINY RIVER BASIN					
MN025	THIEF RIVER FALLS RED LAKE R	W	250.00	0.90	225.00
MN026	PISGAH OTTER TAIL R	W	10.00	0.90	9.00
05627	ORWELL OTTER TAIL R	WO	500.00	0.75	375.00
** Subtotal **			760.00		609.00
** River Basin RED RIVER BASIN					
MN024	KETTLE FALLS KETTLE CHANNEL, RAINY R	WO	8000.00	0.90	7200.00
** Subtotal **			8000.00		7200.00
** River Basin ST CROIX RIVER BASIN					
10319	KETTLE RIVER DAM KETTLE R	U	532.00	0.90	478.80
** Subtotal **			532.00		478.80
** River Basin ST LOUIS RIVER BASIN					
MN004	GRAND RAPIDS ST LOUIS R	U	10000.00	0.90	9000.00
MN001	FOND DU LAC ST LOUIS R	W	10.00	0.90	9.00
MN002	THOMSON ST LOUIS R	W	53000.00	0.90	47700.00
MN003	CLOQUET ST LOUIS R	W	3000.00	0.90	2700.00
MN005	ISLAND LAKE CLOQUET R	WO	1000.00	0.50	500.00

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HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** Subtotal **			67010.00		59909.00
** River Basin WISCONSIN RIVER BASIN					
10799	MISSISSIPPI L&D 8 MISSISSIPPI R	WO	10500.00	0.75	7875.00
** Subtotal **			10500.00		7875.00
*** Total ***			225932.00		136472.30

Appendix C
Minnesota Sites List

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	ST	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** FERC Number 10319 KETTLE RIVER DAM KETTLE R	MN	U	532.00	0.90	478.80
** Subtotal **			532.00		478.80
** FERC Number MN004 GRAND RAPIDS ST LOUIS R	MN	U	10000.00	0.90	9000.00
** Subtotal **			10000.00		9000.00
** FERC Number MN013 HIGH FALLS PIGEON R	MN	U	10600.00	0.10	1060.00
** Subtotal **			10600.00		1060.00
** FERC Number MN016 LOWER DAM MISSISSIPPI R	MN	U	10.00	0.10	1.00
** Subtotal **			10.00		1.00
** FERC Number MN018 BAILEY MISSISSIPPI R	MN	U	11200.00	0.10	1120.00
** Subtotal **			11200.00		1120.00
** FERC Number MN019 MONTICELLO MISSISSIPPI R	MN	U	11200.00	0.10	1120.00
** Subtotal **			11200.00		1120.00
** FERC Number MN020 CLEARWATER MISSISSIPPI R	MN	U	11200.00	0.10	1120.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW)	PESF	PESF * KW
** Subtotal **		11200.00		1120.00
** FERC Number 02056B HENNEPIN ISLAND MISSISSIPPI R	MN W	30000.00	0.50	15000.00
** Subtotal **		30000.00		15000.00
** FERC Number 02663 PILLAGER CROW WING R	MN W	1520.00	0.50	760.00
** Subtotal **		1520.00		760.00
** FERC Number 09586 ST CLOUD MISSISSIPPI R	MN W	10.00	0.90	9.00
** Subtotal **		10.00		9.00
** FERC Number MN001 FOND DU LAC ST LOUIS R	MN W	10.00	0.90	9.00
** Subtotal **		10.00		9.00
** FERC Number MN002 THOMSON ST LOUIS R	MN W	53000.00	0.90	47700.00
** Subtotal **		53000.00		47700.00
** FERC Number MN003 CLOQUET ST LOUIS R	MN W	3000.00	0.90	2700.00
** Subtotal **		3000.00		2700.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	ST	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** FERC Number MN015 TWIN CITY L&D 1 MISSISSIPPI R	MN	W	7200.00	0.50	3600.00
** Subtotal **			7200.00		3600.00
** FERC Number MN021 SYLVAN CROW WING R	MN	W	10.00	0.50	5.00
** Subtotal **			10.00		5.00
** FERC Number MN022 BRAINERD MISSISSIPPI R	MN	W	2000.00	0.50	1000.00
** Subtotal **			2000.00		1000.00
** FERC Number MN023 GRAND RAPIDS MISSISSIPPI R	MN	W	1000.00	0.50	500.00
** Subtotal **			1000.00		500.00
** FERC Number MN025 THIEF RIVER FALLS RED LAKE R	MN	W	250.00	0.90	225.00
** Subtotal **			250.00		225.00
** FERC Number MN026 PISGAH OTTER TAIL R	MN	W	10.00	0.90	9.00
** Subtotal **			10.00		9.00
** FERC Number 02056A LOWER DAM MISSISSIPPI R	MN	WO	22000.00	0.50	11000.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	ST	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** Subtotal **			22000.00		11000.00
** FERC Number 04438 HOGO(SAUK CENTRE) SAUK R	MN	WO	230.00	0.90	207.00
** Subtotal **			230.00		207.00
** FERC Number 05627 ORWELL OTTER TAIL R	MN	WO	500.00	0.75	375.00
** Subtotal **			500.00		375.00
** FERC Number 08198 LAKE WINNIBIGOSHISH DAM MISSISSIPPI R	MN	WO	800.00	0.50	400.00
** Subtotal **			800.00		400.00
** FERC Number 08454 MISSISSIPPI L&D 5A MISSISSIPPI R	MN	WO	10500.00	0.75	7875.00
** Subtotal **			10500.00		7875.00
** FERC Number 09844 POPLAR RIVER POPLAR R	MN	WO	10.00	0.90	9.00
** Subtotal **			10.00		9.00
** FERC Number 10799 MISSISSIPPI L&D 8 MISSISSIPPI R	MN	WO	10500.00	0.75	7875.00
** Subtotal **			10500.00		7875.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	ST	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** FERC Number 10988 MINNESOTA FALLS MINNESOTA R	MN	WO	860.00	0.10	86.00
** Subtotal **			860.00		86.00
** FERC Number 11175 CROWN MILL MISSISSIPPI R	MN	WO	3400.00	0.50	1700.00
** Subtotal **			3400.00		1700.00
** FERC Number 11379 COON RAPIDS MISSISSIPPI R	MN	WO	15000.00	0.90	13500.00
** Subtotal **			15000.00		13500.00
** FERC Number MN005 ISLAND LAKE CLOQUET R	MN	WO	1000.00	0.50	500.00
** Subtotal **			1000.00		500.00
** FERC Number MN006 BAPTISM BAPTISM R	MN	WO	10.00	0.90	9.00
** Subtotal **			10.00		9.00
** FERC Number MN007 LOWER POPLAR POPLAR R	MN	WO	10.00	0.90	9.00
** Subtotal **			10.00		9.00
** FERC Number MN008 UPPER POPLAR POPLAR R	MN	WO	10.00	0.90	9.00

HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	ST	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** Subtotal **			10.00		9.00
** FERC Number MN009 CASCADE CASCADE R	MN	WO	10.00	0.90	9.00
** Subtotal **			10.00		9.00
** FERC Number MN010 BRULE NO 5 BRULE R	MN	WO	10.00	0.50	5.00
** Subtotal **			10.00		5.00
** FERC Number MN011 BRULE NO 4 BRULE R	MN	WO	10.00	0.50	5.00
** Subtotal **			10.00		5.00
** FERC Number MN012 BRULE NO 3 BRULE R	MN	WO	10.00	0.50	5.00
** Subtotal **			10.00		5.00
** FERC Number MN014 BRIGHTDALE S BR ROOT R	MN	WO	10.00	0.75	7.50
** Subtotal **			10.00		7.50
** FERC Number MN017 ELK RIVER ELK R	MN	WO	300.00	0.90	270.00
** Subtotal **			300.00		270.00

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HYDROPOWER RESOURCE ASSESSMENT BY FERC NUMBER

Plant Name/ Stream	Dam ST Stat	Name Plate Rating (KW)	PESF	PESF * KW
** FERC Number MN024				
KETTLE FALLS	MN WO	8000.00	0.90	7200.00
KETTLE CHANNEL, RAINY R				
** Subtotal **		8000.00		7200.00
*** Total ***		225932.00		136472.30

Appendix D
Individual Resource Database List

R E S O U R C E D A T A B A S E L I S T I N G

DATE: 07/01/96

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FERC Number	Plant Name	Stream	State Name
02056A	LOWER DAM	MISSISSIPPI R	MN

