

**ENHANCING THE USE OF COALS BY  
GAS REBURNING-SORBENT INJECTION**

Environmental Monitoring Report  
Illinois Power Company's Hennepin Station Unit 1  
Long Term Testing Period  
September 1, 1991 - January 15, 1993

Prepared for:  
U.S. Department of Energy  
Gas Research Institute  
State of Illinois Department of  
Energy and Natural Resources

Prepared by:  
Energy and Environmental Research Corporation  
18 Mason  
Irvine, California 92718

February, 1995

3.305011

## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION . . . . .	1
1.1 GAS REBURNING-SORBENT INJECTION . . . . .	2
1.2 DESCRIPTION OF HOST BOILER . . . . .	3
2.0 ENVIRONMENTAL MONITORING . . . . .	3
3.0 RESULTS DISCUSSION . . . . .	3
3.1 EHSS IMPACTS . . . . .	7
3.2 WATER QUALITY . . . . .	8
3.3 GR-SI ASH CHARACTERISTICS . . . . .	9
3.4 GASEOUS EMISSIONS . . . . .	15
3.5 WORKER HEALTH . . . . .	17
4.0 PERMIT CONSIDERATIONS . . . . .	19
5.0 MODIFICATIONS TO MONITORING PLAN . . . . .	21
6.0 CONCLUSIONS . . . . .	24

APPENDIX A: Hennepin Discharge Monitoring and Coal Analysis Reports

APPENDIX B: Hennepin NPDES Permit

APPENDIX C: Hennepin Project Monitoring Tables 1 and 2

## LIST OF TABLES

2-1	Hennepin Unit 1 Compliance Monitoring . . . . .	4
2-2	Supplemental Emissions Monitoring . . . . .	5
2-2	Supplemental Emissions Monitoring (Continued) . . . . .	6
3-3	Sluice Water Analyses . . . . .	10
3-3	Sluice Water Analyses (Continued) . . . . .	11
3-4	Groundwater Analyses . . . . .	12
3-4	Groundwater Analyses (Continued) . . . . .	13
3-5	Ash Analysis Parameters . . . . .	14
3-6	RCRA EP Chemical Characterization . . . . .	16
3-7	Noise Levels Near Hennepin Unit 1 . . . . .	17
3-8	Ambient Dust Levels Outside of Plant . . . . .	18
3-9	Ambient Dust Levels Inside of Plant . . . . .	18

## 1.0 INTRODUCTION

This report summarizes the results of environmental monitoring conducted in a demonstration of Gas Reburning-Sorbent Injection (GR-SI) technology, at Illinois Power Company's Hennepin Station Unit 1. Energy and Environmental Research Corporation (EER) carried out this GR-SI demonstration in a Clean Coal Technology (CCT) Round 1 Program from June, 1987 to January, 1993. The project was completed in three phases: Phase 1 - Design and Permitting, Phase 2 - Construction and Start-Up, and Phase 3 - Operation, Data Collection, Reporting and Disposition. The design of the GR-SI system was completed in March, 1989. Construction and Start-Up were completed in June, 1991 and testing (operation) of the system was initiated immediately after Start-Up. The GR and SI systems were evaluated first with parametric (optimization) tests, from June, 1991 through August, 1991. Following this, the combined GR and SI systems were operated for one year (September, 1991, to September, 1992) with the unit under normal dispatch load control. At the conclusion of the year-long GR-SI demonstration, three alternate sorbents were tested. This report presents environmental monitoring data from the long-term GR-SI testing period; earlier results were presented in quarterly reports.

The goal of the GR-SI demonstration was to reduce acid rain precursor gases, nitrogen oxides ( $\text{NO}_x$ ) and sulfur dioxide ( $\text{SO}_2$ ), by 60 and 50%, respectively. The combustion of coal at utility power plants contributes significantly to the total emissions of these species. The technology used is Gas Reburning (GR) and Sorbent Injection (SI). GR involves injection of natural gas, accounting for 15 to 25% of the total heat input, in the region above the coal burners. A reburning zone is formed, which is slightly fuel rich, to reduce  $\text{NO}_x$  to  $\text{N}_2$ . Overfire air is injected higher up in the furnace to complete the combustion process. In SI, dry hydrated lime sorbent is injected into the upper furnace for reaction with  $\text{SO}_2$ . The micron-sized sorbent is injected with carrier air at the furnace exit. Spent and unreacted sorbents are then captured by the normal particulate collection device, an ESP of baghouse fabric filter.

GR-SI demonstrations were conducted at two sites, on units typical of pre-NSPS utility boilers which contribute to emissions of acid rain precursor gases. One demonstration was at a tangentially fired unit (Illinois Power's Hennepin Station Unit 1), results of which are described in this report, while the other was at a cyclone fired unit (City Water Light & Power's Lakeside Unit 7, in Springfield, Illinois). The environmental monitoring data from the other site are presented in separate documents.

In accordance with terms of a cooperative agreement with project sponsors, EER prepared an Environmental Monitoring Plan (EMP) which specified environmental measurements to be taken during each phase of the project. The purpose of environmental monitoring was to verify that project emissions control levels were met, to ensure that there were no adverse impacts on the local environment, and to develop a data base for the GR-SI technology for future applications.

Environmental monitoring was conducted during each phase of the project to determine pre-project (baseline) environmental impacts of operating Hennepin Station Unit 1 and impacts due to GR-SI operation. The monitoring during Phases I (Design and Permitting) and II

(Construction and Start-Up) was limited to compliance monitoring of coal analyses, ash sluice system water analysis, and emissions monitoring ( $\text{NO}_x$ ,  $\text{O}_2$ ,  $\text{CO}$ ) for use in the GR-SI system design. The Hennepin Station has been operating under two permits issued by the Illinois Environmental Protection Agency (IEPA). The air emissions source permit limits emissions of  $\text{SO}_2$  while the National Pollutant Discharge Elimination System (NPDES) Permit regulates aqueous discharges to the Illinois River. Compliance with the  $\text{SO}_2$  limit is determined by analysis of coal samples for theoretical  $\text{SO}_2$  level below of 6.0 lb/MBtu. The only aqueous discharge pertinent to this project is Outfall 005, which is the discharge from the ash pond. This was of interest since spent sorbent changes the chemical makeup of the material sluiced to the pond. The compliance monitoring was continued in Phase III (Operation, Data Collection, Reporting and Disposition) and was supplemented with other measurements. These included monitoring of gaseous emissions  $\text{NO}_x$ ,  $\text{SO}_2$ ,  $\text{CO}$ ,  $\text{CO}_2$ , and hydrocarbons,  $\text{N}_2\text{O}$ , particulate loading and size distribution, fly ash resistivity, and opacity.

Funding for this project was provided by the U.S. Department of Energy (DOE), the Gas Research Institute (GRI), and the State of Illinois Department of Energy and Natural Resources (ENR). GRI and ENR were responsible for funding approximately one-third and one-sixth, respectively, of the total project costs.

### 1.1 Gas Reburning-Sorbent Injection

Gas Reburning is a combustion modification in which primary (coal) firing to the burners is limited to 75 to 85% of the fuel (corresponding to the total heat release). Nitrogen oxides ( $\text{NO}_x$ ) are formed in the burner region of the furnace from the oxidation of fuel bound nitrogen and from high temperature  $\text{N}_2$  fixation in the flame. In GR, the reduction of  $\text{NO}_x$  to molecular nitrogen ( $\text{N}_2$ ) is accomplished via the downstream injection of the remaining fuel in the form of natural gas (which also reduces the total  $\text{SO}_2$  emissions). Natural gas is injected with recirculated flue gas (FGR) through injectors in each corner of the unit. The FGR acts as a carrier to improve reburning fuel jet penetration and reduce mixing time. Sub-stoichiometric combustion of natural gas forms a variety of hydrocarbon fragments and free radicals which reduces  $\text{NO}_x$  to  $\text{N}_2$ . In a third stage, burnout air is added at a relatively low temperature in the upper furnace to complete the combustion process without generating significant additional  $\text{NO}_x$ . Three zones are created in the furnace with the following design stoichiometries: 1.10 (coal burner zone), 0.90 (reburning zone), and 1.18 (burnout zone).

Sorbent Injection (SI) involves dry injection of calcium based sorbents (such as limestone, dolomite, or hydrated lime) into the upper furnace. The micron-sized sorbent is injected with carrier air through multiple ports on the boiler front and side walls. In the furnace, the sorbent undergoes calcination to form highly reactive calcium oxide ( $\text{CaO}$ ), which then undergoes sulfation to form calcium sulfate ( $\text{CaSO}_4$ ) and sulfite ( $\text{CaSO}_3$ ) solids. Sulfation reactions occur at temperatures of 2200°F down to 1600°F. The sorbent is typically input at a rate corresponding to a Ca (sorbent) to sulfur (coal) ratio of 2.0. Sorbent/ $\text{SO}_2$  reactions can also take place at lower temperatures. Thus, it is possible to inject sorbent at different locations, such as with the burnout air, at the exit from the superheater, or into the ducting downstream of the air

heater with H<sub>2</sub>O added for humidification. The spent and unreacted sorbent are collected together with the fly ash by the electrostatic precipitator. SO<sub>2</sub> reduction of at least 50% was expected from both sorbent-SO<sub>2</sub> capture and from replacement of coal with sulfur free natural gas.

## 1.2 Description of Host Boiler

The host unit is a 71 MW<sub>e</sub> (net) tangentially fired unit, supplied by Combustion Engineering. At its normal continuous rating the unit produces 525,000 lb/hr of superheated steam at a temperature of 1005°F and a pressure of 1500 psig. It has a reheat steam cycle which reheats 462,000 lb/hr of steam also to a temperature of 1005°F. It was commissioned in 1953 and fires a high sulfur (approximately 3%) Midwestern bituminous coal. Coal is pulverized to a specification of 70% passing 200 mesh U.S. Standard Sieve, then fired through three levels of tangential nozzles. Coal combustion takes place in a swirling zone in the furnace. The combustion gases then flow through the convective pass consisting of a secondary superheater, high temperature reheater, primary superheater, low temperature reheater, economizer, and regenerative air heater. The unit is equipped with an ESP, which provides 223 ft<sup>2</sup>/1000 actual cubic feet of flue gas per minute, at the units rated capacity. The ESP limits particulate emissions to well below the 0.1 lb/MBtu limit. Combustion gases then are discharged to the stack.

## 2.0 ENVIRONMENTAL MONITORING

Environmental monitoring was conducted in each phase of the project. The purpose of the monitoring was to ensure that GR-SI operation was conducted in an environmentally acceptable manner and to establish a data base of environmental parameters for use in future applications of technology. Monitoring in Phases I and II entailed compliance monitoring of ash sluice discharge water, coal analyses, and limited emissions characterization for the purposes of GR-SI process design. The measurements are shown in Table 2-1. The Phase III monitoring was aimed at obtaining a full range of measurements to determine process efficiency and impacts on gaseous or aqueous discharges. The supplementary measurements are listed in Table 2-2. The measurements of NO<sub>x</sub> and SO<sub>2</sub> emissions were of primary importance to verify that project target emissions reductions were met. Other measurements were used to characterize combustion completion (CO), ESP performance (particulate matter), and other species which may be impacted by GR-SI at a coal fired unit. EPA reference methods were used to verify the accuracy of continuous emissions measurements.

## 3.0 RESULTS DISCUSSION

The Environmental Health, Safety and Socioeconomic (EHSS) impacts of the GR-SI demonstration on the local region are discussed in this section. Following this, the results of environmental monitoring are presented. Impacts of GR-SI on the quality of water discharged from the site and in groundwater wells are discussed. The characteristics of the major waste product of GR-SI, solid fly ash/spent sorbent, are then discussed. The air

TABLE 2-1. HENNEPIN UNIT 1 COMPLIANCE MONITORING

<u>AIR EMISSION SOURCE OPERATING PERMIT</u>			
<u>MEASUREMENT</u>	<u>SAMPLE TYPE</u>	<u>FREQUENCY</u>	<u>LOCATION</u>
Coal composition sulfur, ash, Btu, moisture	24 hour composite	Daily	Coal hoppers
<u>NPDES PERMIT</u>			
<u>MEASUREMENT</u>	<u>SAMPLE TYPE</u>	<u>FREQUENCY</u>	<u>LOCATION</u>
Flow Rate	Single reading estimate	Once/wk	Existing ash pond discharge
pH	Grab sample	Once/wk	Existing ash pond discharge
Total Suspended Solids	24 hour composite	Once/wk	Existing ash pond discharge
Oil and Grease	Grab sample	Twice/mo	Existing ash pond discharge

TABLE 2-2. SUPPLEMENTAL EMISSIONS MONITORING

<u>MEASUREMENT</u>	<u>SAMPLE TYPE</u>	<u>LOCATION</u>
<b><u>PHASE I</u></b>		
Preliminary NO <sub>x</sub>	Continuous (7E)	Economizer Inlet
O <sub>2</sub>	Continuous (3A)	Economizer Inlet
CO	Continuous (10)	Economizer Inlet
<b><u>PHASE II</u></b>		
No measurement		
<b><u>PHASE III</u></b>		
Baseline NO <sub>x</sub>	Continuous (7E)	Econ Outlet or Stack Breeching
SO <sub>2</sub>	Continuous (6C), Method 6	Econ Outlet or Stack Breeching
CO	Continuous (10)	Econ Outlet or Stack Breeching
CO <sub>2</sub>	Continuous (3A) Method 3	Econ Outlet or Stack Breeching
O <sub>2</sub>	Continuous (3A) Method 3	Econ Outlet or Stack Breeching
Particulate	Method 17	ESP Inlet
Particulate	Method 5	ESP Outlet
Particle Size Distribution	Cascade Impactors	ESP Inlet and Outlet
Resistivity	Cyclonic flow probe	ESP Inlet
Velocity	Method 2	ESP Inlet
Opacity	In-situ optical	Stack Breeching
N <sub>2</sub> O	Extractive	Stack Breeching
Parametric NO <sub>x</sub>	Continuous (7E)	Econ Inlet or ESP Outlet
SO <sub>2</sub>	Continuous (6C)	Econ Inlet or ESP Outlet
CO	Continuous (10)	Econ Inlet or ESP Outlet
CO <sub>2</sub>	Continuous (3A)	Econ Inlet or ESP Outlet
O <sub>2</sub>	Continuous (3A)	Econ Inlet or ESP Outlet
HC	Continuous (25A)	Econ Inlet or ESP Outlet
Particulate	Method 17	ESP Inlet
Particulate	Method 5	ESP Outlet
Particle Size Distribution	Cascade Impactors	ESP Inlet and Outlet
Resistivity	Cyclonic flow probe	ESP Inlet
Velocity	Method 2	ESP Inlet
Opacity	In-situ optical	Stack Breeching
N <sub>2</sub> O	Extractive	Stack Breeching



TABLE 2-2. SUPPLEMENTAL EMISSIONS MONITORING (CONTINUED)

Long Term Operation	NO <sub>x</sub>	Continuous (7E)	Stack Breeching
	SO <sub>2</sub>	Continuous (6C), Method 6	Stack Breeching
	CO	Continuous (10)	Stack Breeching
	CO <sub>2</sub>	Continuous (3A), Method 3	Stack Breeching
	O <sub>2</sub>	Continuous (3A), Method 3	Stack Breeching
	HC	Continuous (25A)	Stack Breeching
	Particulate	Method 17	ESP Inlet
	Particulate	Method 5	ESP Outlet
	Particle Size Distribution	Cascade Impactors	ESP Inlet and Outlet
	Resistivity	Cyclonic flow probe	ESP Inlet
	Velocity	Method 2	ESP Inlet
	Opacity	In-situ optical	Stack Breeching
	N <sub>2</sub> O	Extractive	Stack Breeching

emissions measured during the GR-SI demonstration are then presented. Finally, the impacts of GR-SI on worker health is addressed.

