

AUTHORIZATION TO DISCHARGE AND CONSTRUCT WASTEWATER TREATMENT FACILITIES
UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
AND STATE DISPOSAL SYSTEM PERMIT PROGRAM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq; hereinafter the "Act"), Minnesota Statutes Chapters 115 and 116 as amended and Minnesota Pollution Control Agency Regulation WPC 36 (hereinafter Agency Regulation WPC 36)

NORTHERN STATES POWER COMPANY

is authorized by the Minnesota Pollution Control Agency, to construct and operate wastewater treatment facilities and/or to discharge from

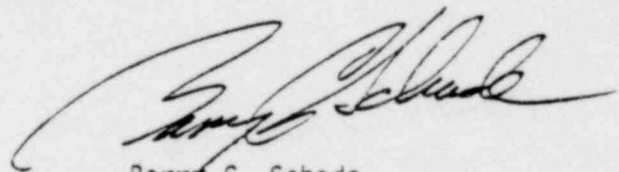
Prairie Island Nuclear Generating Plant
Welch, Minnesota

to receiving water named the Mississippi River

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I and II, hereof.

This permit shall become effective on the date of issuance by the Director.

This permit and the authorization to discharge shall expire at midnight, June 30, 1985. The Permittee is not authorized to discharge after the above date of expiration. In order to receive authorization to discharge beyond the above date of expiration, the Permittee shall submit such information and forms as are required by the Agency no later than 180 days prior to the above date of expiration pursuant to Agency Regulation WPC 36.



Barry C. Schade
Director
Division of Water Quality

Date: JAN 19 1981

For Terry Hoffman
Executive Director
Minnesota Pollution Control Agency

A. DESCRIPTION

This facility is a two unit nuclear fueled steam electric generating plant using a pressurized water reactor system with a maximum generating capacity of 1,120 megawatts. The disposal system consists of cooling towers, a chemical treatment system, a radwaste treatment system, pumps and piping. Steam generator blowdown and radwaste effluent are discharged via discharge serial numbers 20101 and 20102, respectively, into the circulating water system. Neutralizer tank effluent and resin rinse water are discharged to the circulating water system via outfall serial number 20103. Unit 1 and Unit 2 turbine building sumps composed of non-contact cooling water, condensate traps and drains, resin rinse overflow and roof and floor drains are discharged into the circulating water system via outfall serial numbers 20104 and 20105, respectively. Metal cleaning water is discharged from outfall serial number 20106 into the circulating water system. Units 1 and 2 condensate blow-down are discharged into the circulating water system via outfall serial numbers 20107 and 20108, respectively. Miscellaneous plant building floor drains are discharged into the circulating water system via outfall 20109. Heating system blowdown is discharged into the circulating water system via the Unit 1 turbine building sump through outfall number 20110. The circulating water system composed of condenser cooling water, plant cooling water and discharges 20101 through 20110 discharges to the Mississippi River via outfall serial number 20100. During icing conditions, additional circulating water is discharged from outfall 20200 into the backwater slough south of the discharge. After completion of the intake modifications as described in Part I.C.6. and Part I.F.1. of this permit, screen backwash and fish return water will be discharged from outfall 20300. The discharges at this facility are characterized as follows:

<u>Discharge Serial Number</u>	<u>Type of Wastewater</u>	<u>Maximum Flow</u>	<u>Typical Flow</u>
20100	Circulating Cooling Water, Condenser Cooling Water Plant Cooling Water	892 MGD 44 MGD	716 MGD 28 MGD
20101	Steam Generator Blowdown	250,000 gpd	25,000 gpd
20102	Radwaste Treatment System Effluent	50,000 gpd	3,000 gpd
20103	Neutralizer Tank Effluent and Resin Rinse Water	100,000 gpd	55,000 gpd
20104, 20105	Unit 1 and 2 Turbine Building Sump	520,000 gpd	200,000 gpd
20106	Metal Cleaning Water	5,000 gpd	0 gpd
20107, 20108	Unit 1 and 2 Condensate Blowdown	250,000 gpd	25,000 gpd
20109	Miscellaneous Plant Building Floor Drains		

A. DESCRIPTION (con't)

<u>Discharge Serial Number</u>	<u>Type of Wastewater</u>	<u>Maximum Flow</u>	<u>Typical Flow</u>
20110	Heating System Blowdown	30,000 gpd	0 gpd
20200	Backwater Slough Deicing Water	1.5 MGD	1.5 MGD
20300	Screen Backwash and Fish Return Effluent	3.2 MGD	2.0 MGD

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this Permit and lasting until June 30, 1985 the Permittee is authorized to discharge circulating cooling water, plant cooling water, and miscellaneous waste streams from outfall serial number 20100.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		Measurement Frequency	Sample Type
	Thirty (30) Consecutive Day Average	Daily Max	Thirty (30) Consecutive Day Average	Daily Max		
Flow-m ³ /Day (MGD)	-	-	-	-	Continuous	-
Temperature °C(°F)	-	See page 17 of 33	-	-	Continuous*	-
Chlorine (Total Residual)	Not to exceed 2 hours/day		-	0.2 mg/l	bi-weekly**	Grab
Plant Capacity Factor- Percent Total Capacity	-	-	-	-	Monthly Average	-

The Permittee shall monitor the amount and time of chlorine application daily and report it monthly along with other monitoring reports. Chlorine may only be used in the plant cooling water, except chlorine may be used in the circulating cooling water periodically to treat the parasitic amoeba provided the circulating cooling water is dechlorinated prior to discharge.

