



**Minnesota  
Pollution  
Control  
Agency**

AIR QUALITY  
520 LAFAYETTE ROAD  
ST. PAUL, MN 55155-4194

PERMIT APPLICATION FORM **MI-01**  
**BUILDING AND STRUCTURE INFORMATION**  
6/16/98

1) AQ Facility ID No.: 14100003    2) Facility Name: Great River Energy - Elk River Station

3a) Bldg ID No.	3b) Length (ft.)	3c) Width (ft.)	3d) Roof Height From Ground (ft.)	3e) Description / Comments
001	195.0	176.0	54	RDF Power Plant includes boilers and generators, roof heights and grade varies (max. = 71.3 ft, min. = 19 ft.).
002	105.0	80.0	110.0	AQC Building - scrubber vessels and controls.
003	124.0	83.0	18.0	Warehouse #2
006	38.0	76.0	24.0	Loader Shed
007	105.0	60.0	24.0	Warehouse #4
009	300.0	150.0	15.0	Headquarters - West
010	275.0	270.0	15.0	Headquarters - East
011	78.0	100	24	Vehicle Storage Bldg.



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3a)	3b)	3c)	3d)	3e)
Bldg ID No.	Length (ft.)	Width (ft.)	Roof Height From Ground (ft.)	Description / Comments
012	220	128	35	RDF Receiving and Storage
013	105	60	24	Warehouse #5
014	136	48	24	Storage Building
015	105	60	24	Line Crew Building
016	200	105	25	Field Services Building
017	208	182	37	Warehouse #1
018	80	180	43	Garage



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- 2) Facility Name: Great River Energy - Elk River Station

**CERTIFICATION**

I certify under penalty of law that the enclosed documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I also certify, in accordance with Minnesota Rules 7007.0500, subp. 2 (K)(2) and subp. 2 (K)(3), that I have reviewed the procedures implemented by my facility to maintain compliance and that those procedures are, to the best of my knowledge and belief, reasonable to maintain compliance with all applicable requirements, including those that will become applicable during the term of the permit.

<b>Owner:</b>		<b>Operator:</b>	
Mr./Ms.	_____	Mr./Ms.	_____
Title:	_____	Title:	_____
Signature:	_____	Signature:	_____
Date:	_____	Date:	_____



# Minnesota Pollution Control Agency

520 LAFAYETTE ROAD  
ST. PAUL, MN 55155-4194

## AIR QUALITY FORM **HG-01** **MERCURY RELEASES TO AMBIENT AIR**

October 25, 2006

1a) AQ Facility ID No.: 14100003

1b) AQ File No.: \_\_\_\_\_

2) Facility Name: Great River Energy - Elk River Power Station

3) Use this table to summarize changes in mercury emissions associated with a new or expanded facility or a changed or modified operation at an existing facility.

3a) Emission Unit (EU) ID number	3b) potential to emit after the change (pounds per year)				3c) current actual emissions (pounds per year)				3d) future estimated actual emissions (pounds per year)			
	particulate- bound (Hg-p)	reactive gaseous (HgII)	Elemental (Hg0)	Total (HgT)	particulate- bound (Hg-p)	reactive gaseou s (HgII)	Elemental (Hg0)	Total (HgT)	particulate- bound (Hg-p)	reactive gaseous (HgII)	Elemental (Hg0)	Total (HgT)
EU010 (turbine)			1.66	1.66			0	0			1.66	1.66
ISA (preheater)			0.006	0.006			0	0			0.006	0.006

4) Calculation Data.

4a) Where are the calculations summarized in item 3? Please list where in the permit application (section and/or pages) we can find mercury emission calculations for each of the emission units listed in item 3.

See emission calculations in Attachment A.

4b) What is the source of the data used to determine the mercury emissions in item 3 (e.g., published emission factors, site specific test data, mass balance, etc.)?

EPA Combustion Turbine Emissions Database, v.5

AP-42 TABLE 1.4-4. EMISSION FACTORS FOR METALS FROM NATURAL GAS COMBUSTION

5) Attach a diagram that shows the flow of mercury through the facility. See the example in the instructions.

Attached – **Figure HG-01-1**

6) Use this table to summarize available alternative methods to reduce mercury emissions from the facility. Complete a separate table for each emission unit.

EU \_\_\_\_\_

6a) Description	6b) Total Mercury Emitted (lb/yr)	6c) Reduction Potential (lb/yr)	6d) Annualized Cost (\$)	6e) Cost Effectiveness (\$ per lb Hg)
<input type="checkbox"/> Baseline/Uncontrolled emissions				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				

EU \_\_\_\_\_

6a) Description	6b) Total Mercury Emitted (lb/yr)	6c) Reduction Potential (lb/yr)	6d) Annualized Cost (\$)	6e) Cost Effectiveness (\$ per lb Hg)
<input type="checkbox"/> Baseline/Uncontrolled emissions				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				

EU \_\_\_\_\_

6a) Description	6b) Total Mercury Emitted (lb/yr)	6c) Reduction Potential (lb/yr)	6d) Annualized Cost (\$)	6e) Cost Effectiveness (\$ per lb Hg)
<input type="checkbox"/> Baseline/Uncontrolled emissions				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				

7) For each emission unit, if the alternative in use or selected for implementation is not the lowest in mercury emissions, describe why the lowest mercury emitting alternative is not in use or selected for use.

The turbine will only be used during peak power demand situations. The primary fuel is natural gas; however, when natural gas supply is curtailed, the turbine will fire distillate oil. Natural gas supply interruptions are expected.

**Figure HG-01-1. Mercury Flow Diagram for Elk River Peaking Turbine and Pre-Heater**