### 3.1 EHSS Impacts

The EHSS impacts of the GR-SI demonstration were addressed prior to initiation of the project and evaluated during the testing phase. Health concerns for Hennepin Station personnel due to the GR-SI demonstration were limited to two areas: noise from GR-SI equipment and potential hazards in handling sorbent. The GR-SI system includes four fans. Data on the noise levels of three of the four were available and indicated that they produce noise levels below that considered an audiometric hazard (85 decibels - averaged over 8 hours) at the fan casing. Data on noise from operation of the other fan were not available, but this was expected to be minor in relation to background station noise. The other health concern was from handling of sorbent. The sorbent is an alkaline material and is a known irritant. The transport system used to carry the sorbent to the silo incorporated features to limit fugitive dust emissions. The silo vent is equipped with a fabric filter to prevent fugitive dust emissions. The sorbent transmission system to the boiler also has design features to prevent dust emissions. In addition, specific handling techniques were developed in case project or IP personnel were required to directly handle the sorbent. This included use of tight goggles and dust masks, which have been required for employees handling sorbent at EER's Santa Ana Test Facility.

The socioeconomic impacts were also predicted prior to initiation of the project. The impacts of the GR-SI demonstration on the area surrounding the Hennepin Station were determined to be minor. The project required delivery of two truckloads of sorbent per week, but the transportation route was planned along a major highway and not along small residential streets. The added traffic was very minor in comparison to the 1800 vehicles which daily traversed nearby Interstate Highway 180. Economic impacts to the area were expected to be minor. A majority of the testing personnel involved in the GR-SI demonstration at Hennepin were from outside of the local area; they were EER personnel based in the Orrville, OH office. These included the Phase II construction manager and the Phase III GR-SI testing personnel. Some support, particularly in Phase II, was provided by local personnel. The use of local personnel and purchased materials had small positive impacts on the local economy.

The energy and material requirements are part of the socioeconomic impacts. Full load GR-SI operation resulted in an increase in auxiliary power of approximately 300 kW. This is 0.4 percent of the generating capacity of Unit 1 and 0.26 percent of the station capacity. Therefore, GR-SI had a negligible impact on the electric energy availability in the area. The project resulted in a reduction in coal usage due to firing 18 percent gas and due to the demand-related reduction in capacity factor from approximately 62 to 34 percent. These resulted in a reduction in coal usage by Unit 1 from approximately 184,000 to 98,000 tons/year. The full load GR-SI design natural gas input was 2240 scfm and the average natural gas consumption over the long-term testing period was 1930 scfm. GR with 2240 scfm of natural gas at a capacity factor of 34 percent, results in a total annual consumption of 400 MSCF. Capacity exists to deliver 3,400 billion SCF of natural gas annually to the U. S. market over current consumption;

therefore the natural gas used is a very small percentage of available natural gas. Full load GR-SI at a Ca/S molar ratio of 2.0 required sorbent input at a rate of 7,200 lb/hr. At a capacity factor of 34 percent, the annual sorbent usage is 10,720 tons.

### 3.2 Water Quality

Aqueous discharges from the Hennepin Station are regulated by the National Pollutant Discharge Elimination System (NPDES) permit. A modified permit was issued by the Illinois Environmental Protection Agency (IEPA) on June 2, 1989. It specified discharge limits and monitoring requirements for the following sources of discharge water:

<u>Stream Number</u>	<u>Discharge Stream</u>
001	Condenser Cooling Water
001 (a)	Boiler Blowdown
001 (b)	Intake Screen Backwash
001 (c)	Roof Drain Discharge
003	Ash Lagoon #2 and #4 Discharge
005	Ash Lagoon #3 Discharge
005(a)	Chemical Metal Cleaning Waste Treatment System Effluent

The GR-SI demonstration potentially impacted only Stream No. 005, which contains the bottom and fly ash transport water from Unit 1. Unit 1 sluice water was estimated to be 0.35 Million Gallons per Day (MGD), but was expected to increase to 0.69 MGD during full load GR-SI operation. The permit specified the frequency and type of sampling required to verify that the following maximum discharge limits were not exceeded:

pH	Minimum: 6	Maximum: 9
Total Suspended Solids (TSS)	Average: 15.0 mg/l	Maximum: 30.0 mg/l
Oil and Grease:	Average: 15.0 mg/l	Maximum: 20.0 mg/l

The permit also specified limits of thermal impacts on the main river water. A maximum temperature rise of 5°F above the natural temperature and maximum temperatures of 60 to 90°F, depending on the month, are also specified.

Application of GR-SI to Hennepin Unit 1 was expected to change the nature and quantity of ash produced, but expected impacts on the ash pond discharge water makeup were expected to be minor. The GR-SI ash is fully characterized in the following section. Only a minor impact on Total Suspended Solids (TSS) was expected, since the sorbent size is smaller than normal fly ash, with a mean particle diameter of 5 microns, and has a lower settling rate. But with proper retention time in the pond, any increase in total suspended solids was expected to be minor. Injection of CO<sub>2</sub> was used to bring the pH to the acceptable range, and no impact on the oil or grease was expected. Some increase in sulfates was expected since a fraction of the spent sorbent sluiced with fly ash is CaSO<sub>4</sub>.

The compliance monitoring conducted by IP during long-term GR-SI testing indicated no discharge from the ash pond. The existing pond is unlined, resulting in flow into the ground instead of discharge to the Illinois River. The monitoring sheets, submitted to IEPA, are attached in Appendix A. During the first quarter of 1992, eight sluice water samples were taken during baseline operation and five during GR-SI operation. The pH of all samples was in the 6 to 9 range.

Supplemental analyses of ash sluice water were conducted. Samples taken during baseline operation as well as the long-term testing period were analyzed and the results are shown in Table 3-3. The results indicate low metals content, with most metals not detected. Moderate levels of sulfates, Fe, and CaO were detected. The sluice water concentrations are not required to conform to the limits stated above since those apply to water discharged to the Illinois River and no discharge took place during the long-term testing period.

Supplemental monitoring of groundwater was also conducted. The groundwater sampling data for sulfite, sulfate, nitrate as nitrogen, nitrite as nitrogen, total dissolved solids, boron, chloride, etc., are presented in Table 3-4. The groundwater concentration standards depend on the classification. Class I and Class II groundwater have standards for total dissolved solids (TDS) of 1200 mg/l and sulfate of 400 mg/l. Application of GR-SI to the unit had the potential to increase sulfate concentration in the discharge water, from sluicing of solid  $\text{CaSO}_4$ . Elevated groundwater concentrations of sulfates, relative to the standards, were measured in some of the wells.

### 3.3 GR-SI Ash Characteristics

GR-SI operation resulted in an increase in the quantity and a change in the makeup of the ash produced. Under GR-SI operation at a Ca/S of 2.0, approximately 7,200 lb/hr of sorbent was injected. The sorbent reacted with flue gas  $\text{SO}_2$  and oxygen to produce calcium sulfate and calcium sulfite. Over the long-term GR-SI demonstration period the average calcium utilization was 24%, with the remainder of the sorbent passing through as unreacted lime (CaO).

Changes in ash characteristics were evaluated by firing coal representative of the normal supply at the Hennepin Station in a pilot scale test furnace, under conditions designed to simulate baseline and GR-SI conditions. The ash produced was then evaluated for characteristics shown in Table 3-5. The ash analyses were compiled in a document entitled "Pilot Scale Ash Characterization Test Report for IP Hennepin Station, Unit 1", which was issued in December 1988. The results of ash characterization with respect to composition, pozzolanic activity (compressive strength in a cement mix), temperature rise upon addition of water, and leaching properties are summarized below.

TABLE 3-3. SLUICE WATER ANALYSES

(BASELINE OPERATION)

24 hour Composite Samples  
Sampling Period

From: 8:30 7/20/92  
To: 8:30 7/21/92

From: 8:30 7/22/92  
To: 8:30 7/23/92

<u>Parameter</u>	<u>Units</u>	<u>Method</u>	<u>MDL</u>	<u>Result</u>	<u>Method</u>	<u>MDL</u>	<u>Result</u>
Arsenic [As] (total)	mg/l	SW6010	0.1	ND	SW6010	0.2	ND
Barium [Ba] (total)	mg/l	SW6010	0.003	0.022	SW6010	0.1	4.2
Cadmium [Cd] (total)	mg/l	SW6010	0.007	ND	SW6010	0.1	ND
Chromium [Cr] (total)	mg/l	SW6010	0.025	ND	SW6010	0.2	1.6
Lead [Pb] (total)	mg/l	SW6010	0.085	ND	SW6010	0.2	ND
Selenium [Se] (total)	mg/l	SW6010	0.2	ND	SW6010	0.5	ND
Silver [Ag] (total)	mg/l	SW6010	0.01	ND	SW6010	0.2	ND
Iron [Fe] (total)	mg/l	SW6010	0.017	0.18	SW6010	0.34	1100
Manganese [Mn] (total)	mg/l	SW6010	0.003	ND	SW6010	0.1	3.2
Mercury [Hg] (total)	mg/l	SW7470	0.005	ND	SW7470	0.001	ND
Boron [B] (total)	mg/l	SW6010	0.25	8.56	SW6010	0.5	ND
Calcium Oxide	mg/l	SW6010	0.3	110	SW6010	0.5	1800
Copper [Cu] (total)	mg/l	SW6010	0.012	ND	EPA200.7	0.2	0.8
Nickel [Ni] (total)	mg/l	SW6010	0.034	ND	EPA100.7	0.2	1.25
Zinc [Zn] (total)	mg/l	SW6010	0.004	ND	EPA200.7	0.2	6.46
Total Dissolved Solids (Filt. Residue)	mg/l	EPA160.1	5	620	EPA160.1	5	1100
Total Suspended Solids (Non-Filt Residue)	mg/l	EPA160.2	5	5600	EPA160.2	5	20000
Sulfate	mg/l	EPA375.4	5	230	EPA375.4	5	390
Oil and Grease (grav)	mg/l	EPA413.1	2	ND	EPAA413.1	2	ND
pH (lab)	S	SW9040	--	9.21	---	---	---

MDL: Method Detection Limit

ND: Not detected at a concentration greater than or equal to the MDL

TABLE 3-3. ASH SLUICE WATER ANALYSES (CONTINUED)  
(LONG TERM DEMONSTRATION PERIOD)

Date	1/6/92	1/6/92	1/7/92	1/8/92	1/9/92	1/9/92
Test	----	----	BL	BL	GR	GR
pH	11.08	11.61	11.28	11.15	11.11	11.30
Dissolved Solids(mg/l)	1500	1200	2100	1400	2800	3800
Suspended Solids(mg/l)	5500	10000	5000	4500	2000	1400
Sulfates (mg/l)	480	390	780	500	670	530
Oil, Grease (mg/l)	ND	ND	ND	ND	ND	ND
<u>Metal (mg/kg)</u>						
As	ND	ND	ND	ND	ND	ND
Ba	5.9	3.8	9	5.6	5.4	4.4
Cd	ND	ND	ND	ND	ND	ND
Cr	ND	ND	ND	ND	ND	ND
Pb	ND	ND	ND	ND	ND	ND
Se	ND	ND	ND	ND	ND	ND
Ag	ND	ND	ND	ND	ND	ND
Fe	450	320	780	530	360	330
Mn	5.4	3.6	8.0	4.5	5.0	3.9
Hg	ND	ND	ND	ND	ND	ND
B	50	30	74	50	54	40
CaO	74	53	110	66	1600	1200

TABLE 3-4. GROUNDWATER ANALYSES

Sample Date	Well #	Water Level	pH	Temp °C	SO <sub>3</sub> mg/l	TDS mg/l	B mg/l	SO <sub>4</sub> mg/l	NO <sub>2</sub> mg/l	Cl mg/l	NO <sub>3</sub> <sup>-</sup> mg/l	Ca mg/l	Mn mg/l
2/5/92	W1	446.21	7.3	12.5	<0.5	700	5.1	95	0.02	52.0	<0.05	110	130
2/5/92	W2	446.52	8.6	13.5	<0.5	990	14.0	450	0.02	69.2	0.1	160	23
2/5/92	W3	447.98	7.2	13.2	<0.5	600	3.4	480	0.02	36.2	0.1	100	230
2/5/92	W4	446.72	7.8	12.9	<0.5	820	5.0	190	0.02	66.6	<0.05	140	98
2/5/92	W5	446.52	7.3	12.1	<0.5	410	1.7	120	0.02	27.8	8.2	89	<5
2/5/92	W5rep	---	---	---	<0.5	410	2.0	90	0.02	27.6	9.0	87	<5
8/25/92	W1	444.73	7.4	14.4	<0.5	730	5.9	260	0.02	51.7	<0.05	100	120
8/25/92	W2	445.28	8.8	14.1	<0.5	800	13.0	320	0.02	87.7	<0.05	130	1400
8/25/92	W3	445.44	7.4	14.9	<0.5	750	5.0	250	0.02	50.6	0.1	130	120
8/25/92	W4	445.35	7.3	14.4	0.6	870	6.7	350	0.02	61.3	<0.05	130	120
8/25/92	W5	444.99	7.4	12.9	<0.5	410	1.5	77	0.02	23.6	8.3	74	<5
8/25/92	W1rep	---	---	---	<0.5	720	5.6	240	0.02	52.2	0.1	100	110
11/17/92	W1	447.97	7.4	12.9	<0.5	738	6.4	280	0.02	53.8	<0.05	98	100
11/17/92	W2	448.23	8.9	12.6	<0.5	824	12.5	402	0.02	81.3	0.1	108	17
11/17/92	W3	448.40	7.4	12.5	<0.5	663	4.4	241	0.02	39.8	<0.05	87	460
11/17/92	W4	448.36	7.3	12.5	0.6	867	7.5	395	0.02	60.0	<0.05	110	63
11/17/92	W5	444.99	7.9	11.1	<0.5	418	1.8	73	0.02	26.1	8.4	77	<5
11/17/92	W3rep	---	---	---	<0.5	696	4.7	239	0.02	43.1	<0.05	87	540
2/2/93	W1	449.51	7.1	12.9	<0.5	609	4.6	230	0.02	43.2	<0.05	87	140
2/2/93	W2	449.61	7.1	12.1	<0.5	1048	12.2	560	0.02	87.4	<0.05	88	26
2/2/93	W3	450.23	7.1	12.1	<0.5	639	4.8	250	0.02	39.5	<0.05	170	230
2/2/93	W4	449.99	7.1	12.9	<0.5	868	7.4	400	0.02	60.2	<0.05	96	92
2/2/93	W5	449.71	7.0	11.5	<0.5	395	1.6	76	0.02	24.8	8.0	78	<5
2/2/93	W3rep	---	---	---	<0.5	610	5.1	230	0.02	45.3	<0.05	89	130

TABLE 3-4. GROUNDWATER ANALYSES (continued)

Sample Date	Well #	Water Level	pH	Temp °C	SO <sub>3</sub> mg/l	TDS mg/l	B mg/l	SO <sub>4</sub> mg/l	NO <sub>2</sub> mg/l	Cl mg/l	NO <sub>3</sub> <sup>-</sup> mg/l	Ca mg/l	Mn mg/l
5/18/93	W1	448.23	7.0	14.0	<0.5	720	5.6	270	0.02	52.4	<0.05	94	140
5/18/93	W2	448.18	8.6	15.1	<0.5	920	11.4	420	0.02	77.2	1.0	130	25
5/18/93	W3	449.00	7.2	14.2	<0.5	690	4.6	260	0.02	42.0	<0.05	91	270
5/18/93	W4	448.84	7.2	14.4	<0.5	850	7.7	430	0.02	69.6	<0.05	110	120
5/18/93	W5	448.53	7.3	11.6	<0.5	450	1.8	130	0.02	38.0	6.1	81	<5.0
5/18/93	W2rep	---	---	---	<0.5	910	11.6	470	0.02	76.6	1.2	120	27
8/17/93	W1	448.22	7.4	14.2	<0.5	790	5.8	300	0.02	56.6	<0.05	92	130
8/17/93	W2	448.27	8.9	13.3	<0.5	920	9.7	490	0.02	70.2	0.95	92	16
8/17/93	W3	448.78	7.3	13.5	<0.5	850	4.9	320	0.02	52.8	<0.05	78	870
8/17/93	W4	448.77	7.4	14.2	<0.5	900	7.6	430	0.02	73.0	<0.05	94	130
8/17/93	W5	448.47	7.3	11.8	<0.5	610	2.5	240	0.02	56.2	3.8	83	<5.0
8/17/93	W5rep	---	---	---	<0.5	611	2.3	230	0.02	56.4	4.1	94	<5.0
Average		447.73	7.55	13.1	<0.5	717	6.0	286	0.02	53.7	1.7	102	210



TABLE 3-5. ASH ANALYSIS PARAMETERS.