The pH shall not be less than 6.5 nor greater than 8.5. These upper and lower limitations are not subject to averaging and shall be met at all times.

The pH shall be monitored at the intake and discharge and sampled by weekly grab samples.

There shall be no discharge of floating solids or visible foam except that which occurs naturally in the river in other than trace amounts.

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of the discharge.

*Intake & Discharge

**The daily total amount of chlorine used in the plant cooling water shall not exceed 100 pounds. This application rate does not apply to periodic chlorination for the parasitic amoeba.

Permit No: MN0004006

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date of this permit and lasting until June 30, 1985 the Permittee is authorized to discharge steam generator blowdown from outfall serial number 20101.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		Measurement Frequency	Sample Type
	Thirty (30) Consecutive Day Average	Daily Max	Thirty (30) Consecutive Day Average	Daily Max		
Flow-m ³ /Day (MGD)	-	-	-	-	Monthly	Daily Average Estimate
Total Suspended Solids*	28.4 (62.6)	94.6(208.6)	30 mg/l	100 mg/l	Monthly	Grab
Turbidity	-	-	-	25 NTU	Monthly	Grab

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of the discharge prior to mixing with other waste streams.

*In addition to the monthly average and daily maximum limitations, the seven (7) consecutive day average concentration shall not exceed 45 mg/l.

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning on the effective date of this permit and lasting until June 30, 1985 the Permittee is authorized to discharge radwaste treatment effluent from outfall serial number 20102.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>		
Flow-m ³ /day (MGD)	-	-	-	-	Monthly	Daily Average Estimate
Total Suspended Solids *	5.7 (12.5)	18.9 (41.7)	30 mg/l	100 mg/l	Monthly	Grab
Turbidity	-	-	-	25 NTU	Monthly	Grab

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of the discharge prior to mixing with other streams.

*In addition to the monthly average and daily maximum limitations, the seven (7) consecutive day average concentration shall not exceed 45 mg/l.

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

4. During the period beginning on the effective date of this permit and lasting until May 31, 1982 the Permittee is authorized to discharge neutralizer tank effluent and resin rinse water from outfall serial number 20103. Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		Measurement Frequency	Sample Type
	Thirty (30) Consecutive Day Average	Daily Max	Thirty (30) Consecutive Day Average	Daily Max		
Flow-m ³ /Day (MGD)	-	-	-	-	bi-Weekly	Daily Average Estimate
Total Suspended Solids	-	-	-	-	bi-Weekly	Grab
Turbidity	-	-	-	-	bi-Weekly	Grab

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of the discharge prior to mixing with other waste streams.

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

5. During the period beginning on June 1, 1982 and lasting until June 30, 1983, the Permittee is authorized to discharge neutralizer tank effluent and resin rinse water from outfall serial number 20103.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>		
Flow-m ³ /Day (MGD)	-	-	-	-	bi-Weekly	Daily Average Estimate
Total Suspended Solids *	11.4 (25.0)	37.9 (83.5)	30 mg/l	100 mg/l	bi-Weekly	Grab
Turbidity	-	-	-	25 NTU	bi-Weekly	Grab

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirement specified above shall be taken at a point representative of the discharge prior to mixing with other waste streams.

*In addition to the monthly average and daily maximum limitations, the seven (7) consecutive day average concentration shall not exceed 45 mg/l.

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

6. During the period beginning on the effective date of this Permit and lasting until June 30, 1985 the Permittee is authorized to discharge Unit 1 and Unit 2 turbine building sump effluent comprised of resin rinse overflow, condensate traps and drains, roof and floor drains and non-contact cooling water from outfall serial numbers 20104 and 20105, respectively.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (Specify)		Measurement Frequency	Sample Type
	Thirty (30) Consecutive Day Average	Daily Max	Thirty (30) Consecutive Day Average	Daily Max		
Flow-m ³ /Day (MGD)	-	-	-	-	Weekly	Daily Average Estimate
Total Suspended Solids*			30 mg/l	100 mg/l	Weekly	Grab
Turbidity	-	-	-	25 NTU	Weekly	Grab
Oil and Grease			10 mg/l	15 mg/l	Monthly	Grab

There shall be no discharge of floating solids or visible foam except that which occurs naturally in the river in other than trace amounts.

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of the discharge prior to mixing with other waste streams. Samples shall be taken at each outfall.

* In addition to the monthly average and daily maximum limitations, the seven (7) consecutive day average concentration shall not exceed 45 mg/l. Where the background level of the natural origin is reasonably definable and normally is higher than the specified limits for total suspended solids the natural level may be used as the limit.