County Name	River Basin
HENNEPIN	MISSISSIPPI MAIN STREAM

Class		Owner Name		
P		NORTHERN STATES POWER CO		
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
22000.00	0.50	11000.00	91000.00	45500
Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude
	ROR	MO	WO	4458.00 9315.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.75
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value	Y	0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
02056B	HENNEPIN ISLAND	MISSISSIPPI R	MN

County Name	River Basin
HENNEPIN	MISSISSIPPI MAIN STREAM

Class	Owner Name			
P	NORTHERN STATES POWER CO			
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
30000.00	0.50	15000.00	90000.00	45000
Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude
C	ROR	MO	W	4459.00 9315.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.75
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value	Y	0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
02663	PILLAGER	CROW WING R	MN

County Name	River Basin
MORRISON	CROW WING RIVER BASIN

Class	Owner Name
P	MINNESOTA PWR AND LT CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1520.00	0.50	760.00	1918.00	959

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4619.00	Longitude	9429.00
C	STG	MO	W				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
04438	HOGO(SAUK CENTRE)	SAUK R	MN

County Name	River Basin
STEARNS	MINOR RIVER BASINS

Class		Owner Name		
R		SAUK CENTRE LT & PWR CO		
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
230.00	0.90	207.00	525.00	472.50

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4545.00
				Longitude	9457.00
	STG	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
05627	ORWELL	OTTER TAIL R	MN

County Name	River Basin
OTTER TAIL	RAINY RIVER BASIN

Class	Owner Name
R	ENERGENICS SYSTEMS INC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
500.00	0.75	375.00	3000.00	2250

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4613.00
	ROR	XX	WO	Longitude	9611.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name		
08198	LAKE WINNIBIGOSHISH DAM	MISSISSIPPI R	MN		
County Name		River Basin			
ITASCA		MISSISSIPPI MAIN STREAM			
Class		Owner Name			
R		BALL CLUB ASSOC			
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)	
800.00	0.50	400.00	4400.00	2200	
Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4704.00 9332.00
	ROR	XX	WO		
Factor	Exist Prob		Factor	Exist Prob	
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
08454	MISSISSIPPI L&D 5A	MISSISSIPPI R	MN

County Name	River Basin
WINONA	MINOR RIVER BASINS

Class	Owner Name
R	FOUNTAIN CITY ASSOC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10500.00	0.75	7875.00	64000.00	48000

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4405.00 9138.00
	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
09586	ST CLOUD	MISSISSIPPI R	MN

County Name	River Basin
STEARNS	MISSISSIPPI MAIN STREAM

Class		Owner Name		
R		ST CLOUD ASSOC		
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.90	9.00	50.00	45

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4532.00
				Longitude	9408.00
	ROR	XX	W		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
09844	POPLAR RIVER	POPLAR R	MN

County Name	River Basin
COOK	MINOR RIVER BASINS

Class	Owner Name
R	NELSON,G & STRALEY J

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.90	9.00	50.00	45

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4738.00 9047.00
	ROR	XX	WO		

<u>Factor</u>	<u>Exist</u>	<u>Prob</u>	<u>Factor</u>	<u>Exist</u>	<u>Prob</u>
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
10319	KETTLE RIVER DAM	KETTLE R	MN

County Name	River Basin
PINE	ST CROIX RIVER BASIN

Class	Owner Name
R	BARR ENGR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
532.00	0.90	478.80	3200.00	2880

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4607.00
	ROR	XX	U	Longitude	9252.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
10799	MISSISSIPPI L&D 8	MISSISSIPPI R	MN

County Name	River Basin
HOUSTON	WISCONSIN RIVER BASIN

Class	Owner Name
C	UPPER MISSISSIPPI HYDRO ASSOC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10500.00	0.75	7875.00	55500.00	41625

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4334.00	Longitude	9114.00
	ROR	XX	WO				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
10988	MINNESOTA FALLS	MINNESOTA R	MN

County Name	River Basin
CHIPPEWA	MINNESOTA RIVER BASIN

Class		Owner Name		
M		GRANITE FALLS,CITY OF		
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
860.00	0.10	86.00	4100.00	410

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4450.00 9531.00
	ROR	PO	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value	Y	0.75
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105	Y	0.10
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
11175	CROWN MILL	MISSISSIPPI R	MN

County Name	River Basin
HENNEPIN	MISSISSIPPI MAIN STREAM

Class	Owner Name
R	CROWN HYDRO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
3400.00	0.50	1700.00	19000.00	9500