<u>PARAMETER</u>	<u>METHOD</u>	<u>SAMPLES ANALYZED</u>	
		<u>BL</u>	<u>GR-SI</u>
Temperature Rise on Addition of Water	ASTM D4326	X	X
Sulfate	ASTM D1757		X
Phenols	Std Methods for Water and Wastewater (SMWW) Method 510		X
Sulfide	SMWW 427		X
Chloride	SMWW 407C		X
Cyanide	SMWW 412		X
Total Organic Carbon	ASTM D429		X
Chemical Oxygen Demand	ASTM D1252		X
EP Tox - Metals, Ph	Ref: EPA SW-846	X	X
Paint Filter Test	Ref: EPA SW-846		X
Specific Gravity	ASTM C188, C618		X
Apparent Loose Density	ASTM C110-85, Section 15	X	X
Apparent Packed Density	ASTM C110-85, Section 16	X	X
Fineness	ASTM 430, C618		X
Temperature Rise on Addition of Water	ASTM C110-85, Section 10	X	X
Pozzolanic Activity	ASTM C311, C618		X
Increase of Drying Shrinkage	ASTM C311, C618		X
Autoclave Expansion	ASTM C151, C618		X
Water Requirement	ASTM C311, C618		X
Settling Rate of Water	ASTM C110-85, Section 9	X	X

The baseline ash (without GR-SI) contained approximately 55 percent silica, 21 percent alumina, 12 percent ferric oxide, and various other materials and trace minerals. The GR-SI ash was approximately 50 percent spent sorbent, with 42 percent calcium oxide and 6 percent sulfur trioxide (calcium sulfate), 28 percent silica, 11 percent alumina, and 6 percent ferric oxide. The high CaO content influenced several characteristics including pozzolanic activity and temperature rise upon addition of water.

Pozzolanic activity was evaluated by two tests, a 7-day and 28-day test. The evaluation involves replacement of 35 percent of a cement mixture with the material to be tested. The results of the 7-day test indicated a compressive strength of 505 psi. The 28-day test results are presented as a percentage of the control (pure cement case). The extended test hardness was 127 percent of the control, i.e. 27 percent stronger than pure cement. Therefore, the fly ash/sorbent mixture has cementitious properties, hardening to a very strong material.

Another characteristic affected by the high CaO content is the temperature rise upon addition of water. The baseline ash showed a temperature rise of only 0.5°C upon addition of water, while addition of water to GR-SI ash resulted in a temperature increase of 9°C. The weight ratio of water to ash in these evaluations was approximately 4:1, which is significantly less than the 17.6:1 used in sluicing the ash. Therefore, the actual water temperature rise was significantly less than determined by this test.

The leaching characteristics of the ash were evaluated in an EPA EP toxicity test. The metal content and the limits requiring classification as a hazardous material, are presented in Table 3-6. Both baseline and GR-SI ash have metal contents far below the EPA hazard level. Reductions in leaching of Cadmium and Chromium from GR-SI ash relative to baseline ash were measured. It would be expected that leachate from GR-SI ash would have lower metals content than baseline fly ash since the sorbent is over 90 percent calcium hydroxide. Also, for EP toxicity tests, the higher pH of this GR-SI ash binds the heavy metals, making them significantly less prone to leaching.

### 3.4 Gaseous Emissions

The IEPA limits gaseous emissions of SO<sub>2</sub> to 17,050 lb per hour, from Units 1 and 2. Compliance monitoring of coal analyses is required with a level below 6.0 lb/MBtu indicating compliance. During the first three quarters of 1992, the coal sulfur contents were: Quarter 1, 1992 -- 5.26 lb/MBtu, Quarter 2, 1992 -- 5.30 lb/MBtu, Quarter 3, 1992 -- 5.32 lb/MBtu. GR-SI operation resulted in reduction in emissions of SO<sub>2</sub>, NO<sub>x</sub>, CO<sub>2</sub>, HCl, and HF, while CO emissions were maintained generally below 100 ppm. Over the long-term GR-SI testing period, the average emissions and reductions from Unit 1 were:

Emissions (lb/MBtu)					Reduction From Baseline (%)				
<u>SO<sub>2</sub></u>	<u>NO<sub>x</sub></u>	<u>CO<sub>2</sub></u>	<u>HCl</u>	<u>HF</u>	<u>SO<sub>2</sub></u>	<u>NO<sub>x</sub></u>	<u>CO<sub>2</sub></u>	<u>HCl</u>	<u>HF</u>
2.510	0.246	189	0.017	0.00010	52.7	67.3	7.8	73.0	97.0

TABLE 3-6. RCRA EP CHEMICAL CHARACTERIZATION

	<u>BASELINE ASH</u>	<u>GR-SI ASH</u>	<u>EPA HAZARD LEVEL</u>
Arsenic (mg/l)	<0.1	<0.1	5.0
Barium (mg/l)	<0.2	<0.2	100.0
Cadmium (mg/l)	0.08	<0.01	1.0
Chromium (mg/l)	1.26	0.14	5.0
Hexavalent Chromium, Cr <sup>+6</sup> (mg/l)	<0.2	<0.4	---
Lead (mg/l)	<0.05	<0.05	5.0
Mercury (mg/l)	<0.0005	<0.0005	0.2
Selenium (mg/l)	<0.1	<0.1	1.0
Silver (mg/l)	0.02	0.08	5.0
Sample Weight (g)	100.02	100.04	
Volume of 0.5 N acetic acid required for pH adjustment (ml)	200	400	
Volume of deionized water added to the extract (ml)	1800	1600	
Final volume of the extract (ml)	2000	2000	
Initial pH	10.44	12.22	12.5
Final pH	4.86	12.14	

All of the above emissions were measured, with the exception of the CO<sub>2</sub> emissions rate which was calculated based on natural gas and coal composition. The HCl and HF emissions and reductions are the median of measured data during GR-SI operation.

N<sub>2</sub>O emissions were also measured during the first quarter of 1992, under baseline, SI, and GR-SI operation. The average N<sub>2</sub>O emissions were: 0.8 ppm (baseline), 1.4 ppm (SI), and 1.6 ppm (GR-SI). These levels are very low, indicating that GR-SI operation results in insignificant emissions of N<sub>2</sub>O.

Fly ash resistivity measurements indicated an increase from the baseline range of 3x10<sup>10</sup> to 8x10<sup>10</sup> ohm-cm, to the range of 6x10<sup>10</sup> to 3x10<sup>11</sup> ohm-cm under GR-SI. However, flue gas humidification, used when injecting sorbent, enhanced ESP performance.

Particulate matter sampling was conducted during baseline, GR, and GR-SI operation. The maximum emissions rate was 0.035 lb/MBtu, measured during baseline operation. Flue gas humidification was successfully applied, resulting in particulate emissions in the 0.015 to 0.025 lb/MBtu under full-load GR-SI operation. A small increase in the fraction of the PM<sub>10</sub> was observed for GR-SI emissions. During full-load GR-SI operation the fraction of particulate matter under 10 microns was approximately 75 to 90 percent of the outlet loading. This may be compared to a baseline PM<sub>10</sub> fraction of approximately 60 to 75 percent. But since the total mass of particulate emissions are reduced by a small amount [GR-SI Full Load Average: 0.021 lb/MBtu, Baseline Full Load Average: 0.026 lb/MBtu] this change in the fraction of PM<sub>10</sub> did not increase the total mass of PM<sub>10</sub> emitted.

### 3.5 Worker Health

Monitoring of noise levels near the unit was conducted during GR operation in January, 1992. The noise levels were measured at several locations including, near the sootblower air compressor, west of the overfire air duct on the 5th floor, and in the sorbent fan area on the 4th floor. The audiometric device used was a Bruel & Kjaer Model Number 2205. The results indicate that noise exceeded the Department of Labor's Occupational Safety and Health Administration (OSHA) noise 'action limit' of 85 decibels (applied over an 8-hour period) only near the sootblower air compressor. While the noise level exceeded 85 decibels at this location, employees are only briefly at this location during eight hour period. Audiometric hazard warning signs have been posted on the sootblowing air compressor and on the entry doors to the sorbent silo.

TABLE 3-7. NOISE LEVELS NEAR HENNEPIN UNIT 1

<u>Date</u>	<u>Test Location</u>	<u>Test Condition</u>	<u>Noise (db)</u>
1/14/92	Sootblower Air Compressor (In-Service)	GR	99
1/14/92	Fourth Floor, west side of boiler	GR	79
1/14/92	Fifth Floor, west of OFA duct	GR	79

OSHA has also established a standard for total dust exposure of 15 mg/m<sup>3</sup> and standard for coal dust of 2.4 mg/m<sup>3</sup>, above which employees should not be exposed for more than 8 hours. Ambient air sampling was conducted in January, 1992. The results indicate very low dust levels as shown in the following table:

TABLE 3-8. AMBIENT DUST LEVELS OUTSIDE OF PLANT

<u>Date</u>	<u>Filter Number</u>	<u>Location</u>	<u>TSP (<math>\mu\text{g}/\text{m}^3</math>)</u>	<u>Plant Contribution (<math>\mu\text{g}/\text{m}^3</math>)</u>
1/14/92	1453	upwind	16.7	5.2
1/14/92	1452	downwind	21.9	
1/18/92	1455	upwind	21.4	1.1
1/18/92	1454	downwind	22.5	
1/21/92	1456	upwind	63.2	Negligible*
1/21/92	1457	downwind	36.2	
1/22/92	1459	upwind	39.5	Negligible*
1/22/92	1558	downwind	20.5	

TSP: Total Suspended Particles

\*: High background contribution from neighboring plant facility

Air sampling in several work areas was also conducted. The results indicate that dust levels are below 15 mg/m<sup>3</sup> in all areas with the exception of inside the lime silo. High dust levels would be expected in this location, requiring use of protective dust masks.

TABLE 3-9. AMBIENT DUST LEVELS INSIDE OF PLANT

<u>Date</u>	<u>Location</u>	<u>Operating Condition</u>	<u>Dust Concentration (<math>\text{mg}/\text{m}^3</math>)</u>
1/14/92	Inside lime silo	GR	33.8
	Fifth Floor	GR	7.43
1/17/92	Inside lime silo	Baseline	8.14
	Fifth Floor	Baseline	3.22
<u>Date</u>	<u>Location</u>	<u>Operating Condition</u>	<u>Dust Concentration (<math>\text{mg}/\text{m}^3</math>)</u>
1/21/92	Inside lime silo	GR-SI	12.6
	Fifth Floor	GR-SI	1.37

While the high dust level inside the lime silo was measured during GR operation, the high dust level may be attributed to GR-SI operation during the previous day.

#### 4.0 PERMIT CONSIDERATIONS

Permitting considerations for the Hennepin Unit 1 GR-SI demonstration project were considered at the beginning of the project. The analysis focused on determining the necessary permitting changes for installation and operation of the GR-SI system. Several permanent and temporary modifications required consideration, including:

- temporary reductions in NO<sub>x</sub> and SO<sub>2</sub>
- possible temporary increase in PM<sub>10</sub>
- possible increase in stack gas temperature
- discharge of ash/sorbent sluice water
- permanent humidification capability
- permanent sorbent injection capability

The temporary reductions in NO<sub>x</sub> and SO<sub>2</sub> emissions due to GR-SI operation had the potential for application of NSPS or PSD provisions of the CAA upon completion of the program, when the emissions would rise to original levels. Section 60.14 of Title 40 of the Code of Federal Regulations (40 CFR 60.14) states that "any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification" necessitating permitting of the facility as a new source. In addition, 40 CFR 52.21 indicates that an increase in NO<sub>x</sub> or SO<sub>2</sub> emissions of 40 tpy (36 ton/a) makes a source subject to PSD provisions of the CAA. But, since the primary purpose of the retrofit was to control gaseous emissions, it was expected that EPA would rule that the retrofit was not a modification requiring new emissions standards.

A modified permit to construct was issued by the IEPA on May 27, 1992. The permit granted construction of a flue gas humidification system, a sorbent silo with fabric filter, a sorbent surge tank with a fabric filter, a multiclone in the flue gas recirculation line, and the sorbent injection system. The permit also stated the following:

- The construction and operation of the Clean Coal Technology (CCT) program does not constitute a modification as defined in 40 CFR 60.14. Since the equipment installed has the primary function of reducing air pollutants, under 40 CFR 60.14 (e) (5), it is exempt from being considered a modification.
- Annual emissions of particulate matter and PM<sub>10</sub> during the CCT demonstration program shall not increase more than 24.9 and 14.9 tons, respectively, above the pre-CCT demonstration levels. Accordingly, the CCT project does not constitute a major modification for purposes of 40 CFR 52.21.
- The Clean Coal Technology (CCT) demonstration project shall be limited in operation to one year, provided that this project may be formally extended by

the Agency, if necessary, to complete the CCT demonstration program but not to exceed 5 years including time needed to restore the boiler to original operating conditions. The limited operation period classifies the project as temporary.

- As a temporary demonstration project, emissions from this unit during the demonstration project shall not be considered "representative" for the purposes of PSD or NSPS emissions comparisons. Accordingly, removal or discontinued use of the CCT demonstration equipment shall not be considered as a modification for purposes of 40 CFR 52.21 or 40 CFR 60.14.
- Routine actions taken to restore this unit to its pre-CCT demonstration condition and operating at the condition and capability will not subject this unit to the requirements of 40 CFR 52.21 or 40 CFR Part 60.
- The emissions limits, 35 Ill. Adm. Code 212, 214 and 217, which currently apply to this unit shall not change as a result of the construction, removal or discontinued use of the CCT demonstration equipment, as described in the application.

Therefore, a return to pre-project emissions will not trigger application of NSPS or PSD provisions.

The permit also required that particulate matter emissions measurements be conducted upon resumption of GR-SI testing. These tests revealed that humidification effectively enhanced ESP performance, resulting in no change in particulate matter emissions and little change in the ESP outlet and stack gas temperature.