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

7. During the period beginning on the effective date of this permit and lasting until June 30, 1985 the Permittee is authorized to discharge from outfall serial number 20106 metal cleaning water.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		Measurement Frequency	Sample Type
	Thirty (30) Consecutive Day Average	Daily Max	Thirty (30) Consecutive Day Average	Daily Max		
Flow-m ³ /Day (MGD)	-	-	-	-	once per	Daily Average Estimate
Iron	.02(.04)	.02(.04)	1.0 mg/l	1.0 mg/l	batch	Grab
Copper	.02(.04)	.02(.04)	1.0 mg/l	1.0 mg/l	discharge	Grab
Total Suspended Solids*	0.6(1.3)	1.9(4.2)	30 mg/l	100 mg/l		Grab
Oil and Grease	0.2(0.4)	0.3(0.6)	10 mg/l	15 mg/l		Grab

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at a point representative of the discharge prior to mixing with other waste streams.

*In addition to the monthly average and daily maximum limitations, the seven(7) consecutive day average concentration shall not exceed 45 mg/l.

Permit No: MN0004006

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

8. During the period beginning on the effective date of this permit and lasting until June 30, 1985 the Permittee is authorized to discharge Unit 1 and Unit 2 condensate blowdown from outfall serial numbers 20107 and 20108, respectively.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		Measurement Frequency	Sample Type
	Thirty (30) Consecutive Day Average	Daily Max	Thirty (30) Consecutive Day Average	Daily Max		
Flow-m ³ /Day (MGD)	-	-	-	-	Monthly	Daily Average Estimate
Total Suspended Solids *	28.4(62.6)	94.6(208.6)	30 mg/l	100 mg/l	Monthly	Grab
Turbidity	-	-	-	25 NTU	Monthly	Grab

The mass discharge limitations apply to the combination of discharges from outfalls 20107 and 20108. The concentration limitations apply to discharges 20107 and 20108 separately. Samples shall be taken at each outfall.

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at a point representative of the discharge prior to mixing with other waste streams.

*In addition to the monthly average and daily maximum limitations, the seven (7) consecutive day average concentration shall not exceed 45 mg/l.

Permit No: MN0004006

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

9. During the period beginning on the effective date of this permit and lasting until June 30, 1985 the Permittee is authorized to discharge miscellaneous plant floor drains from outfall serial number 20109.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>		
Flow-m ³ /Day (MGD)	-	-	-	-	Quarterly	Estimate
Total Suspended Solids*	-	-	30 mg/l	100 mg/l	Quarterly	Grab
Oil and Grease	-	-	10 mg/l	15 mg/l	Quarterly	Grab

* In addition to the monthly average and daily maximum limitations, the seven(7) consecutive day average concentration shall not exceed 45 mg/l.

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of the discharge prior to mixing with other waste streams.

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

10. During the period beginning on the effective date of this permit and lasting until June 30, 1985 the Permittee is authorized to discharge heating system blowdown from discharge serial number 20110.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>		
Flow-m ³ /Day (MGD)	-	-	-	-	Monthly	Daily Average Estimate
Total Suspended Solids*	9.1 (20.0)	30.3 (66.8)	30 mg/l	100 mg/l	Monthly	Grab
Turbidity	-	-	-	25 NTU	Monthly	Grab

*In addition to the monthly average and daily maximum limitations the seven (7) consecutive day average concentration shall not exceed 45 mg/l.

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of the discharge prior to mixing with other waste streams.

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

11. During the period beginning on the effective date of this permit and lasting until June 30, 1985 the Permittee is authorized to discharge from outfall serial number 20200 backwater slough deicing water.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>	<u>Thirty (30) Consecutive Day Averages</u>	<u>Daily Max</u>		
Flow-m ³ /Day (MGD)	-	-	-	-	Monthly	Estimate

The pH shall not be less than 6.5 nor greater than 8.5.

These upper and lower limitations are not subject to averaging and shall be met at all times.

There shall be no discharge of floating solids or visible foam except that which occurs naturally in the river in other than trace amounts.

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at a point representative of the discharge prior to mixing with other waste streams.

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

12. During the period beginning on December 1, 1982 and lasting until June 30, 1985 the Permittee is authorized to discharge from outfall serial number 20300 screen backwash and fish return water.

Such discharges shall be limited and monitored by the Permittee as specified below:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>	
	kg/day (lbs/day)		Other Units (specify)		<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>	<u>Thirty (30) Consecutive Day Average</u>	<u>Daily Max</u>		
Flow-m ³ /Day (MGD)	-	-	-	-	Monthly	Estimate

There shall be no discharge of floating solids or visible foam except that which occurs naturally in the river in other than trace amounts.

The discharge shall not contain oil or other substances in amounts sufficient to create a visible color film on the surface of the receiving waters.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at a point representative of the discharge prior to mixing with other waste streams.

Large debris collected at the trash racks shall be disposed of so as to prevent it from entering waters of the State.