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4459.00 9315.00
	ROR	PO	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.75
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value	Y	0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
11379	COON RAPIDS	MISSISSIPPI R	MN

County Name	River Basin
ANOKA	MISSISSIPPI MAIN STREAM

Class	Owner Name
R	MIDWEST HYDRO CONSULTANTS

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
15000.00	0.90	13500.00	65000.00	58500

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4509.00
	ROR	XX	WO	Longitude	9319.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN001	FOND DU LAC	ST LOUIS R	MN

County Name	River Basin
CARLTON	ST LOUIS RIVER BASIN

Class	Owner Name
P	MINNESOTA PWR AND LT CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.90	9.00	50.00	45

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	STG		W	4640.00	9218.00

Factor	Exist Prob	Factor	Exist Prob
Wild/Scenic Protection	0.90	Wildlife Value	0.90
Wild/Scenic Tributary or Upstream/Downstream		Threatened/Endangered Fish	0.90
Wild/Scenic Location	0.90	Threatened/Endangered Wildlife	0.90
Cultural Value	0.90	Federal Land Code 103	0.90
Fish Presence Value	0.90	Federal Land Code 104	0.90
Geologic Value	0.90	Federal Land Code 105	0.90
Historic Value	0.90	Federal Land Code 106	0.90
Other Value	0.90	Federal Land Code 107	0.90
Recreation Value	0.90	Federal Land Code 108	0.90
Scenic Value	0.90	Federal Land Code 198	0.90

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FERC Number	Plant Name	Stream	State Name
MN002	THOMSON	ST LOUIS R	MN

County Name	River Basin
CARLTON	ST LOUIS RIVER BASIN

Class	Owner Name
P	MINNESOTA PWR AND LT CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
53000.00	0.90	47700.00	93000.00	83700

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4640.00
				Longitude	9224.00
	STG		W		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN003	CLOQUET	ST LOUIS R	MN

County Name	River Basin
CARLTON	ST LOUIS RIVER BASIN

Class	Owner Name
I	POTLATCH CORP

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
3000.00	0.90	2700.00	7000.00	6300

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4641.00 9226.00
	ROR		W		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN004	GRAND RAPIDS	ST LOUIS R	MN

County Name	River Basin
ST LOUIS	ST LOUIS RIVER BASIN

Class	Owner Name
-------	------------

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10000.00	0.90	9000.00	57000.00	51300

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4644.00 9227.00
	STG		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN005	ISLAND LAKE	CLOQUET R	MN

County Name	River Basin
ST LOUIS	ST LOUIS RIVER BASIN

Class	Owner Name
P	MINNESOTA PWR AND LT CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1000.00	0.50	500.00	5000.00	2500

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	STG		WO	4659.00	9213.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN006	BAPTISM	BAPTISM R	MN

County Name	River Basin
LAKE	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.90	9.00	50.00	45

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4727.00	Longitude	9114.00
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STG	WO
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Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN007	LOWER POPLAR	POPLAR R	MN

County Name	River Basin
COOK	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.90	9.00	50.00	45

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	ROR		WO	4737.00	9048.00

Factor	Exist Prob	Factor	Exist Prob
Wild/Scenic Protection	0.90	Wildlife Value	0.90
Wild/Scenic Tributary or Upstream/Downstream		Threatened/Endangered Fish	0.90
Wild/Scenic Location	0.90	Threatened/Endangered Wildlife	0.90
Cultural Value	0.90	Federal Land Code 103	0.90
Fish Presence Value	0.90	Federal Land Code 104	0.90
Geologic Value	0.90	Federal Land Code 105	0.90
Historic Value	0.90	Federal Land Code 106	0.90
Other Value	0.90	Federal Land Code 107	0.90
Recreation Value	0.90	Federal Land Code 108	0.90
Scenic Value	0.90	Federal Land Code 198	0.90

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FERC Number	Plant Name	Stream	State Name
MN008	UPPER POPLAR	POPLAR R	MN

County Name	River Basin
COOK	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.90	9.00	50.00	45

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4739.00
				Longitude	9048.00
	STG		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN009	CASCADE	CASCADE R	MN

County Name	River Basin
COOK	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.90	9.00	50.00	45

Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
	STG		WO	4743.00	9031.00

Factor	Exist Prob	Factor	Exist Prob
Wild/Scenic Protection	0.90	Wildlife Value	0.90
Wild/Scenic Tributary or Upstream/Downstream		Threatened/Endangered Fish	0.90
Wild/Scenic Location	0.90	Threatened/Endangered Wildlife	0.90
Cultural Value	0.90	Federal Land Code 103	0.90
Fish Presence Value	0.90	Federal Land Code 104	0.90
Geologic Value	0.90	Federal Land Code 105	0.90
Historic Value	0.90	Federal Land Code 106	0.90
Other Value	0.90	Federal Land Code 107	0.90
Recreation Value	0.90	Federal Land Code 108	0.90
Scenic Value	0.90	Federal Land Code 198	0.90

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FERC Number	Plant Name	Stream	State Name
MN010	BRULE NO 5	BRULE R	MN

County Name	River Basin
COOK	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.50	5.00	50.00	25

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4744.00	Longitude	9009.00
	ROR		WO				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104	Y	0.75
Geologic Value	Y	0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN011	BRULE NO 4	BRULE R	MN

County Name	River Basin
COOK	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.50	5.00	50.00	25

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4744.00 9007.00
	ROR		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104	Y	0.75
Geologic Value	Y	0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN012	BRULE NO 3	BRULE R	MN

County Name	River Basin
COOK	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.50	5.00	50.00	25

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4742.00	Longitude	9019.00
	ROR		WO				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104	Y	0.75
Geologic Value	Y	0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN013	HIGH FALLS	PIGEON R	MN

County Name	River Basin
COOK	MINOR RIVER BASINS

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10600.00	0.10	1060.00	45300.00	4530

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4748.00 9019.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value	Y	0.50	Federal Land Code 103	Y	0.10
Fish Presence Value		0.90	Federal Land Code 104	Y	0.90
Geologic Value	Y	0.50	Federal Land Code 105		0.90
Historic Value	Y	0.50	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107	Y	0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value	Y	0.50	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN014	BRIGHTDALE	S BR ROOT R	MN

County Name	River Basin
FILLMORE	MINOR RIVER BASINS

Class	Owner Name
F	CORPS OF ENGINEERS

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.75	7.50	50.00	37.50

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4346.00
				Longitude	9158.00
	STG		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value	Y	0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN015	TWIN CITY L&D 1	MISSISSIPPI R	MN

County Name	River Basin
HENNEPIN	MISSISSIPPI MAIN STREAM

Class	Owner Name
I	FORD MOTOR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
7200.00	0.50	3600.00	21450.00	10725

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4455.00	Longitude	9312.00
	ROR		W				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.75
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.75
Geologic Value	Y	0.90	Federal Land Code 105		0.90
Historic Value	Y	0.75	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN016	LOWER DAM	MISSISSIPPI R	MN

County Name	River Basin
HENNEPIN	MISSISSIPPI MAIN STREAM

Class			Owner Name		
P			NORTHERN STATES POWER CO		
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)	
10.00	0.10	1.00	50.00	5	
Unit Type	Plant Type	Project Status	Dam Status	Latitude	Longitude
				4458.00	9315.00
ROR			U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.25
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104	Y	0.50
Geologic Value	Y	0.50	Federal Land Code 105		0.90
Historic Value	Y	0.50	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value	Y	0.50	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN017	ELK RIVER	ELK R	MN

County Name	River Basin
SHERBURNE	MISSISSIPPI MAIN STREAM

Class	Owner Name
M	ELK RIVER,CITY OF

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
300.00	0.90	270.00	526.00	473.40

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4529.00 9342.00
	ROR		WO		

Factor	Exist Prob	Factor	Exist Prob
Wild/Scenic Protection	0.90	Wildlife Value	0.90
Wild/Scenic Tributary or Upstream/Downstream		Threatened/Endangered Fish	0.90
Wild/Scenic Location	0.90	Threatened/Endangered Wildlife	0.90
Cultural Value	0.90	Federal Land Code 103	0.90
Fish Presence Value	0.90	Federal Land Code 104	0.90
Geologic Value	0.90	Federal Land Code 105	0.90
Historic Value	0.90	Federal Land Code 106	0.90
Other Value	0.90	Federal Land Code 107	0.90
Recreation Value	0.90	Federal Land Code 108	0.90
Scenic Value	0.90	Federal Land Code 198	0.90