The project originally called for construction of a new ash pond for disposal of the ash/spent sorbent. This would have required modification of the NPDES permit as well as additional permitting considerations due to construction in a 100-year floodplain. Due to several factors including prohibitive cost of construction of a new ash pond, sluicing of the GR-SI ash to the original pond was decided upon. A modified NPDES was issued by the IEPA addressing the required handling of GR-SI ash and the required environmental monitoring in case of a discharge to the Illinois River. The permit specified use of CO<sub>2</sub>, acetic acid or other chemical to adjust the pH to approximately 9.0. Other, less costly methods of neutralization were prohibited due to their potential to increase chloride and sulfate levels in the Illinois River and groundwater. Since no discharge to the river occurred during the GR-SI demonstration, the extensive monitoring specified was limited. If a discharge had occurred, two types of testing would have been required: chemical specific testing on a quarterly basis, and biomonitoring of acute toxicity. The chemical specific testing was conducted regularly, even though not required by the conditions of the NPDES Permit. Biomonitoring was not conducted.

## 5.0 MODIFICATIONS TO MONITORING PLAN

### Outfall and Groundwater Monitoring (NPDES Permit)

Prior to the initiation of the project, a modified (NPDES) permit was issued July 15, 1985 with an expiration date of April 1, 1990. Five discharges were permitted plus four secondary discharge streams. Flow, pH, Total Suspended Solids, and Oil & Grease were being monitored on a weekly or twice monthly basis for Discharge No. 5 (from the [West] ash pond receiving ash sluice from Unit #1).

Subsequent to the installation and initial operation of the GR-SI system, a Reissued (NPDES) Permit was issued on August 10, 1992, to expire July 1, 1997. Modifications for Discharge No. 5 added the following special conditions:

- 13.a) Notification of Agency on date the GR-SI project begins
- 13.b) The raw residue transport water shall be pH adjusted using carbon dioxide or other chemicals which will not contribute chlorides or sulfates to the waste stream
- 13.c) Groundwater monitoring shall be conducted during the demonstration project and for six months, thereafter
- 13.d) Modeling or dye tracing to identify the West Ash Pond System effluent mixing characteristics with the Illinois River
- 17.a) Chemical-Specific Testing
- 17.b) Biomonitoring
  - 17.b.1) Standard Definitive Acute Toxicity Tests
  - 17.b.2) Testing Frequency
  - 17.b.3) Toxicity Assessment
- 17.c) Benthic and sediment monitoring

Of these special conditions, only 13.a), 13.b) and 13.c) became implemented, since no discharge occurred from the outfall of the West Ash Pond to the Illinois River.

### Air Emissions Monitoring

#### Construction Permit

The construction Permit was granted for the construction of the Gas Reburning-Sorbent Injection system at Hennepin Boiler #1. The special conditions applicable to this construction were:

- 1a) The construction and operation of the Clean Coal Technology (CCT) demonstration equipment does not constitute a modification as defined in



40 CFR 60.14.

- 1b) Since annual emissions of PM and PM<sub>10</sub> will increase minimally, the project does not constitute a major modification for purposes of 40 CFR 52.21.
- 2a) The CCT demonstration project shall be limited to operation to one year, but able to be formally extended by the agency.
- 2b) Emissions from this unit during the demonstration project shall not be considered "representative" for the purposes of PSD or NSPS emission comparisons.
- 2c) Routine restoration to pre-CCT demonstration condition will not subject this unit to the requirements of 40 CFR 52.21 or 40 CFR part 60.
- 3) The emissions limits which currently apply to this unit shall not change as a result of the construction, removal or discontinued use of the CCT demonstration equipment.
- 4a) Within 90 days of full load or 180 days of full startup, the particulate matter concentrations in the effluent stream of Boiler #1 shall be measured by an approved testing service.
- 4b) Prior to carrying out particulate tests, notice shall be given to the Agency's regional office and the Agency's Source Emission Test Specialist.
- 4c) Three copies of the Final Reports shall be submitted to the Agency within 14 days.
- 4d) A copy of the summary of Results, General Information, and Conclusions as contained in the Final Report, shall also be submitted to the Source Emission test Specialist.

Imposition of these Special Conditions in 4a - 4d of the Construction Permit established the requirement to test the emissions after the operation of the unit as fitted with the Gas Reburning-Sorbent Injection system. The Special Conditions of 1a - 3 established an understanding and assurances that the acts of installing, operating and restoring the GR-SI system would not cause reclassification of the unit to a higher level required emission control.

#### Reporting

The original environmental reporting schedule was based on quarterly reports covering multiple sites and possibly multiple phases. Through mutual agreement and approval by DOE,

environmental reports will occur at the completion of each major portion of the demonstration and will include only that portion of the overall project.

The Environmental Monitoring Reporting is revised from a quarterly basis to one where a monitoring report, i.e., Environmental Monitoring Test Series Report (EMTSR) is written at the completion of each major demonstration task. DOE agrees that the EMTSR's would be more comprehensive, meaningful, and save manpower along with associated costs.

#### Modifications and Corrections

During the period of this (Long Term Load Following Operation), the following modifications were made to the monitoring plan:

##### 9-30-91

There is one recommended modification to the proposed monitoring plan now listed in Tables 1 and 2. In Table 2, under the air measurement category, the coal dust parameter has been deleted and an ambient dust parameter added. This ambient dust parameter will be sampled with a Hi-Volume sampler once prior to Phase III and during Long Term Testing at a location upwind and downwind of the sorbent silo. Monitoring the ambient dust at the sorbent silo will more accurately document the potential impact of GR-SI related dust on worker health and safety.

##### 12-31-91

The recommended modifications to the proposed monitoring plan listed in Tables 2 are as follows: Under the supplemental water measurement category, the frequency of monitoring the Illinois River has been changed to reflect monitoring once prior to Phase III testing, and once during long term testing; Under the gaseous emissions category the opacity parameter has been deleted and replaced with particulate data because the combined stack opacity readings at Hennepin do not accurately represent only Unit #1 opacity readings; Also under gaseous emissions category the velocity parameter has been deleted due to the combined stack velocity readings. The combined stack velocity readings do not provide accurate data for conducting ambient air models for Unit #1.

The recommended modifications to the footnotes in Table 2 are listed below.

Footnote #1- Monitoring will occur once prior to GR-SI operation, quarterly until the program is completed, and quarterly through closure and post-closure periods.

Footnote #3- Sampling will be conducted once prior to Phase III, then monthly for the first six months of long term testing.

Footnote #5- Samples will be collected once prior to Phase III, and once during long term testing. Additional testing will be conducted if the N<sub>2</sub>O concentration

exceeds 5 ppm.

Footnote #7- Sampling will be conducted once prior to Phase III. During long term testing, sampling will be conducted monthly for the first three months.

Footnote #8- Sampling will occur once prior to Phase III, and CEM data will be reported during long term testing.

Footnote #9- Deleted.

3/31/92

The recommended modifications to the proposed monitoring plan listed in Table 2 under Supplemental Gaseous Emissions are as follows: Under the frequency of monitoring for NO<sub>x</sub>, SO<sub>x</sub>, CO, CO<sub>2</sub>, O<sub>2</sub>, and HC, Footnote #9 should be changed to read Footnote #8. This was a typographical error.

9/30/92

Tables 1 and 2, incorporating the changes noted above, can be found in Appendix C.

## 6.0 CONCLUSIONS

Extensive environmental monitoring in the areas of gaseous and aqueous discharges, worker health, solid waste characterization, and other areas showed that GR-SI significantly reduced gaseous pollutants and had only minor effects on other areas. Over the long-term GR-SI demonstration, NO<sub>x</sub> and SO<sub>2</sub> were reduced by 67 and 53%, respectively. Emissions of other species including CO, total particulate matter, and PM<sub>10</sub> were unaffected by GR-SI operation. The major aqueous stream which may have been impacted by the GR-SI process, the ash pond discharge, had no flow during the demonstration. However, direct sluice water and groundwater sampling showed acceptable water quality, with some elevated groundwater sulfate levels which existed before the GR-SI demonstration. Compliance analyses of coal showed that all samples had a theoretical SO<sub>2</sub> level below 6.0 lb/MBtu. Characterization of the solid waste, which is a mixture of fly ash and spent sorbent, indicated that it is a nonhazardous material with low levels of metals in the leachate, it results in a modest temperature rise upon addition of water, and it has cementitious properties. Worker health monitoring showed that exposure to noise and ambient dust was generally within applicable standards, with audiometric protection and goggles/dust mask required in specific areas. Overall, the project had minor impacts on the local environment, while significantly reducing acid rain gases.

## **APPENDIX A**

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

PERMITTEE NAME  
ILLINOIS POWER COMPANY

ADDRESS  
500 South 27th Street  
Decatur, IL 62525  
PHONE  
(217) 424-6833

COMMENTS

\* NO discharge in September, 1991.

005  
DIS

005  
SIC

11.0001554  
PERMIT NUMBER

LATITUDE

LONGITUDE

911 019 011  
YEAR MO DAY

TO

911 09 30  
YEAR MO DAY

REPORTING PERIOD FROM

30-Day Daily

PARAMETER	QUANTITY		CONCENTRATION		LIMITS	FREQUENCY OF ANALYSIS	SAMPLE TYPE	
	MINIMUM	MAXIMUM	AVERAGE	MAXIMUM				
50050 Flow *						1/week	enf.	
00400 pH				9.0		1/week	Grab	
00530 TSS			15.0	30.0	mg/l	1/week	24 hour Composite	
00556 Oil & Grease			15.0	20.0	mg/l	2/month	Grab	
REPORTED PERMIT CONDITION								
REPORTED PERMIT CONDITION								
REPORTED PERMIT CONDITION								
REPORTED PERMIT CONDITION								
REPORTED PERMIT CONDITION								
REPORTED PERMIT CONDITION								
REPORTED PERMIT CONDITION								
REPORTED PERMIT CONDITION								
REPORTED PERMIT CONDITION								
REPORTED PERMIT CONDITION								
REPORTED PERMIT CONDITION								
NAME OF PRINCIPAL CALCULATING OFFICER	VICE PRESIDENT		I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief, such information is true, complete, and accurate.					SIGNATURE OF PRINCIPAL CALCULATING OFFICER OR AUTHORIZED AGENT
Connell W.	Vice-President							E.F. McNeil
YEAR	DATE		DATE					
1991	1991		1991					

This Agency is authorized to require this information under Illinois Revised Statutes 1979, Chapter 111 1/2, Section 104.2. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 per violation or a fine up to \$25,000.00 per day of violation and imprisonment.

87-834977

NATIONAL POLLUTANT DISCHARGE ESTIMATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Gennepin Power Plant

Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge in October, 1991.

1.  PERMIT NUMBER  
 2.  DIS.  SIC  
 3.  YEAR  MONTH  DAY  
 4.  YEAR  MONTH  DAY  
 REPORTING PERIOD FROM  YEAR  MONTH  DAY TO  YEAR  MONTH  DAY

PARAMETER	UNIT	30-Day Daily			EMERGENCY OR ANALYSIS	SAMPLING FREQUENCY	SAMPLING METHOD	ANALYSIS METHOD
		AVERAGE	MAXIMUM	MINIMUM				
50050 Flow *	MGD							
00400 pH			6.0		1/week	est.		
00530 TSS			9.0		1/week	Grab		
00556 Oil & Grease		15.0	30.0		1/week	24 hour composite		
		15.0	20.0		2/month	Grab		
I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.								
NAME OF PERSONAL EXECUTIVE OFFICER Council W.							SIGNATURE OF PERSONAL EXECUTIVE OFFICER <i>W. Council</i>	
TITLE OF THE OFFICER Vice-President							OFFICE OR HOME ADDRESS OF OFFICER	

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
 DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
 Decatur, IL 62525  
 (217) 424-6833

Kennepin Power Plant  
 Asb Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge November, 1991.

11	110001554	005	9/1	9/1	9/1	3/10
31	PERMIT NUMBER	DIS	YEAR	MON	DAY	DAY
		SIC	YEAR	MON	DAY	DAY
		LATITUDE	10000	10000	10000	10000
		LONGITUDE				
	REPORTING PERIOD FROM	TO				

PARAMETER	30-Day			Daily			FREQUENCY OF ANALYSIS	SAMPLE TYPE
	AVERAGE	MINIMUM	MAXIMUM	AVERAGE	MINIMUM	MAXIMUM		
50050 Flow *			MGD				1/week	grab
00600 pH		6.0			9.0		1/week	grab
00530 TSS	15.0			15.0	30.0		1/week	24 hour composite
00556 Oil & Grease	15.0			15.0	20.0		2/month	Grab

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.  
 E.F. [Signature]  
 SIGNATURE OF OPERATOR OR SUPERVISOR  
 DATE OF ANALYSIS 11/01/91

PERMITTEE NAME

ILLINOIS POWER COMPANY

ADDRESS

500 South 27th Street  
 Hennepin Power Plant  
 Decatur, IL 62525  
 Ash Lagoon 1 & 3 Discharge

PHONE

(217) 424-6833

COMMENTS

005  
 DTS

0001554  
 PERMIT NUMBER

LATITUDE

LONGITUDE

911 112 011  
 YEAR MO DAY

TO

911 112 311  
 YEAR MO DAY

30-Day Daily

PARAMETER	REPORTED PERMIT CONDITION	30-DAY CONCENTRATION (AS STATED)		LIMITS	FREQUENCY OF ANALYSIS	SAMPLING TYPE
		AVERAGE	MAXIMUM			
50050 FLOW	REPORTED PERMIT CONDITION				1/week	est.
00400 pH	REPORTED PERMIT CONDITION	6.0	9.0		1/week	Grab
00530 TSS	REPORTED PERMIT CONDITION	15.0	30.0	mg/l	1/week	24 hour Composite
00556 Oil & Grease	REPORTED PERMIT CONDITION	15.0	20.0	mg/l	2/month	Grab

NAME OF AUTHORIZED OFFICER: Council W.

TITLE: Vice-President

DATE: 11/23/91

DATE: 11/23/91

SIGNATURE OF AUTHORIZED OFFICER: *E.F. [Signature]*

STATEMENT OF ANALYSIS SUBJECT: [Blank]

This Agency is authorized to require this information under Illinois Revised Statutes, Chapter 107B, Section 107B.2. Disclosure of this information is required. Failure to file or may result in a civil penalty up to \$10,000 per day of violation or a fine up to \$25,000 per day of violation.

827-9091/178



DISCHARGE MONITORING REPORT

PERMITTEE NAME ILLINOIS POWER COMPANY

ADDRESS 500 South 27th Street  
Decatur, IL 62525  
PHONE (217) 424-6833

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge during January, 1992.

PERMIT NO. 1L0001554  
 PERMIT NUMBER  
 STATE OF ILLINOIS  
 PERMIT NO. 005  
 DATE 01/01/92  
 TO 01/31/92  
 YEAR MONTH DAY YEAR MONTH DAY  
 REPORTING PERIOD FROM 01/01/92 TO 01/31/92  
 YEAR MONTH DAY YEAR MONTH DAY

PARAMETER	REPORTED	QUANTITY			LIMITS	CONCENTRATION			FREQUENCY OF ANALYSIS	DATE
		AVERAGE	MAXIMUM	MINIMUM		AVERAGE	MAXIMUM	MINIMUM		
50050 Flow	REPORTED				MGD					
00400 pH	REPORTED								1/week	cont.
00530 TSS	REPORTED			6.0			9.0		1/week	Grat
00556 Oil & Grease	REPORTED			15.0			30.0	15.0	1/week	24 hr Comp.
	REPORTED			15.0			20.0	15.0	2/month	Grat

NAME OF PERSONAL REPRESENTATIVE  
 Connell W.  
 TITLE OF THE OFFICER  
 Vice-President  
 SIGNATURE OF PERSONS EXECUTIVE OR AUTHORIZED AGENT  
 [Signature]  
 DATE 01/31/92

This Agency is authorized to require only information under Illinois Revised Statutes, 1926, Chapter 131 1/2, Section 1 is required. Failure to do so may result in a penalty up to \$10,000 per day of violation or a fine up to \$25,000 per day of violation and location.