C. OTHER REQUIREMENTS1. Pretreatment Requirements

No pollutant shall be discharged from this facility to a publicly owned treatment works except in accordance with pretreatment standards established in accordance with the Act or Minnesota Statutes or any such local standards or requirements. No pollutant shall be discharged into any publicly owned disposal system which interferes with, passes through inadequately treated or otherwise is incompatible with such disposal system. The Permittee shall not make modifications to divert any discharge of pollutants authorized by this permit to a publicly owned treatment works without having first notified and received the approval of the Director.

2. Polychlorinated Biphenyl Compounds

There shall be no discharge of polychlorinated biphenyl compounds including, but not limited to those commonly used in electrical transmission components.

3. Water Treatment Additives

There shall be no use of water treatment additives other than those reported on the application for this permit, nor any significant increase in the amount of any treatment additive used, without prior approval of the Director. In requesting approval to use a water treatment additive, the Permittee shall provide the Director (Attn: Permits Section) with the commercial name of the product to be used, the amount or concentration to be used, and the frequency of usage proposed. This permit may be modified to restrict the usage or discharge of a treatment additive or to require additional effluent monitoring.

4. Reopening Clause

This permit shall be modified, or, alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301 (b)(2)(c), and (D), 304 (b)(2), and 307 (a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

- (1) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
- (2) Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

5. Thermal Limitations

a. Interim Limitations

The Permittee shall relocate and construct a new discharge structure downstream from Barney's Point to reduce the potential for cold shock. Such construction shall be subject to approval by the Director and conducted in accordance with PART I, F, Schedule of Compliance. From the effective date of this Permit and lasting until the new discharge structure is operational, the Permittee is authorized to discharge a heated effluent from outfall 20100 subject to the following limitations:

1. The discharge shall not raise the temperature of the receiving water at the edge of the mixing zone above the following limitations:
 - (a) at any time above a daily average of 86°F, and
 - (b) when the natural river water temperature is less than 45°F, above 50°F; and
 - (c) when the natural river water temperature is 45°F or greater, more than 5°F above natural based on the monthly average of the maximum daily temperature.

The Permittee shall comply with whichever of the above limitations is more stringent.

- ii. Mixing Zone. The mixing zone shall be the confluence of the discharge canal and the main channel of the Mississippi River at the place commonly known as Barney's Point. The Permittee shall determine compliance by the use of their temperature sensors as they exist at the time of the issuance of this permit.
- iii. Frequency of Monitoring and Reporting. The Permittee shall monitor the temperature at the edge of the mixing zone continuously and report it along with other monitoring data to the Director.

b. Final Limitations

During the period beginning on the date the new discharge structure becomes operational and lasting until June 30, 1985, the Permittee is authorized to discharge a heated effluent from outfall 20100 subject to the following limitations:

- i. During the period April 1 through November 30, the Permittee shall operate all cooling towers to the maximum practical extent and shall not raise the temperature of the receiving water immediately below Lock and Dam No. 3 by more than 5°F (2.7°C) above natural based on the monthly averages of the maximum daily temperatures, except in no case shall it exceed a daily average temperature of 86°F (30°C).

- ii. During the period December 1 through March 31, the Permittee shall not raise the mixed river temperature immediately below Lock and Dam No. 3 above 43°F (6.1°C) for an extended period of time. Should the mixed river temperature immediately below Lock and Dam No. 3 equal or exceed 43°F (6.1°C) for two consecutive days, the Permittee shall notify the Director and the Minnesota Department of Natural Resources. Following such notification, the Director may require the Permittee to operate the cooling towers until such time the above temperature criteria can be consistently met.
- iii. Abrupt temperature changes in the discharge due to changes in cooling tower operational modes or generator unit tripouts shall be minimized to the maximum extent practical to reduce the potential for cold shock in the receiving water. The Permittee shall be responsible for fish kills due to cold shock.
- iv. The natural river water temperature shall be defined as the temperature of the river water at a point unaffected by the plant or any other thermal discharge.
- v. The Permittee shall monitor the mixed river temperature immediately below Lock and Dam No. 3 continuously. The data shall be reported along with the monthly discharge monitoring reports in accordance with Part I.D.3. of this permit.

c. Thermal Studies

Within 45 days of the effective date of this Permit, the Permittee shall submit to the Director and the Minnesota Department of Natural Resources for approval, a study plan to monitor the effects of open-cycle winter operation on the aquatic biota. The study shall include collection of background data, including mixed river temperature, prior to, and operational data following completion of the discharge structure construction in accordance with Part I.F.1. of this permit. The study shall be submitted to the Director and the Minnesota Department of Natural Resources no later than 1 year after each year's data collection and may be included in the Permittee's Annual Environmental Report. Each year's study shall integrate and report previous years data and results. Areas of study shall include but are not limited to the following areas:

- i. Evaluate the spawning success of walleyes and sauger as related to chill period.
- ii. Conduct creel census during the winter period to observe possible changes in fishing pressure and harvest.
- iii. Measure walleye and sauger year class strength by use of seining data.
- iv. Literature review of the possible effects of winter open-cycle operation on sauger and tailwater species not included on the Representative Important Species list for the 316 (a) study.