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FERC Number	Plant Name	Stream	State Name
MN018	BAILEY	MISSISSIPPI R	MN

County Name	River Basin
WRIGHT	MISSISSIPPI MAIN STREAM

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
11200.00	0.10	1120.00	59000.00	5900

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4524.00
				Longitude	9352.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN019	MONTICELLO	MISSISSIPPI R	MN

County Name	River Basin
WRIGHT	MISSISSIPPI MAIN STREAM

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
11200.00	0.10	1120.00	60000.00	6000

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4524.00 9352.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location		0.90	Federal Land Code 103		0.90
Cultural Value		0.90	Federal Land Code 104		0.90
Fish Presence Value		0.90	Federal Land Code 105		0.90
Geologic Value		0.90	Federal Land Code 106		0.90
Historic Value		0.90	Federal Land Code 107		0.90
Other Value		0.90	Federal Land Code 108		0.90
Recreation Value		0.90	Federal Land Code 198		0.90
Scenic Value		0.90			

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FERC Number	Plant Name	Stream	State Name
MN020	CLEARWATER	MISSISSIPPI R	MN

County Name	River Basin
WRIGHT	MISSISSIPPI MAIN STREAM

Class	Owner Name
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
11200.00	0.10	1120.00	59000.00	5900

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4524.00
				Longitude	9352.00
	ROR		U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.10	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN021	SYLVAN	CROW WING R	MN

County Name	River Basin
MORRISON	CROW WING RIVER BASIN

Class	Owner Name
P	MINNESOTA PWR AND LT CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.50	5.00	50.00	25

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4618.00	Longitude	9423.00
	STG		W				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN022	BRAINERD	MISSISSIPPI R	MN

County Name	River Basin
CROW WING	MISSISSIPPI MAIN STREAM

Class		Owner Name		
I		POTLATCH CORP,NW PPR		
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
2000.00	0.50	1000.00	6500.00	3250

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4623.00
				Longitude	9411.00

ROR	W
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Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN023	GRAND RAPIDS	MISSISSIPPI R	MN

County Name	River Basin
ITASCA	MISSISSIPPI MAIN STREAM

Class	Owner Name
I	BLANDIN PAPER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1000.00	0.50	500.00	1900.00	950

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4714.00	Longitude	9332.00
	STG		W				

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection	Y	0.50	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

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FERC Number	Plant Name	Stream	State Name
MN024	KETTLE FALLS	KETTLE CHANNEL, RAINY R	MN

County Name	River Basin
ST LOUIS	RED RIVER BASIN

Class		Owner Name		
P		MN & ONTARIO POWER CO		
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
8000.00	0.90	7200.00	53000.00	47700

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4830.00 9238.00
	STG		WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90

R E S O U R C E D A T A B A S E L I S T I N G

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FERC Number	Plant Name	Stream	State Name
MN025	THIEF RIVER FALLS	RED LAKE R	MN

County Name	River Basin
PENNINGTON	RAINY RIVER BASIN

Class	Owner Name
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M	THIEF R FALLS,CITY OF
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Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
250.00	0.90	225.00	1000.00	900

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	4807.00 9611.00
C	ROR		W		

Factor	Exist	Prob	Factor	Exist	Prob
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Wild/Scenic Protection	0.90	Wildlife Value	0.90
Wild/Scenic Tributary or		Threatened/Endangered Fish	0.90
Upstream/Downstream		Threatened/Endangered Wildlife	0.90
Wild/Scenic Location	0.90	Federal Land Code 103	0.90
Cultural Value	0.90	Federal Land Code 104	0.90
Fish Presence Value	0.90	Federal Land Code 105	0.90
Geologic Value	0.90	Federal Land Code 106	0.90
Historic Value	0.90	Federal Land Code 107	0.90
Other Value	0.90	Federal Land Code 108	0.90
Recreation Value	0.90	Federal Land Code 198	0.90
Scenic Value	0.90		

RESOURCE DATABASE LISTING

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FERC Number	Plant Name	Stream	State Name
MN026	PISGAH	OTTER TAIL R	MN

County Name	River Basin
OTTER TAIL	RAINY RIVER BASIN

Class	Owner Name
P	OTTER TAIL POWER CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
10.00	0.90	9.00	50.00	45

Unit Type	Plant Type	Project Status	Dam Status	Latitude	4617.00
				Longitude	9506.00
	ROR		W		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198		0.90