NATIONAL POLLUTANT DISCHARGE INFORMATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 624-6833

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge February, 1992.

11. 11.0001554 PERMIT NUMBER  
 005 DIS. 00560  
 9 2 02 01 1 YEAR MONTH DAY TO 9 12 01 2 19 YEAR MONTH DAY

REPORTING PERIOD FROM 9/2/91 TO 12/31/91

PARAMETER	30-Day		Daily		EMERGENCY OP ANALYSIS	FREQ
	CONCENTRATION	UNITS	AVERAGE	MAXIMUM		
50050 Flow						1/week
00400 pH						1/week
00530 TSS			15.0	30.0		1/week
00556 Oil & Grease			15.0	20.0		2/month

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

E.F. Akell  
 SIGNATURE OF PERMITTEE EXECUTIVE OR AUTHORIZED AGENT

This Agency is authorized to require this information under Illinois, Revised Statutes, 1970, Chapter 110 1/2, Section 17. Disclosure of this information is required. Failure to do so may result in a penalty up to \$10,000.00 per day.

DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY  
500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

\* No discharge March, 1992.

COMMENT B

PLANT PERMIT NUMBER IL0001554	005 DIS	SAC	LAUNDRY	CONCENTRATOR
REPORTING PERIOD FROM 9/12/91	YEAR MONTH DAY	TO 01/31/91	YEAR MONTH DAY	

PARAMETER	REPORTED	PERMIT	QUANTITY			CONCENTRATION			FREQ. OF ANALYSIS	EST.
			PERMIT	PLANT	REGULATED	MAXIMUM	AVERAGE	MINIMUM		
50050 FLOW	REPORTED	PERMIT CONCENTRATION	MGD						1/week	est.
00400 pH	REPORTED	PERMIT CONCENTRATION		6.0				9.0	1/week	Grab
00530 TSS	REPORTED	PERMIT CONCENTRATION			15.0			30.0	1/week	24 hr compar.
00556 Oil & Grease	REPORTED	PERMIT CONCENTRATION			15.0			20.0	2/month	Grab

Verify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

E. F. Bell  
SUPERVISOR OF COMPLIANCE SERVICES

This Agency is authorized to require this information under Illinois Revised Statutes 1978, Chapter 113, Section 1002. Disclosure of this information is required. Failure to do so may result in a penalty up to \$10,000.00 per day of violation and imprisonment.

HEMERYN GROUNDWATER

Sample Date	Well #	Water Level	Cond.	pH	DO	Temp	SO <sub>4</sub> <sup>2-</sup> mg/l	IDS mg/l	B mg/l	SO <sub>4</sub> <sup>2-</sup> mg/l	NO <sub>2</sub> <sup>-</sup> mg/l	CL mg/l	NO <sub>3</sub> <sup>-</sup> mg/l	CA mg/l	MV ug/l
02-05-92	W1	446.21	1015	7.3	2.5	12.5	<0.5	700	5.1	95	<0.025	52.0	<0.05	110	130
02-05-92	W2	446.52	1244	8.6	3.3	13.5	<0.5	990	14	450	<0.025	69.2	0.13	160	23
02-05-92	W3	447.98	923	7.2	1.7	13.2	<0.5	600	3.4	480	<0.025	36.2	0.064	100	230
02-05-92	W4	446.72	1346	7.0	4.1	12.9	<0.5	820	5.0	190	<0.025	66.6	<0.05	140	98
02-05-92	W5	446.52	670	7.3	3.3	12.1	<0.5	410	1.7	120	<0.025	27.8	8.2	89	<5
02-05-92	WREP	---	---	---	---	---	<0.5	410	2.0	90	<0.025	27.6	9.0	87	<5

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge April, 1992.

PERMITTEE NAME

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

ADDRESS

PHONE

11. 51	110001554 PERMIT NUMBER	005 DIS	SK	LATITUDE	LONGITUDE	
12	014	011	10	9 12	0 14 310	
YEAR	MO	DAY	TO	YEAR	MO	DAY

REPORTING PERIOD FROM 12/01/91 TO 01/31/92

PARAMETER	PERMIT CONDITION	Quantity			Concentration			Frequency of Analysis	Sample Type
		Minimum	Average	Maximum	Minimum	Average	Maximum		
50050	REPORTED								
Flow *	PERMIT CONDITION			MGD					
00400	REPORTED							1/week	est.
pH	PERMIT CONDITION					9.0		1/week	Grab
00530	REPORTED								
TSS	PERMIT CONDITION				15.0	30.0		1/week	24 hour composite
00556	REPORTED								
Oil & Grease	PERMIT CONDITION				15.0	20.0		2/month	Grab
	REPORTED								
	PERMIT CONDITION								
	REPORTED								
	PERMIT CONDITION								
	REPORTED								
	PERMIT CONDITION								
	REPORTED								
	PERMIT CONDITION								
	REPORTED								
	PERMIT CONDITION								
	REPORTED								
	PERMIT CONDITION								
	REPORTED								
	PERMIT CONDITION								

NAME OF PRINCIPAL RECEIVING OFFICER: Connell W. (10051) MH  
TITLE OF THE OFFICER: Vice-President  
DATE: 1 1 1 1  
YEAR MO DAY

Signature: E.F. O'Neil  
TITLE: OFFICER OR AUTHORIZED AGENT

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1042. Disclosure of this information

PAGE 5 OF 6

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Illenepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge in May, 1992.

11.	11	005	912	015	011	10	912	015	311
SI	PERMIT NUMBER	DIS	YEAR	MO	DAY	TO	YEAR	MO	DAY

REPORTING PERIOD FROM

30-Day Daily

PARAMETER	REPORTED PERMIT CONDITION	QUANTITY (0000)			UNITS	CONCENTRATION			FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM		MINIMUM	AVERAGE	MAXIMUM		
50050 Flow *	REPORTED PERMIT CONDITION				MGD				1/week	est.
00400 pH	REPORTED PERMIT CONDITION					6.0		9.0	1/week	Grab
00530 TSS	REPORTED PERMIT CONDITION						15.0	30.0	1/week	24 hour composite
00556 Oil & Grease	REPORTED PERMIT CONDITION						15.0	20.0	2/month	Grab

I certify that I am familiar with the information contained on this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

*M. J. ...*  
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TITLE OF THE OFFICER  
Vice-President  
DATE

This Agency is authorized to require this information under Illinois Revised Statutes 1979, Chapter 111 1/2, Section 1042. Disclosure of this information

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge, June 1992.

PERMIT NUMBER: IL0001554  
 DIS: 005  
 YEAR: 92, MONTH: 06, DAY: 01  
 TO YEAR: 92, MONTH: 06, DAY: 30

REPORTING PERIOD FROM

30-Day Daily

PARAMETER	QUANTITY			CONCENTRATION			FREQUENCY OF ANALYSIS	SAMPLING TYPE
	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM		
50050 Flow			MGD					
00400 pH				6.0	9.0		1/week	Grab
00530 TSS							1/week	24 hour composite
00556 Oil & Grease				15.0	30.0	mg/l	1/week	
				15.0	20.0	mg/l	2/month	Grab

NAME OF PERMITS/REGULATING AGENCY: Connell W.  
 TITLE OF EMPLOYEE: Vice-President  
 SIGNATURE OF PERMITS REGULATING OFFICER OR AUTHORIZED AGENT: E.F. Abell

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS

DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
 Hennepin Power Plant  
 Decatur, IL 62525  
 Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge, July, 1992.

PERMIT NUMBER  
 IL0001554

DIS 005

SIC

LATITUDE  
 LONGITUDE

REPORTING PERIOD FROM  
 YEAR 912 MONTH 017 DAY 01

REPORTING PERIOD TO  
 YEAR 912 MONTH 017 DAY 311

30-Day Daily

PARAMETER	REPORTING PERIOD FROM	REPORTING PERIOD TO	QUANTITY			UNITS	CONCENTRATION			FREQUENCY OF ANALYSIS	SAMPLE TYPE
			MINIMUM	AVERAGE	MAXIMUM		MINIMUM	AVERAGE	MAXIMUM		
50050	REPORTED										
FLOW *	PERMIT CONDITION					MGD					
00400	REPORTED									1/week	ent.
pH	PERMIT CONDITION									1/week	Grab
00530	REPORTED						6.0		9.0		
TSS	PERMIT CONDITION										
00556	REPORTED							15.0	30.0	1/week	24-hour composite
Oil & Grease	PERMIT CONDITION							15.0	20.0	2/month	Grab
	REPORTED										
	PERMIT CONDITION										
	REPORTED										
	PERMIT CONDITION										
	REPORTED										
	PERMIT CONDITION										

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate

TITLE OF THE OFFICER  
 Vice-President

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  
 [Signature]

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1047. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 per day of violation or a fine up to \$28,000.00 per day of violation and imprisonment.

87451178



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS

DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS: \* No discharge August, 1992.

PERMIT NUMBER: IL0001554  
 PERMIT NUMBER: 005  
 SIC: 4911  
 REPORTING PERIOD FROM: 9/2 018 011 TO 9/2 018 917

PARAMETER	REPORTING PERIOD	FROM	TO	QUANTITY			CONCENTRATION			UNITS	FREQUENCY OF ANALYSIS	SAMPLE TYPE
				MINIMUM	AVERAGE	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM			
50050 Flow *	REPORTED	PERMIT CONDITION										
00400 pH	REPORTED	PERMIT CONDITION					6.0		9.0		1/week	ent.
00530 TSS	REPORTED	PERMIT CONDITION						15.0	30.0		1/week	24 hour composite
00556 Oil & Grease	REPORTED	PERMIT CONDITION						15.0	20.0		2/month	Grab

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

Signature of Principal Executive Officer or authorized agent: [Signature]

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

**ILLINOIS POWER COMPANY**

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

**Hennepin Power Plant**  
Ash Lagoon 1 & 3 Discharge

\* No discharge September, 1992.

**COMMENTS**

005  
005  
912 019 01 10

912 019 01  
YEAR MONTH DAY

IL0001554  
PERMIT NUMBER

REPORTING PERIOD FROM

30-Day Daily

PARAMETER	PERMIT CONDITION	QUANTITY			UNITS	CONCENTRATION			FREQUENCY OF ANALYSIS	ANALYSIS TYPE
		MINIMUM	AVERAGE	MAXIMUM		MINIMUM	AVERAGE	MAXIMUM		
		YEAR MONTH DAY	YEAR MONTH DAY	YEAR MONTH DAY		YEAR MONTH DAY	YEAR MONTH DAY	YEAR MONTH DAY		
50050 FLOW *	REPORTED PERMIT CONDITION				MGD					
00400 PH	REPORTED PERMIT CONDITION					6.0	9.0		1/week	Grab
00530 TSS	REPORTED PERMIT CONDITION					15.0	30.0	mg/l	1/week	24 hour composite
00556 OIL & GREASE	REPORTED PERMIT CONDITION					15.0	20.0	mg/l	2/month	Grab
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									
	REPORTED PERMIT CONDITION									

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

W. [Signature]  
VICE-PRESIDENT

TITLE OF THE OFFICER

NAME OF PRINCIPAL EXECUTIVE OFFICER  
Council W.

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1042. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 per day of violation or a fine up to \$25,000.00 per day of violation and imprisonment.

6/27/92

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

PERMITTEE NAME  
ILLINOIS POWER COMPANY

ADDRESS  
500 South 27th Street  
Decatur, IL 62525

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

No discharge October, 1992

PERMIT NUMBER: IL0001554

PERMIT NUMBER: 005

LATITUDE: [ ] LONGITUDE: [ ]

REPORTING PERIOD FROM: 9/2 110011 TO: 9/2 110311

YEAR: 92 MONTH: 10 DAY: 11

30-Day Daily

PARAMETER	REPORTED PERMIT CONDITION	30-DAY PERIOD			QUANTITY			CONCENTRATION			FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM		
50050 Flow	REPORTED PERMIT CONDITION											
00400 pH	REPORTED PERMIT CONDITION						6.0		9.0		1/week	est.
00530 TSS	REPORTED PERMIT CONDITION							15.0	30.0		1/week	24 hour composite
00556 Oil & Grease	REPORTED PERMIT CONDITION							15.0	20.0		2/month	Grab
	REPORTED PERMIT CONDITION											
	REPORTED PERMIT CONDITION											
	REPORTED PERMIT CONDITION											
	REPORTED PERMIT CONDITION											
	REPORTED PERMIT CONDITION											
	REPORTED PERMIT CONDITION											
	REPORTED PERMIT CONDITION											
	REPORTED PERMIT CONDITION											
I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.											SIGNATURE OF PRINCIPLE EXECUTIVE OFFICER OR AUTHORIZED AGENT	

NAME OF PRINCIPAL EXECUTIVE OFFICER: Connell W. [ ]

TITLE: Vice-President

DATE: [ ] [ ] [ ]

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1042. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 per day of violation or a fine up to \$38,000.00 per day of violation and imprisonment.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS

DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Hennepin Power Plant  
Chemical Metal Cleaning Waste  
Treatment System Effluent

No discharge October, 1992

COMMENTS

PERMIT NUMBER: IL0001554  
 PERMIT TYPE: 005(a)  
 REPORTING PERIOD FROM: 9/2 YEAR TO 10/31 DAY  
 REPORTING PERIOD TO: 9/2 YEAR TO 10/31 DAY  
 LATITUDE: [ ] LONGITUDE: [ ]  
 SIC: [ ]  
 DIS: [ ]

PARAMETER	REPORTING PERIOD FROM	QUANTITY			UNITS	CONCENTRATION			LIMITS	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	MINIMUM		AVERAGE	MAXIMUM	MINIMUM			
50050	REPORTED				MGD					Daily	24 hour Total
Flow	PERMIT CONDITION										
Iron	REPORTED					1.0			mg/l	Daily	24 hour composite
Copper	PERMIT CONDITION					1.0			mg/l	Daily	24 hour composite
	REPORTED										
	PERMIT CONDITION										
	REPORTED										
	PERMIT CONDITION										
	REPORTED										
	PERMIT CONDITION										
	REPORTED										
	PERMIT CONDITION										
	REPORTED										
	PERMIT CONDITION										
	REPORTED										
	PERMIT CONDITION										

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

*E.F. Bell*  
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

NAME OF PRINCIPAL EXECUTIVE OFFICER: Connell W.  
TITLE OF THE OFFICER: Vice-President

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1042. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 per day of violation and imprisonment up to 30 days per day of violation and imprisonment.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge November, 1992.

PERMIT NUMBER: 11. 110001554  
 DIS: 005  
 YEAR: 92, MONTH: 11, DAY: 01  
 YEAR: 92, MONTH: 11, DAY: 31  
 YEAR: 92, MONTH: 10, DAY: 31  
 LATITUDE: [ ] LONGITUDE: [ ]  
 S/C: [ ]

30-Day Daily

PARAMETER	100.00		100.00		100.00		100.00		CONCENTRATION AVERAGE	MAXIMUM	MINIMUM	UNITS	NO. OF ANALYSES	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION							
50050 FLOW	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION				MGD		1/week	est.
00400 pH	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	6.0	9.0				1/week	Grab
00530 TSS	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	15.0	30.0		mg/l		1/week	24 hour composite
00556 Oil & Grease	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	15.0	20.0		mg/l		2/month	Grab
	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION							
	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION							
	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION							
	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION							
	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION	REPORTED	PERMIT CONDITION							

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

NAME OF PRINCIPAL EXECUTIVE OFFICER: Connell W.  
 TITLE: Vice-President  
 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT: [Signature]

This Agency is authorized to require this information under Illinois Revised Statutes 1970, Chapter 111 1/2, Section 1042. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 per day of violation or a fine up to \$25,000.00 per day of violation and imprisonment.