Items i, ii, and iii, above should begin as soon as possible following plan approval so that background data is generated for comparison with proposed winter open-cycle operation.

6. Condenser Cooling Water Intakea. Construction of structure

The Permittee shall construct an alternate condenser cooling water intake structure designed to minimize the mortality of entrained and impinged fish. The alternate structure shall include and employ the use of fine mesh screens and a low pressure wash, fish buckets and fish return system, and shall be constructed to eliminate the access of fish to the recirculating cooling water canal. Specifically, minimum design criteria shall include a screen face velocity of 0.5 feet per second at a discharge flow rate of 800 cubic feet per second using 0.5 millimeter mesh screens. The design and construction of the structure shall be subject to approval by the Director, and shall be conducted in accordance with PART I.F, Schedule of Compliance of this Permit.

b. Operation

Following completion of the alternate condenser cooling water intake structure as required pursuant to this permit, the plant discharge flows shall be limited as follows during the specified periods:

April	150 cubic feet per second (cfs)
May	300 cfs
June 1 - 15	400 cfs
June 16 - 30	800 cfs

The plant may discharge at higher flow rates during the specified periods if needed to prevent condenser inlet temperatures from exceeding 85°F provided that such higher flows are minimized to the extent practical.

The Permittee may operate with up to 3/8 inch mesh screens during the period September 1 through April 15. During the period April 16 through August 31 the Permittee shall use 0.5 mm mesh screens or the minimum larger sized screens as determined by Part I.C.6.c.i.

In addition, the intake system shall be operated to minimize the mortality of fish and other organisms in accordance with Part I.C.6.c.

c. Condenser Cooling Water Intake Study

By June 1, 1982, the Permittee shall submit to the Director for approval a plan of study to determine the effectiveness of the alternate condenser cooling water intake system with regard to minimizing impingement and entrainment. The final study shall be submitted to the Director along with the Permittee's Annual Environmental Reports by July 1, 1984. The study shall include but is not limited to addressing the following areas:

- i. Determining the fine mesh screen size which will minimize clogging yet optimize larval and juvenile fish survival.
- ii. Determining the survival rate of impinged larval, juvenile and adult fish.
- iii. Determining the optimum period(s) for continuous screen rotation to increase survival of impinged fish.

- iv. Determining velocity profiles of the fine mesh screens at different intake/discharge flows.
- v. Operation of the system to minimize the mortality of fish and other organisms during the study period.

7. Ecological Monitoring

Within 45 days of the effective date of this Permit, the Permittee shall submit to the Director for approval a monitoring plan to maintain ecological monitoring consistent with the Annual Environmental Reports.

D. MONITORING AND REPORTING1. Monitoringa. Representative Sampling

Samples shall be taken at a point representative of the discharge. Any monitoring measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

b. Quality Assurance

In order to insure the validity of analytical data, the Permittee shall submit an outline of the quality assurance program employed by the laboratory performing the analyses. Such outline shall be contained in the monitoring plan required by PART I, D.2.

c. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304 (h) of the Act, and Minnesota Statutes, Section 115.03, Subd. 1 (e) (7) as amended.

The Permittee shall periodically calibrate and perform maintenance on all monitoring and analytical instrumentation used to monitor pollutants discharged under this permit, at intervals to insure accuracy of measurements. The Permittee shall maintain written records of all such calibrations and maintenance.

d. Recording of Results

For each measurement taken or sample collected pursuant to the requirements of this permit, the Permittee shall record the following information, except for data in items 1) and 4) below which is identified in the monitoring plan required by PART I, D.2.

- 1) the exact place, date, and time of sampling;
- 2) the dates the analyses were performed;
- 3) the person who performed the analyses;
- 4) the analytical techniques, procedures or methods used; and
- 5) the results of such analyses.

e. Additional Monitoring by Permittee

If the Permittee monitors any pollutant designated herein more frequently than required by this permit, or as otherwise directed by the Agency or Director, the results of such monitoring shall be included in the calculation and reporting of values submitted on the Discharge Monitoring Report Form. Any increased monitoring frequency shall also be indicated on such designated form.

f. Recording and Records Retention

- All sampling and analytical records required by this permit shall be retained by the Permittee for a minimum of three (3) years. The Permittee shall also retain all original recordings from any continuous monitoring instrumentation, and any calibration and maintenance records, for a minimum of three (3) years. These retention periods shall be automatically extended during the course of any legal or administrative proceedings or when so requested by the Regional Administrator, the Agency, or the Director.

2. Monitoring Plan

- a. The Permittee shall submit a monitoring plan to the Director for approval within forty-five (45) days after the date of issuance of this permit in the event that a monitoring plan has never previously been submitted.
- b. The Permittee shall submit a new monitoring plan or amendments to previous monitoring plans to the Director for approval within forty-five (45) days after the date of issuance of this permit in the event that:
 - 1) changes in the monitoring plan are to be made,
 - 2) additional or different monitoring is required by this permit, or
 - 3) the latest monitoring plan submittal was rejected by the Agency.
- c. Monitoring plans shall include the items described in Agency Regulation WPC 36 (n)(2).