68-872997

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS**  
**DISCHARGE MONITORING REPORT**

PERMITEE NAME: **ILLINOIS POWER COMPANY**

ADDRESS: **500 South 27th Street  
 Decatur, IL 62525**

PHONE: **(217) 424-6833**

Hennepin Power Plant  
 Chemical Metal Cleaning Waste  
 Treatment System Effluent

**COMMENTS**

\* No discharge November, 1992.

IL 11. 11. 0001554  
 ST. PERMIT NUMBER

42 18. 005(a)  
 DIS. SEC.

120 211 223 24 - 74-28

LATITUDE LONGITUDE  
 120 211 223 24 - 74-28

LATITUDE LONGITUDE

REPORTING PERIOD FROM TO  
 YEAR MONTH DAY YEAR MONTH DAY

120 211 223 24 - 74-28

LATITUDE LONGITUDE

PARAMETER	REPORTED PERMIT CONDITIONS	PERMIT CONDITIONS	REPORTED	QUANTITY (1000)			UNITS	CONCENTRATION (1000)			FREQUENCY OF ANALYSIS	SAMPLING PERIOD
				AVERAGE	MINIMUM	MAXIMUM		AVERAGE	MINIMUM	MAXIMUM		
50050 Flow	REPORTED	PERMIT CONDITIONS	REPORTED				MGD					
Iron	REPORTED	PERMIT CONDITIONS	REPORTED				mg/l	1.0			Daily	24 hour Total
Copper	REPORTED	PERMIT CONDITIONS	REPORTED				mg/l	1.0			Daily	24 hour composite
	REPORTED	PERMIT CONDITIONS	REPORTED									
	REPORTED	PERMIT CONDITIONS	REPORTED									
	REPORTED	PERMIT CONDITIONS	REPORTED									
	REPORTED	PERMIT CONDITIONS	REPORTED									
	REPORTED	PERMIT CONDITIONS	REPORTED									
	REPORTED	PERMIT CONDITIONS	REPORTED									

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

S. F. O'Connell  
 OFFICER OR AUTHORIZED AGENT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

PERMITTEE NAME ILLINOIS POWER COMPANY

ADDRESS 500 South 27th Street  
Decatur, IL 62525

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge December, 1992.

11. 1L0001554 PERMIT NUMBER  
005 DIS  
912 112 0 1 YEAR MO DAY  
912 112 3 11 YEAR MO DAY  
LATITUDE LONGITUDE  
REPORTING PERIOD FROM TO

PARAMETER	REPORTING PERIOD FROM	REPORTING PERIOD TO	QUANTITY			CONCENTRATION			FREQ. OF ANALYSIS	SAMPLING TYPE	
			MINIMUM	MAXIMUM	UNITS	AVERAGE	MAXIMUM	UNITS			
50050 Flow *	REPORTED	PERMIT CONDITION									
00400 pH	REPORTED	PERMIT CONDITION			MGD			1/week	est.		
00530 TSS	REPORTED	PERMIT CONDITION	6.0			9.0		1/week	Grab		
00556 Oil & Grease	REPORTED	PERMIT CONDITION				15.0	30.0	1/week	24 hour composite		
	REPORTED	PERMIT CONDITION				15.0	20.0	2/month	Grab		
	REPORTED	PERMIT CONDITION									
	REPORTED	PERMIT CONDITION									
	REPORTED	PERMIT CONDITION									
	REPORTED	PERMIT CONDITION									
	REPORTED	PERMIT CONDITION									
	REPORTED	PERMIT CONDITION									
			I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.							SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	
NAME OF PRINCIPAL EXECUTIVE OFFICER			TITLE OF THE OFFICER			DATE					
Connell W.			Vice-President						E.F. O'Neil		

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS

DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Hennepin Power Plant  
Chemical Metal Cleaning Waste  
Treatment System Effluent

COMMENTS

\* See Non Compliance Report Attached.

11.	IL0001554
12.	PERMIT NUMBER

005(a)	SC
912	112011
YEAR	MO DAY

LAITUDE	LONGITUDE
912	112011
YEAR	MO DAY

REPORTING PERIOD FROM

PARAMETER	MINIMUM		AVERAGE		MAXIMUM		CONCENTRATION			FREQUENCY OF ANALYSIS		SAMPLE TYPE
	(130.02)	(130.01)	(100.02)	(100.01)	(100.03)	(100.04)	AVERAGE	MINIMUM	MAXIMUM	UNITS	(110.01)	
50050	REPORTED	PERMIT CONDITION	.108	.108	.108	MGD	0					
Iron	REPORTED	PERMIT CONDITION	.25	.855	1.46	mg/l	*					24 hour Total
Copper	REPORTED	PERMIT CONDITION	.12	.31	1.0	mg/l	0					24 hour composite
	REPORTED	PERMIT CONDITION			1.0	mg/l						24 hour composite
	NAME OF PRINCIPAL INCLUDING UTILITY			NAME OF THE OFFICER			DATE			SIGNATURE OF PRINCIPAL INCLUDING UTILITY OR AUTHORIZED AGENT		
Council	H.			Vice-President			1			E.F. [Signature]		



HENNEPIN GROUNDWATER

Sample Date	Well #	Water Level	Cond.	pH	DO	Temp	SO <sub>3</sub> <sup>2-</sup> mg/l	TDS mg/l	B mg/l	SO <sub>4</sub> <sup>2-</sup> mg/l	NO <sub>2</sub> <sup>-</sup> mg/l	CL mg/l	NO <sub>3</sub> <sup>-</sup> mg/l	CA mg/l	MN ug/l
11-17-92	W1	447.97	1014	7.4	1.8	12.9	< 0.5	738	6.4	280	< 0.025	53.8	< 0.05	98	100
11-17-92	W2	448.23	1061	8.9	4.0	12.6	< 0.5	824	12.5	402	< 0.025	81.3	0.10	108	17
11-17-92	W3	448.40	950	7.4	2.6	12.5	< 0.5	663	4.4	241	< 0.025	39.8	< 0.05	87	460
11-17-92	W4	448.36	1126	7.3	2.8	12.5	0.6	867	7.5	395	< 0.025	60.0	< 0.05	110	63
11-17-92	W5	444.99	640	7.9	3.2	11.1	< 0.5	418	1.8	73	< 0.025	26.1	8.4	77	< 5
11-17-92	W3REP	---	---	---	---	---	< 0.5	696	4.7	239	< 0.025	43.1	< 0.05	87	540

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

\* No discharge; January, 1993.

COMMENTS

005  
93 01 01  
YEAR MO DAY

110001554  
PERMIT NUMBER

93 01 31  
YEAR MO DAY

REPORTING PERIOD FROM

PARAMETER	1993		1994		1995		1996		1997		1998		1999		2000		FREQ. OF ANALYSIS	SAMPLING TIME
	MINIMUM	AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS		
50050 Flow *				MGD													1/week	etc.
00400 pH			6.0														1/week	Grab
00530 TSS																	1/week	24 hour composite
00556 Oil & Grease																	2/month	Grab

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

Connell W.  
Vice-President

*E. F. O'Neil*  
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS

DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

PERMIT NAME

ADDRESS

PHONE

11.

SI

1L0001554  
PERMIT NUMBER

005  
DIS

SIC

LATITUDE  
LONGITUDE

93 01 20 1  
YEAR MO DAY

93 01 28  
YEAR MO DAY

REPORTING PERIOD FROM

TO

COMMENTS

\* No discharge February, 1993.

PARAMETER	REPORTING PERIOD FROM	30-Day			UNITS	MAXIMUM	MINIMUM	AVERAGE	CONCENTRATION	DAILY	FREQ. OF ANALYSIS	SAMPLING
		MINIMUM	AVERAGE	MAXIMUM								
50050	REPORTED											
FLOW	PERMIT CONDITION											
00400	REPORTED										1/week	ent.
pH	PERMIT CONDITION											
00530	REPORTED				6.0				9.0		1/week	Grab
TSS	PERMIT CONDITION											
00556	REPORTED						15.0		30.0		1/week	24 hour composite
Oil & Grease	PERMIT CONDITION											
	REPORTED						15.0		20.0		2/month	Grab
	PERMIT CONDITION											
	REPORTED											
	PERMIT CONDITION											
	REPORTED											
	PERMIT CONDITION											
	REPORTED											
	PERMIT CONDITION											

Signature of Principal Executive Officer: *E. F. Bell*

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1042. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000.00 per day of violation or a fine up to \$28,000.00 per day of violation and imprisonment.

67832907

## HENNEPIN GROUNDWATER

Sample Date	Well #	Water Level	Cond.	pH	DO	Temp	SO <sub>3</sub> mg/L	TDS mg/L	B mg/L	SO <sub>4</sub> mg/L	NO <sub>2</sub> -N mg/L	CL mg/L	NO <sub>3</sub> -N mg/L	CA mg/L	MN ug/L
02-02-93	W1	449.51	1178	7.1	1.6	12.9	< 0.5	609	4.6	230	< 0.025	43.2	< 0.05	87	140
02-02-93	W2	449.61	1311	7.1	3.2	12.1	< 0.5	1040	12.2	560	< 0.025	87.4	< 0.05	88	26
02-02-93	W3	450.23	937	7.1	3.2	12.1	< 0.5	639	4.8	250	< 0.025	39.5	< 0.05	170	230
02-02-93	W4	449.99	1178	7.1	1.6	12.9	< 0.5	868	7.4	400	< 0.025	60.2	< 0.05	96	92
02-02-93	W5	449.71	665	7.0	3.8	11.5	< 0.5	395	1.6	76	< 0.025	24.8	8.0	78	< 5
02-02-93	W3REP	---	---	---	---	---	< 0.5	610	5.1	230	< 0.025	45.3	< 0.05	89	130

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

PERMITTEE NAME  
ILLINOIS POWER COMPANY

ADDRESS  
500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge March, 1993.

11. 51	IL0001554 PERMIT NUMBER	005 DIS	31C
93 YEAR	01 MO	01 DAY	70
93 YEAR	01 MO	31 DAY	70

REPORTING PERIOD FROM

30-Day Daily

PARAMETER	REPORTED PERMIT CONDITION	QUANTITY			UNITS	CONCENTRATION			FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM		MINIMUM	AVERAGE	MAXIMUM		
50050 FLOW	*				MGD				1/week	EST.
00400 pH						6.0		9.0	1/week	Grab
00530 TSS							15.0	30.0	1/week	24 hour composite
00556 Oil & Grease							15.0	20.0	2/month	Grab

NAME OF PRINCIPAL EXECUTIVE OFFICER Connell W.	TITLE Vice-President	DATE YEAR MO DAY	1 1 1
I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.			SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT E.F. O'Neil

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

\* No discharge April, 1993

COMMENTS

PERMIT NUMBER: 1L0001554  
 PERMIT NUMBER: 005  
 SIC: [ ]  
 REPORTING PERIOD FROM: 9/13 014 011 TO: 9/13 014 310  
1993 01 23 12 30 1993 01 23 12 30

30-Day Daily

PARAMETER	REPORTING PERIOD FROM	QUANTITY			UNITS	CONCENTRATION			FREQUENCY OF ANALYSIS	BATTLE TYPE
		AVERAGE	MINIMUM	MAXIMUM		AVERAGE	MINIMUM	MAXIMUM		
50050 FLOW *	REPORTED				MGD					
	PERMIT CONDITION									est.
00400 pH	REPORTED					6.0		9.0	1/week	Grab
	PERMIT CONDITION									
00530 TSS	REPORTED					15.0		30.0	1/week	24 hour composite
	PERMIT CONDITION									
00556 Oil & Grease	REPORTED					15.0		20.0	2/month	Grab
	PERMIT CONDITION									
	REPORTED									
	PERMIT CONDITION									
	REPORTED									
	PERMIT CONDITION									
	REPORTED									
	PERMIT CONDITION									
NAME OF PRINCIPAL INCLUDING OFFICER: Connel M.										
TITLE OF THE OFFICER: Vice-President										
DATE: [ ] [ ] [ ]										
SIGNATURE OF PRINCIPAL INCLUDING OFFICER: [Signature]										

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS

DISCHARGE MONITORING REPORT

PERMITTEE NAME  
ILLINOIS POWER COMPANY

ADDRESS  
500 South 27th Street  
Decatur, IL 62525  
PHONE  
(217) 424-6833

COMMENTS  
Hennepin Power Plant  
Chemical Metal Cleaning Waste  
Treatment System Effluent

\* No discharge April, 1993.

11.	11.0001554	005 (a)	LATITUDE	
51.	PERMIT NUMBER	DIS	LONGITUDE	
		913	014	310
		YEAR	MO	DAY
		913	014	310
		YEAR	MO	DAY

REPORTING PERIOD FROM

913	014	01
YEAR	MO	DAY

913	014	310
YEAR	MO	DAY

TO

PARAMETER	REPORTED PERMIT CONDITION	QUANTITY (BASED ON)			UNITS	CONCENTRATION (BASED ON)			FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM		MINIMUM	AVERAGE	MAXIMUM		
50050 * Flow	REPORTED PERMIT CONDITION				MGD				Daily	24 hour Total
Iron	REPORTED PERMIT CONDITION				mg/l	1.0			Daily	24 hour composite
Copper	REPORTED PERMIT CONDITION				mg/l	1.0			Daily	24 hour composite
I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.										
NAME OF PRINCIPAL EXECUTIVE OFFICER Couneil W.										SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER AUTHORIZED AGENT W. Couneil

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1042. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$10,000 (M) per

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS

DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Hennepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge, May, 1993.

11. ST	110001554 PERMIT NUMBER	005 ONS	SIC	LATITUDE	LONGITUDE
913	015	01	10	913	015
YEAR	MO	DAY	TO	YEAR	MO
REPORTING PERIOD FROM		REPORTING PERIOD TO			

PARAMETER	30-Day			30-Day			FREQUENCY OF ANALYSIS	SAMPLE TYPE
	MINIMUM	AVERAGE	MAXIMUM	MINIMUM	AVERAGE	MAXIMUM		
50050 Flow *							1/week	est.
00400 pH			6.0			9.0	1/week	Grab
00530 TSS				15.0		30.0	1/week	24 hour composite
00556 Oil & Grease				15.0		20.0	2/month	Grab
REPORTED								
PERMIT CONDITION								
REPORTED								
PERMIT CONDITION								
REPORTED								
PERMIT CONDITION								
REPORTED								
PERMIT CONDITION								
REPORTED								
PERMIT CONDITION								
REPORTED								
PERMIT CONDITION								
NAME OF PRINCIPAL REGULATORY OFFICER	V. W.			M. J.			M. J.	
NAME OF PRINCIPAL REGULATORY OFFICER	Vice-President			DATE			DATE	
	YEAR MO DAY			YEAR MO DAY			YEAR MO DAY	
I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.								
							SIGNATURE OF PRINCIPAL REGULATORY OFFICER OR AUTHORIZED AGENT	

11/179

This Agency is authorized to require this information under Illinois Revised Statutes 1979, Chapter 113 1/2, Section 1042. Disclosure of this information to any other person may result in a civil penalty under 113 1/2-1042.



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS

DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

Hennepin Power Plant  
Chemical Metal Cleaning Waste  
Treatment System Effluent

COMMENTS

\* No discharge, May, 1993.

PARAMETER NAME

ADDRESS

PHONE

11.

IL0001554  
PERMIT NUMBER

005 (a)  
DIS

9 3 0 5 0 1  
YEAR MONTH DAY

LATITUDE

93 0 5 3 1  
YEAR MONTH DAY

LONGITUDE

REPORTING PERIOD FROM

TO

PARAMETER	3000000 1000000		1000000 1000000		1000000 1000000		1000000 1000000		FREQUENCY OF ANALYSIS	SAMPLE TYPE
	MINIMUM	AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS		
50050 * Flow	REPORTED PERMIT CONDITION		MGD						Daily	24 hour Total
Iron	REPORTED PERMIT CONDITION				1.0		mg/l		Daily	24 hour composite
Copper	REPORTED PERMIT CONDITION				1.0		mg/l		Daily	24 hour composite

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

*M. J. ...*  
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

NAME OF THE OFFICER  
Vice-President  
TITLE

DATE  
YEAR MONTH DAY

This Agency is authorized to require this information under Illinois Revised Statutes 1979, Chapter 111 1/2, Section 1042. Disclosure of this information is required for ...

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

ILLINOIS POWER COMPANY

500 South 27th Street  
Decatur, IL 62525  
(217) 424-6833

Illinepin Power Plant  
Ash Lagoon 1 & 3 Discharge

COMMENTS

\* No discharge June, 1993

PERMITTEE NAME: ILLINOIS POWER COMPANY

ADDRESS: 500 South 27th Street, Decatur, IL 62525, (217) 424-6833

PHONE: (217) 424-6833

PERMIT NUMBER: IL0001554

REPORTING PERIOD FROM: 9/13/91 TO 9/13/91

3-DAY QUANTITY: AVERAGE, MINIMUM, MAXIMUM

30-DAY CONCENTRATION: AVERAGE, MINIMUM, MAXIMUM

QUANTITY: AVERAGE, MINIMUM, MAXIMUM

CONCENTRATION: AVERAGE, MINIMUM, MAXIMUM

UNITS: MGD, mg/l

REPORTING PERIOD: FROM 9/13/91 TO 9/13/91

3-DAY QUANTITY: AVERAGE, MINIMUM, MAXIMUM

30-DAY CONCENTRATION: AVERAGE, MINIMUM, MAXIMUM

QUANTITY: AVERAGE, MINIMUM, MAXIMUM

CONCENTRATION: AVERAGE, MINIMUM, MAXIMUM

UNITS: MGD, mg/l

PARAMETER	REPORTING PERIOD	3-DAY QUANTITY			UNITS	30-DAY CONCENTRATION			UNITS	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MINIMUM	MAXIMUM		AVERAGE	MINIMUM	MAXIMUM			
50050 Flow	* REPORTED PERMIT CONDITION				MGD					1/week	est.
00400 pH	REPORTED PERMIT CONDITION					6.0		9.0		1/week	Grab
00530 TSS	REPORTED PERMIT CONDITION						15.0	30.0	mg/l	1/week	24 hour composite
00556 Oil & Grease	REPORTED PERMIT CONDITION						15.0	20.0	mg/l	2/month	Grab

Signature: E.F. [Signature]  
TITLE: Vice-President  
DATE: 9/13/91

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM COMMENTS  
DISCHARGE MONITORING REPORT

PERMITTEE NAME: ILLINOIS POWER COMPANY

ADDRESS: 500 South 27th Street  
Decatur, IL 62525  
PHONE: (217) 424-6833

Comments: Hennepin Power Plant  
Chemical Metal Cleaning Waste  
Treatment System Effluent

\* No discharge June 1993.

11. 11.0001554 SI PERMIT NUMBER	005 (a) DIS. SEC.	LATITUDE	LONGITUDE
------------------------------------	----------------------	----------	-----------

9 13	0 16	0 11
YEAR	MO	DAY

9 13	0 16	3 10
YEAR	MO	DAY

REPORTING PERIOD FROM TO

PARAMETER	QUANTITY			UNITS	CONCENTRATION			UNITS	FREQUENCY OF ANALYSIS	SAMPLING
	MINIMUM	AVERAGE	MAXIMUM		MINIMUM	AVERAGE	MAXIMUM			
50050 * Flow	REPORTED			MGD					Daily	24 hour Total
Iron	PERMIT CONDITION						1.0	mg/l	Daily	24 hour composite
	REPORTED									
Copper	PERMIT CONDITION						1.0	mg/l	Daily	24 hour composite
	REPORTED									
	REPORTED									
	PERMIT CONDITION									
	REPORTED									
	PERMIT CONDITION									
	REPORTED									
	PERMIT CONDITION									
	REPORTED									
	PERMIT CONDITION									
NAME OF PRINCIPAL RECEIVING UTILITY: Connell W. MI										
NAME OF THE OFFICER: Vice-President								DATE:		SIGNATURE OF PRINCIPAL RECEIVING UTILITY OFFICER OR AUTHORIZED AGENT: E.F. O'Connell

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

This Agency is authorized to require this information under Illinois Revised Statutes, 1970, Chapter 111 1/2, Section 1002. Disclosure of this information is required failure to do so may result in a civil penalty.

HENNEPIN GROUNDWATER

Sample Date	Well #	Water Level	Cond.	pH	DO	Temp	SO <sub>3</sub> mg/L	TDS mg/L	B mg/L	SO <sub>4</sub> mg/L	NO <sub>2</sub> -N mg/L	CL mg/L	NO <sub>3</sub> -N mg/L	CA mg/L	MN ug/L
05-18-93	W1	448.23	1082	7.0	1.5	14.0	< 0.5	720	5.6	270	< 0.025	52.4	< 0.05	94	140
05-18-93	W2	448.18	1294	8.6	3.6	15.1	< 0.5	920	11.4	420	< 0.025	77.2	1.0	130	25
05-18-93	W3	449.00	1040	7.2	< 1.0	14.2	< 0.5	690	4.6	260	< 0.025	42.0	< 0.05	91	270
05-18-93	W4	448.84	1221	7.2	3.7	14.4	< 0.5	850	7.7	430	< 0.025	69.6	< 0.05	110	120
05-18-93	W5	448.53	739	7.3	3.1	11.6	< 0.5	450	1.8	130	< 0.025	38.0	6.1	81	< 5.0
05-18-93	W2REP	---	---	---	---	---	< 0.5	910	11.6	470	< 0.025	76.6	1.2	120	27

HENKELBY GROUNDWATER

Sample Date	Well #	Water Level	Elev.	pH	DO	Temp	SO <sub>4</sub>	NO <sub>3</sub>	NO <sub>2</sub> -N	Cl	SO <sub>4</sub> -N	CA	MH		
		ft	ft		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
08-17-93	W1	448.22	114.4	7.4	1.1	14.2	< 0.5	790	5.8	500	< 0.025	56.6	< 0.05	92	130
08-17-93	W2	448.27	123.6	8.9	< 1.0	15.3	< 0.5	920	9.7	490	< 0.025	70.2	0.95	92	16
08-17-93	W3	448.78	119.6	7.3	1.2	15.5	< 0.5	850	4.9	320	< 0.025	52.8	< 0.05	78	870
08-17-93	W4	448.71	125.9	7.6	1.1	14.2	< 0.5	900	7.6	630	< 0.025	71.0	< 0.05	94	130
08-17-93	W5	468.47	95.0	7.3	3.0	11.8	< 0.5	610	2.5	240	< 0.025	56.2	3.8	83	< 5.0
08-17-93	MSREP	---	---	---	---	---	< 0.5	611	2.3	230	< 0.025	56.4	4.1	94	< 5.0

ILLINOIS POWER COMPANY  
 HENNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 090191 TO 093091  
 FOR THE VENDOR : COAL TO BUNKERS

SAMPLE DATE	TONS TO BUNKERS	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	FOUND S02 PER MBTU	S02 LIMIT EXCEEDED
09/01/91	1,222.00	11.73	11.09	2.93	10,972	12,430	14,216	14,496	5.21	
09/02/91	1,507.00	13.07	10.44	2.90	10,855	12,487	14,191	14,461	5.21	
09/03/91	1,675.00	13.64	10.93	3.02	10,748	12,446	14,249	14,538	5.48	
09/04/91	2,579.00	13.93	10.12	2.88	10,815	12,566	14,241	14,508	5.19	
09/06/91	1,290.00	13.70	10.45	2.91	10,788	12,500	14,222	14,496	5.26	
09/07/91	275.00	13.89	10.74	2.95	10,709	12,436	14,207	14,490	5.37	
09/09/91	876.00	14.08	10.01	2.81	10,761	12,525	14,177	14,437	5.09	
09/10/91	2,774.00	12.99	10.34	3.03	10,934	12,566	14,260	14,437	5.41	
09/11/91	435.00	13.30	10.15	2.86	10,867	12,534	14,196	14,535	5.13	
09/12/91	2,985.00	13.80	10.26	2.90	10,809	12,540	14,234	14,505	5.22	
09/13/91	2,437.00	14.38	10.46	2.82	10,694	12,491	14,229	14,502	5.14	
09/14/91	1,583.00	15.87	10.60	2.70	10,462	12,437	14,230	14,507	5.04	
09/15/91	1,577.00	12.83	10.97	2.93	10,857	12,456	14,249	14,532	5.26	
09/16/91	1,719.00	13.05	11.22	2.96	10,792	12,413	14,251	14,540	5.35	
09/17/91	1,777.00	14.58	11.16	2.91	10,572	12,376	14,235	14,526	5.36	
09/18/91	1,514.00	10.78	12.14	3.17	10,979	12,305	14,244	14,550	5.62	
09/19/91	1,814.00	12.31	11.16	3.24	10,920	12,440	14,252	14,548	5.79	
09/20/91	1,614.00	11.18	11.71	3.73	10,991	12,374	14,253	14,577	6.62	
09/21/91	1,156.00	14.58	10.27	2.85	10,712	12,542	14,255	14,527	5.19	
09/23/91	2,145.00	13.87	10.11	2.84	10,827	12,571	14,243	14,510	5.12	
09/24/91	1,405.00	10.51	11.70	3.23	11,136	12,444	14,315	14,518	5.66	
09/25/91	1,510.00	13.69	10.17	2.78	10,901	12,630	14,316	14,584	4.97	
09/26/91	1,453.00	10.68	10.98	3.26	11,138	12,469	14,217	14,504	5.71	
09/27/91	3,102.00	12.67	10.40	2.78	10,830	12,401	14,078	14,336	5.01	
09/28/91	1,732.00	12.44	10.16	2.88	10,942	12,497	14,137	14,399	5.14	
09/29/91	1,757.00	12.62	10.42	2.81	10,911	12,487	14,178	14,442	5.02	
09/30/91	1,241.00	12.15	10.75	2.89	10,957	12,472	14,210	14,484	5.14	

WEIGHTED AVERAGES FOR THE PERIOD 090191 TO 093091

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	LBS. S02 PER MBTU
45,233.00	13.07	10.67	2.96	10,846	12,478	14,224	14,502	5.31

... END OF REPORT RUN ON 10/04/91 AT 15.05.25

ILLINOIS POWER COMPANY  
 HENNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 100191 TO 103191  
 FOR THE VENDOR : COAL TO BUNKERS

SAMPLE DATE	TONS TO BUNKERS	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL BTU/LB	POUNDS SO <sub>2</sub> PER MBTU	SO <sub>2</sub> LIMIT EXCEEDED
10/01/91	1,538.00	12.78	10.73	2.83	10,774	12,352	14,084	14,353	5.12	
10/02/91	1,304.00	14.67	10.78	2.85	10,545	12,359	14,145	14,424	5.23	
10/03/91	1,268.00	14.51	10.77	2.93	10,551	12,343	14,123	14,401	5.42	
10/05/91	.00	.00	.00	.00	0	0	0	0	.00	
10/06/91	268.00	11.43	11.79	2.92	10,938	12,349	14,249	14,538	5.21	
10/07/91	1,193.00	13.73	11.17	2.97	10,719	12,425	14,272	14,585	5.40	
10/08/91	516.00	14.41	9.84	2.69	10,300	12,510	14,255	14,514	4.86	
10/09/91	128.00	13.51	10.49	2.83	10,818	12,508	14,235	14,506	5.10	
10/10/91	.00	.00	.00	.00	0	0	0	0	.00	
10/11/91	.00	.00	.00	.00	0	0	0	0	.00	
10/12/91	1,322.00	13.30	10.68	2.87	10,845	12,509	14,266	14,542	5.16	
10/13/91	1,739.00	14.46	10.57	2.95	10,537	12,435	14,189	14,469	5.43	
10/14/91	1,451.00	11.59	10.65	2.93	11,034	12,496	14,210	14,479	5.13	
10/15/91	1,889.00	12.03	10.57	2.99	11,009	12,514	14,223	14,493	5.12	
10/16/91	.00	.00	.00	.00	0	0	0	0	.00	
10/18/91	713.00	14.54	10.21	2.81	10,672	12,468	14,182	14,450	5.13	
10/19/91	1,528.00	13.79	10.24	2.86	10,763	12,484	14,167	14,434	5.18	
10/20/91	2,342.00	13.42	10.34	2.77	10,828	12,566	14,202	14,467	4.99	
10/21/91	1,591.00	13.23	10.47	2.91	10,805	12,452	14,180	14,431	5.25	
10/22/91	1,517.00	13.14	10.37	2.85	10,867	12,511	14,206	14,473	5.12	
10/23/91	1,439.00	12.89	10.91	2.84	10,950	12,426	14,201	14,478	5.14	
10/24/91	2,100.00	14.38	10.09	2.77	10,723	12,524	14,197	14,430	5.03	
10/25/91	709.00	15.01	10.49	2.79	10,566	12,462	14,224	14,477	5.13	
10/26/91	634.00	15.01	10.79	2.91	10,527	12,396	14,187	14,467	5.23	
10/27/91	809.00	15.93	10.22	2.71	10,495	12,484	14,210	14,480	5.04	
10/28/91	1,567.00	15.08	10.67	2.74	10,542	12,414	14,190	14,473	5.11	
10/29/91	1,321.00	12.44	10.45	2.83	10,957	12,513	14,209	14,475	5.04	
10/30/91	1,620.00	13.76	10.16	2.89	10,753	12,469	14,135	14,398	5.24	
10/31/91	1,541.00	14.10	10.42	2.89	10,712	12,470	14,192	14,464	5.23	

WEIGHTED AVERAGES FOR THE PERIOD 100191 TO 103191

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL BTU/LB	SO <sub>2</sub> LBS. PER MBTU
52,451.00	13.66	10.52	2.85	10,750	12,460	14,190	14,461	5.17

... END OF REPORT RUN ON 12/05/91 AT 09.59.31

ILLINOIS POWER COMPANY  
HENNEPIN POWER STATION  
COAL ANALYSIS REPORT FOR THE PERIOD 110191 TO 113091  
FOR THE VENDOR : COAL TO BUNKERS