3. Reporting

- a. All monitoring results obtained pursuant to the provisions of this permit shall be summarized on a monthly basis and reported on the designated "Discharge Monitoring Report Form".
- b. Reports shall be submitted monthly and received or post-marked no later than the 21st day of the month following the completed reporting period. The first report is due on the reporting date following the first reporting period where monitoring is required beginning on the date of issuance of this permit. If the reporting period specified above is quarterly, reports shall be due on the 21st day of April, July, October, and January. Signed copies of these, and all other reports required herein, shall be submitted to the Director at the following address:

Minnesota Pollution Control Agency
1935 West County Road B2
Roseville, Minnesota 55113
Attn: Enforcement Section

- c. - The Permittee shall report the results of the monitoring in the units specified in this permit. The reports or written statements shall be submitted even if no discharge occurred during the reporting period. The report shall include (a) a description of any modifications in the wastewater collection, treatment, and disposal facilities; (b) any substantial changes in operational procedures; (c) any other significant activities which alter the nature or frequency of the discharge; (d) any other material factors affecting compliance with the conditions of this permit and such information as the Agency or Director may reasonably require of the Permittee pursuant to Agency Regulation, WPC 36 (n) and Minnesota Statutes, Chapters 115 and 116 as amended.
- d. Except for data determined to be confidential under Section 308 of the Act, and Minnesota Statutes, Section 116.075, Subd. 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Agency. Procedures for submitting such confidential material shall be pursuant to Minnesota Regulation WPC 36 (j) (2). As required by the Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report, confidential or otherwise, is subject to the imposition of criminal penalties as provided for in Section 309 of the Act and Minnesota Statutes, Section 115.071 Subd. 2 (b).

E. DEFINITIONS

1. The "Agency" means the Minnesota Pollution Control Agency, as constituted pursuant to Minnesota Statutes, Section 116.02, Subd. 1.
2. The "Director" means the Executive Director, or other Agency staff as authorized by the Executive Director, of the Minnesota Pollution Control Agency as described in Minnesota Statutes, Section 116.03 as amended.
3. The "Regional Administrator" means the Environmental Protection Agency (EPA) Regional Administrator for the region in which Minnesota is located (now Region V).
4. The "Act" means the Federal Water Pollution Control Act, as amended 33 U.S.C. 1251, et seq.
5. A "Composite" sample, for monitoring requirements, is defined as (1) a series of grab samples collected at least once per hour at equally spaced time intervals and proportioned according to flow, or (2) grab samples of equal volume collected at equally spaced intervals of effluent volume and collected not less than once per hour unless otherwise approved in the monitoring plan.
6. "Thirty (30) Consecutive Day Average" Discharge.
 - a. Weight Basis - The "thirty (30) consecutive day average" discharge is defined as the summation of the measured daily discharges by weight divided by the number of days during the thirty (30) consecutive day period when the measurements were made.
 - b. Concentration Basis - The "thirty (30) consecutive day average" concentration, other than for fecal coliform bacteria, is defined as the arithmetic average (weighted by flow value) of all the daily determinations of concentration made during the thirty (30) consecutive day period. Daily determinations of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.

The "thirty (30) consecutive day average" for fecal coliform bacteria is defined as the geometric mean of samples collected in a period of thirty (30) consecutive days.

7. "Daily Maximum" Discharge
 - a. Weight Basis - The "daily maximum" discharge means the total discharge by weight during any calendar day.
 - b. Concentration Basis - The "daily maximum" concentration means the daily determination of concentration for any calendar day.
8. The "Seven (7) Consecutive Day Average" concentration, other than for fecal coliform bacteria, is defined as the arithmetic mean of the samples collected in a period of seven (7) consecutive days. The seven (7) consecutive day average for fecal coliform bacteria is defined as the geometric mean of samples collected in a period of seven (7) consecutive days.
9. Pollutants, Toxic Pollutants, Other Wastes, Point Source, Disposal System, Waters of the State, and other terms for the purpose of this permit are defined in Section 502 of the Act and Minnesota Statutes 115.01 as amended and Agency Regulation WPC 36 (b).

F. Schedule of Compliance

1. The Permittee shall comply with PART I,C.5. and 6. in accordance with the following schedules:
 - a. Relocation and construction of the discharge structure:

i. Submit preliminary plans by	December 1, 1980
ii. Submit final plans and specifications by	May 15, 1981
iii. Award contracts and begin construction by	July 1, 1981
iv. Submit progress report by	December 1, 1981
v. Submit progress report by	June 1, 1982
vi. Complete construction and attain operational levels by	December 1, 1982
 - b. Construction of the condenser cooling water intake structure:

i. Submit preliminary plans and specifications by	December 1, 1980
ii. Submit final plans and specifications by	May 15, 1981
iii. Award contracts and begin construction by	July 1, 1981
iv. Submit progress report by	December 1, 1981
v. Submit progress report by	June 1, 1982
vi. Place in operation by	December 1, 1982
vii. Submit progress report by	June 1, 1983
viii. Attain operational levels by	December 1, 1983
2. The Permittee shall comply with Part I,8.5. in accordance with the following schedule:

Correct neutralizer tank effluent:

i. Submit preliminary plans by	February 1, 1981
ii. Submit final plans and specifications by	May 1, 1981
iii. Award contracts and begin construction by	June 15, 1981
iv. Submit progress report by	December 1, 1981
v. Complete construction and attain operational levels by	June 1, 1982
3. The above compliance schedules in Part I.F.1.a. and b. and I.F.2. maybe subject to change with the approval of the Director, pending the outcome of the Permittee's spent fuel pool certificate of need decision from the Minnesota Energy Agency.
4. The above compliance dates in PART I.F.1.a. and b. and I.F.2. assume prompt review, by the Director, of the plans and specifications.
5. No later than fourteen (14) calendar days following the dates identified in the above schedules of compliance, the Permittee shall submit to the Director (Attn: Enforcement Section) either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the case of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

PART I

Page 27 of 33

Permit No: MN 0004006

6. No Construction shall begin until the Permittee has submitted reports, plans, and specifications for the construction to the Director (Attn: Enforcement Section) and has received written approval of the reports, plans, and specifications in accordance with PART II, § 7. of this permit.

PART II

A. MANAGEMENT REQUIREMENTS1. Non-Compliance and Bypass Notification

If, for any reason, the Permittee exceeds any effluent limitation specified in the permit, bypasses, or causes a diversion of wastewater or unauthorized discharge in violation of this permit, the Permittee shall notify the Director as follows:

a. Telephone Communication

Report immediately to the Compliance and Enforcement Section (612)296-7373 any bypass which may cause a nuisance or health hazard and all unauthorized discharges, accidental or otherwise of oil, toxic pollutants, or other hazardous waste. The Permittee shall immediately recover as rapidly and thoroughly as possible such discharged substance(s) and take such other action as may be reasonable to minimize or abate pollution of the waters of the State. This must be followed by a written explanation on the discharge monitoring report.

b. Prior Approval

Bypassing which would result in the discharge of raw or inadequately treated effluent is prohibited during routine maintenance procedures. If, for any reason, a major treatment unit must be bypassed for routine maintenance, and this bypass will result in a degradation of the effluent, the Director (Attn: Operations Unit, (612)296-7207) must be notified and grant approval prior to removing this unit from service. In the case of emergency maintenance, the Director shall be informed of the circumstances surrounding the need for emergency maintenance and the action taken.

c. Written Report

Report on the Discharge Monitoring Report, any violation of daily minimum, maximum, seven (7) day average, or thirty (30) day average effluent limitation and any bypass that did not present a nuisance or health hazard.

d. Written notification required above shall contain the following information:

- (1) A description of the discharge, approximate volume, and cause of non-compliance or bypass.
- (2) The period of non-compliance or bypass including exact dates and times; or if not corrected, the anticipated time the non-compliance is expected to continue; and steps taken to correct, reduce, eliminate and prevent recurrence of the non-complying discharge.

2. Bypassing

The diversion or bypass of any discharge from the collection system or treatment facility by the Permittee is prohibited, except: (1) where unavoidable to prevent loss of life or severe property damage; or (2) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the terms and conditions of this permit; or (3) where emergency maintenance must be performed; or (4) where routine maintenance must be performed on a major treatment unit and prior approval has been received from the Director. Provision (3) does not authorize discharges caused by a failure to perform routine or preventive maintenance or by a failure to maintain system reliability in accordance with PART II, A.7.

3. Adverse Impact

The Permittee shall take all reasonable steps to minimize any adverse impact to waters of the State resulting from:

- a. all unauthorized discharges accidental or otherwise, of oil, toxic pollutants or other hazardous substances;
- b. effluent limitation violations or;
- c. a bypass.

4. Change in Discharge

- a. All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such a violation may result in the imposition of civil or criminal penalties as provided for in Section 309 of the Act and Minnesota Statutes Section 115.071.
- b. Facility modifications, additions, and/or expansions that increase the plant capacity shall be reported to the Director, (Attn: Compliance and Enforcement Section) and this permit then modified or reissued to reflect such changes.
- c. Any anticipated change in the facility discharge, including any new significant industrial discharge or significant change in the quality of existing industrial discharges to the treatment system that may result in a new or increased discharge of pollutants shall be reported to the Director, (Attn: Compliance and Enforcement Section). Modification to the permit may then be made to reflect any necessary change in permit conditions, including any necessary effluent limitations for any pollutant not identified and limited herein.

- d. In no case are any new connections, increased flows, or significant changes in influent quality permitted that will cause violation of the effluent limitations specified herein.

5. Facilities Operation and Quality Control

All waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

- a. Maintenance of the treatment facility that results in degradation of effluent quality shall be scheduled as much as possible during non-critical water quality periods and shall be carried out in a manner approved by the Director.
- b. The Director may require the Permittee to submit a maintenance plan to eliminate degradation of the effluent. The Permittee shall operate the disposal system in accordance with this plan as approved by the Director.
- c. The Permittee shall provide an adequate operating staff which is duly qualified under Minnesota Regulations WWOB 1, if applicable (as determined by the Director pursuant to Agency Regulation WPC 36 (1) (6) (ee), to carry out the operation, maintenance and testing functions required to insure compliance with the conditions of this permit.
- d. The Permittee shall at all times maintain in good working order and operate as efficiently as possible all facilities or systems of control installed or used to achieve compliance with the terms and conditions of this permit.
- e. Necessary in-plant control tests shall be conducted at a frequency adequate to ensure continuous efficient operation of the treatment facility.

6. Removed Substances

The Permittee shall dispose of solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters in such manner as to prevent any pollutant from such materials from entering waters of the State. The Permittee in disposal of such materials shall comply with all applicable water, air, and solid waste Statutes and Regulations. When requested, the Permittee shall submit a plan for such disposal for approval by the Director.

7. System Reliability

The Permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated or inadequately treated wastes at all times. The Permittee is responsible for insuring system reliability by means of alternate power sources, back-up systems, storage of inadequately treated effluent, or other appropriate methods of maintaining system reliability.

8. Construction

This permit authorizes the construction of treatment works to attain compliance with the limitations and conditions of this permit, only after plans and specifications for treatment facilities have been submitted to and approved in writing by the Director prior to the start of any construction.

B. RESPONSIBILITIES1. Transfer of Ownership or Control

No permit may be assigned or transferred by the holder without the approval of the Agency. In the event of any changes in control or ownership of the facilities, a Request for Permit Transfer, signed by both parties shall be sent to the Agency, (Attn: Compliance and Enforcement Section). Any succeeding owner or controller shall also comply with the terms and conditions of this permit.

2. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. violation of any terms or conditions of this permit;
- b. obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- d. Agency Regulation WPC 36 (s) (1).

3. Toxic Pollutants

Notwithstanding PART II, B.2. above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307 (a) of the Act or Minnesota Statutes Chapters 115 and 116 as amended, for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitations for such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and in accordance with applicable laws and regulation.

4. Right of Entry

The Permittee shall, pursuant to Section 308 of the Act and Minnesota Statutes 115.04, allow the Director of the Agency, the Regional Administrator, and their authorized representatives upon presentation of credentials:

- a. to enter upon the Permittee's premises where a disposal system or other point source or portion thereof is located for the purpose of obtaining information, examination of records, conducting surveys or investigations;
- b. to bring such equipment upon the Permittee's premises as is necessary to conduct such surveys and investigations;

- c. to examine and copy any books, papers, records, or memoranda pertaining to the installation, maintenance, or operation of the discharge, including but not limited to, monitoring data of the disposal system or point source or records required to be kept under the terms and conditions of this permit;
- d. to inspect any monitoring equipment or monitoring procedures required in this permit; and
- e. to sample any discharge of pollutants.

5. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for non-compliance with the terms and conditions provided herein.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject to under Section 311 of the Act and Minnesota Statutes, Chapters 115 and 116 as amended.

7. Minnesota Laws

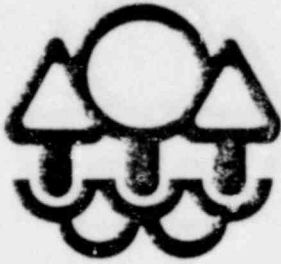
Nothing in this permit shall be construed to preclude the institution of any legal or administrative proceedings or relieve the Permittee from any responsibilities, liabilities, or penalties for violation of effluent and water quality limitations not included in this permit.

8. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or Local laws or regulations.

9. Severability

The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.



Minnesota Pollution Control Agency

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

JAN 19 1981

Mr. Gary V. Welk, Manager
Regulatory Compliance and Services
Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Re: Final NPDES Permit #MN 0004006
Northern States Power Company
Prairie Island Nuclear Generating Plant

Dear Mr. Welk:

Enclosed is a copy of the final National Pollutant Discharge Elimination System (NPDES) Permit covering your facilities at the above referenced location. This Permit has been drafted pursuant to the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq), Minnesota Statutes, Chapters 115 and 116 as amended and Minnesota Pollution Control Agency Regulation WPC 36. All comments submitted in writing during the public notice comment period, pursuant to WPC 36, Section (h)(4) and the hearing record, where a hearing was held pursuant to WPC 36, Section (k) have been considered in the formulation of final determinations and recommendations on the NPDES Permit. Enclosed also please find Discharge Monitoring Report Forms for your use.

If you have any questions regarding this Permit, please contact Mark Lahtinen at 296-7750.

Sincerely,

A handwritten signature in cursive script, appearing to read "Randy D. Burnyeat".

Randy D. Burnyeat
Acting Chief, Permits Section
Division of Water Quality

RDB/MJL:jae

Enclosure(s)

cc: Permits-U.S. Environmental Protection Agency, Chicago (2)

Phone: _____

1935 West County Road B2 Roseville, Minnesota 55113
Regional Offices: Duluth Brainerd Detroit Lakes Marshall Rochester
Equal Opportunity Employer