SAMPLE DATE	TONS TO BUNKERS	Z MOISTURE (AR)	Z ASH (AR)	Z SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	RTU/LB (H.A.F.)	UNIT COAL BTU/LB	POUNDS SO2 PER MBTU	SO2 LIMIT EXCEEDED
11/01/91	3,159.00	14.97	10.59	2.83	10,558	12,417	14,185	14,462	5.22	
11/02/91	1,622.00	11.90	10.26	2.89	11,079	12,575	14,233	14,495	5.09	
11/03/91	3,334.00	15.46	10.41	2.86	10,508	12,428	14,174	14,450	5.31	
11/04/91	2,540.00	12.49	10.91	2.84	10,855	12,414	14,184	14,462	5.26	
11/05/91	1,415.00	14.03	10.54	2.84	10,727	12,477	14,219	14,495	5.16	
11/06/91	2,547.00	14.31	10.56	2.93	10,644	12,422	14,169	14,446	5.37	
11/07/91	2,392.00	13.96	10.65	2.89	10,727	12,459	14,217	14,495	5.25	
11/08/91	2,215.00	14.97	10.23	2.79	10,630	12,510	14,221	14,491	5.12	
11/09/91	1,727.00	14.48	10.37	2.95	10,690	12,500	14,223	14,493	5.17	
11/10/91	2,928.00	13.82	10.63	2.89	10,735	12,457	14,209	14,465	5.25	
11/12/91	3,214.00	15.22	10.74	2.85	10,464	12,342	14,132	14,410	5.27	
11/13/91	2,634.00	13.91	10.35	2.88	10,778	12,520	14,231	14,508	5.39	
11/14/91	1,457.00	13.49	9.93	3.00	10,909	12,610	14,245	14,513	5.36	
11/15/91	2,060.00	13.42	10.51	3.11	10,869	12,554	14,209	14,574	5.53	
11/16/91	1,338.00	12.49	11.08	3.12	10,887	12,440	14,243	14,535	5.57	
11/17/91	1,953.00	16.06	9.81	2.88	10,524	12,490	14,243	14,535	5.34	
11/18/91	1,217.00	15.15	10.76	2.87	10,524	12,536	14,195	14,464	5.27	
11/19/91	2,086.00	15.01	10.89	2.90	10,605	12,471	14,283	14,508	5.33	
11/20/91	1,406.00	13.93	10.91	2.94	10,729	12,466	14,276	14,562	5.34	
11/21/91	2,849.00	14.49	10.65	2.94	10,698	12,511	14,292	14,575	5.35	
11/22/91	412.00	14.49	10.70	2.98	10,692	12,503	14,300	14,566	5.44	
11/23/91	390.00	14.65	11.67	2.96	10,694	12,470	14,300	14,525	5.42	
11/24/91	1,443.00	14.79	10.55	2.86	10,722	12,582	14,324	14,602	5.30	
11/25/91	3,209.00	13.45	11.13	3.10	10,735	12,438	14,273	14,569	5.52	
11/26/91	1,849.00	12.42	10.08	3.09	11,040	12,496	14,245	14,516	5.46	
11/27/91	1,515.00	12.13	10.36	2.95	11,054	12,580	14,261	14,531	5.22	
11/28/91	1,510.00	13.28	10.88	2.91	10,822	12,487	14,254	14,535	5.24	
11/29/91	1,645.00	11.69	11.82	3.29	10,982	12,436	14,208	14,501	5.84	
11/30/91	1,827.00	11.63	10.92	3.12	11,010	12,459	14,216	14,499	5.53	

WEIGHTED AVERAGES FOR THE PERIOD 110191 TO 113091

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL BTU/LB	LBS. SO2 PER MBTU
58,331.00	13.98	10.60	2.94	10,733	12,476	14,230	14,509	5.34

... END OF REPORT RUN ON 12/03/91 AT 09.11.23



LLI... POL UNIT  
 HENNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 12/31/91 TO 12/31/91  
 FOR THE VENDOR : COAL TO BUNKERS

SAMPLE DATE	TONS TO BUNKERS	MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL BTU/LB	POUNDS SO2 PER MBTU	SO2 LIMIT EXCEEDED
12/01/91	1,669.00	15.74	16.65	2.95	10,433	12,392	14,176	14,458	5.35	
12/02/91	1,695.00	11.43	16.59	2.93	11,105	12,537	14,239	14,512	5.33	
12/03/91	2,077.00	10.99	16.85	3.19	11,187	12,554	14,259	14,539	5.37	
12/04/91	1,510.00	10.99	11.12	3.11	11,117	12,490	14,273	14,559	5.46	
12/05/91	3,251.00	14.04	10.21	2.92	10,787	12,549	14,240	14,511	5.28	
12/06/91	1,697.00	13.85	10.12	2.88	10,848	12,591	14,267	14,536	5.18	
12/08/91	1,535.00	12.81	10.40	2.98	10,936	12,542	14,240	14,514	5.31	
12/09/91	1,679.00	14.15	10.74	2.84	10,604	12,351	14,117	14,393	5.22	
12/10/91	1,627.00	13.33	11.64	2.86	10,582	12,211	14,107	14,397	5.27	
12/11/91	2,036.00	12.32	11.19	2.89	10,479	12,375	14,259	14,551	5.21	
12/12/91	1,624.00	12.20	11.32	2.90	10,893	12,418	14,259	14,545	5.19	
12/13/91	2,343.00	14.45	11.63	2.96	10,620	12,414	14,253	14,543	5.44	
12/14/91	1,472.00	15.69	11.39	2.84	10,406	12,341	14,250	14,546	5.30	
12/15/91	1,472.00	14.89	10.55	2.87	10,512	12,468	14,254	14,514	5.23	
12/16/91	1,361.00	11.16	16.92	2.96	11,205	12,612	14,217	14,474	5.16	
12/17/91	1,379.00	14.16	9.76	2.77	10,799	12,579	14,190	14,454	5.00	
12/18/91	2,735.00	12.36	9.50	2.80	11,166	12,740	14,290	14,538	4.89	
12/19/91	1,628.00	12.52	19.50	2.94	11,906	12,579	14,296	14,520	5.21	
12/20/91	1,511.00	15.14	11.49	2.79	10,514	12,391	14,255	14,542	5.18	
12/21/91	1,602.00	13.11	11.88	2.85	10,372	12,218	14,206	14,511	5.35	
12/22/91	1,541.00	14.80	11.95	2.83	10,521	12,347	14,189	14,475	5.25	
12/23/91	1,540.00	14.11	11.16	2.81	10,635	12,381	14,239	14,516	5.16	
12/24/91	1,487.00	19.80	12.91	2.60	10,088	12,239	14,124	14,405	4.89	
12/25/91	1,428.00	10.89	11.52	2.99	11,120	12,437	14,277	14,564	5.24	
12/26/91	2,023.00	15.91	10.13	2.64	10,312	12,495	14,203	14,450	4.90	
12/27/91	1,599.00	15.58	10.75	2.85	10,323	12,493	14,202	14,567	5.27	
12/28/91	2,300.00	16.91	9.46	2.92	11,372	12,264	14,298	14,550	5.02	
12/29/91	1,055.00	11.33	9.72	2.92	11,258	12,692	14,250	14,512	5.06	
12/30/91	1,213.00	14.55	10.53	2.79	10,683	12,502	14,399	14,533	5.06	
12/31/91	1,184.00	15.01	11.53	2.79	10,456	12,602	14,334	14,530	5.20	
		14.61	10.84	2.93	10,600	12,423	14,229	14,511	5.20	

WEIGHTED AVERAGES FOR THE PERIOD 12/31/91 TO 12/31/91

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL BTU/LB	LBS. SO2 PER MBTU
53,740.00	13.48	10.74	2.88	10,796	12,469	14,236	14,514	5.21

... END OF REPORT RUN ON 01/02/92 AT 12.48.54

ILLINOIS POWER COMPANY  
 KENNEDY POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 010192 TO 013192  
 FOR THE VENDOR : COAL TO BUNKERS

SAMPLE DATE	TONS TO BUNKERS	MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	POUNDS SO2 PER MBTU	SO2 LIMIT EXCEEDED
01/02/92	1,553.00	11.04	9.52	2.80	11,187	12,576	14,082	4.83	
01/03/92	2,178.00	14.12	10.88	2.91	10,458	12,411	14,210	5.33	
01/04/92	1,337.00	11.13	10.44	2.80	11,101	12,491	14,154	4.92	
01/05/92	3,130.00	11.71	10.64	3.12	11,030	12,494	14,296	5.53	
01/06/92	1,453.00	14.34	11.24	2.76	10,578	12,537	14,214	5.07	
01/07/92	3,075.00	14.21	10.62	3.00	10,477	12,446	14,204	5.48	
01/08/92	3,049.00	15.66	10.93	2.91	10,441	12,380	14,233	5.43	
01/09/92	3,976.00	15.85	10.89	2.90	10,430	12,394	14,237	5.43	
01/10/92	3,204.00	13.17	11.02	3.16	10,778	12,414	14,218	5.71	
01/11/92	1,077.00	15.31	10.25	2.85	10,553	12,431	14,176	5.27	
01/12/92	1,482.00	15.02	10.44	2.84	10,627	12,503	14,260	5.21	
01/13/92	1,697.00	10.44	10.38	3.37	11,285	12,545	14,184	5.82	
01/14/92	3,062.00	14.03	10.01	2.77	10,768	12,532	14,184	5.01	
01/15/92	2,204.00	15.12	10.45	2.79	10,421	12,278	14,002	5.22	
01/16/92	2,427.00	14.03	10.20	2.82	10,568	12,293	14,247	5.20	
01/17/92	2,532.00	14.15	10.64	2.90	10,769	12,473	14,237	5.28	
01/18/92	1,644.00	14.89	10.40	2.74	10,335	12,143	13,849	5.17	
01/19/92	1,716.00	14.48	10.59	2.76	10,458	12,229	13,976	5.15	
01/20/92	548.00	21.12	10.04	2.56	9,741	12,348	14,142	5.12	
01/21/92	448.00	14.83	10.73	2.84	10,763	12,636	14,457	5.15	
01/22/92	491.00	14.89	10.66	2.84	10,440	12,500	14,290	5.20	
01/23/92	1,935.00	16.50	9.98	2.65	10,498	12,573	14,280	4.92	
01/24/92	1,343.00	15.16	10.60	2.70	10,676	12,584	14,380	5.08	
01/25/92	1,678.00	11.91	10.27	3.37	11,125	12,629	14,295	5.91	
01/26/92	682.00	11.89	10.39	3.48	11,068	12,582	14,242	6.13	
01/27/92	3,031.00	13.95	9.99	2.76	10,800	12,551	14,298	4.93	
01/28/92	1,370.00	14.98	10.41	2.72	10,526	12,381	14,110	5.03	
01/29/92	1,618.00	14.97	10.47	2.75	10,532	12,387	14,127	5.09	
01/31/92		15.54	9.67	2.67	10,612	12,564	14,189	4.91	

WEIGHTED AVERAGES FOR THE PERIOD 010192 TO 013192

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	LBS. SO2 PER MBTU
55,271.00	14.25	10.50	2.90	10,665	12,435	14,170	14,445	5.30

... END OF REPORT RUN ON 02/20/72 AT 16.48.15

TEL NO: 4-212-0102  
 ID: 18 PUBLISHING UNIT  
 01/22/92 12:20  
 01/22/92 12:20

ILLINOIS POWER COMPANY  
 HENNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 020192 TO 022992  
 FOR THE VENDOR : COAL TO BUNKERS

SAMPLE DATE	TONS TO BUNKERS	X MOISTURE (AR)	Z ASH (AR)	Z SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL BTU/LB	POUNDS SO2 PER MBTU	SO2 LIMIT EXCEEDED
02/01/92	2,090.00	15.18	9.88	2.70	19,626	12,528	14,130	14,433	4.95	
02/02/92	1,227.00	11.49	11.23	2.98	10,949	12,371	14,169	14,449	5.39	
02/03/92	1,144.00	13.12	11.43	2.82	10,409	12,264	14,172	14,465	5.28	
02/04/92	1,460.00	15.82	19.39	2.72	10,438	12,393	14,145	14,415	5.03	
02/05/92	1,474.00	13.17	11.16	2.86	10,737	12,365	14,198	14,472	5.19	
02/06/92	3,203.00	13.56	9.44	2.89	10,954	12,642	14,192	14,445	5.16	
02/07/92	1,495.00	16.54	10.26	2.64	10,372	12,431	14,175	14,422	4.96	
02/08/92	1,585.00	14.47	10.70	2.82	10,617	12,431	14,188	14,465	5.13	
02/09/92	738.00	13.72	10.93	2.84	10,731	12,438	14,242	14,523	5.16	
02/10/92	507.00	14.43	11.01	2.85	10,575	12,366	14,192	14,477	5.23	
02/11/92	1,534.00	11.43	12.41	3.17	10,754	12,141	14,120	14,450	5.75	
02/12/92	2,048.00	13.25	11.12	2.97	10,741	12,382	14,262	14,470	5.40	
02/13/92	1,440.00	14.38	10.52	2.91	10,622	12,406	14,143	14,419	5.36	
02/14/92	1,448.00	11.11	11.49	3.50	10,976	12,348	14,181	14,487	6.22	
02/15/92	1,446.00	11.53	11.03	2.93	11,020	12,456	14,231	14,508	5.18	
02/16/92	1,612.00	16.10	10.88	2.85	10,354	12,317	14,151	14,439	5.33	
02/17/92	1,426.00	14.57	10.92	2.89	19,547	12,345	14,154	14,459	5.34	
02/18/92	2,265.00	15.54	10.56	2.79	10,502	12,435	14,210	14,488	5.12	
02/19/92	1,551.00	12.30	9.99	2.88	11,067	12,619	14,242	14,500	5.07	
02/20/92	1,561.00	12.64	9.87	2.86	10,984	12,576	14,177	14,434	5.63	
02/21/92	1,439.00	15.39	11.09	2.77	10,441	12,339	14,201	14,408	5.17	
02/22/92	1,976.00	15.00	10.92	2.76	10,406	12,350	14,199	14,404	5.17	
02/23/92	1,541.00	12.60	10.86	2.74	10,926	12,513	14,290	14,564	4.93	
02/24/92	1,418.00	15.43	11.24	2.84	10,415	12,316	14,204	14,496	5.32	
02/25/92	1,524.00	14.77	10.88	2.75	10,601	12,439	14,250	14,540	5.06	
02/26/92	3,282.00	11.08	13.40	2.96	10,741	12,079	14,222	14,546	5.33	
02/27/92	1,664.00	15.75	10.55	2.77	10,419	12,367	14,137	14,412	5.10	

WEIGHTED AVERAGES FOR THE PERIOD 020192 TO 022992

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL BTU/LB	LBS. SO2 PER MBTU
44,128.00	13.93	10.92	2.87	10,680	12,395	14,192	14,474	5.25

... END OF REPORT RUN ON 03/04/92 AT 11.47.18

ILLINOIS POWER COMPANY  
 HENNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 030192 TO 033192  
 FOR THE VENDOR : COAL TO BUNKERS

SAMPLE DATE	TONS TO BUNKERS	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL RTU/LB	POUNDS SO2 PER MTU	SO2 LIMIT EXCEEDED
03/01/92	1,600.00	15.54	10.49	2.77	10,515	12,450	14,215	14,491	5.14	
03/02/92	3,256.00	14.11	11.05	2.84	10,662	12,413	14,246	14,532	5.20	
03/03/92	3,595.00	14.37	10.96	2.84	10,528	12,294	14,098	14,370	5.26	
03/04/92	3,310.00	15.05	11.58	2.91	10,413	12,262	14,200	14,501	5.45	
03/05/92	1,745.00	13.34	10.96	2.94	10,744	12,398	14,194	14,474	5.34	
03/06/92	1,762.00	13.38	10.43	2.94	10,838	12,512	14,226	14,499	5.29	
03/07/92	1,552.00	13.40	11.31	2.87	10,723	12,381	14,242	14,530	5.22	
03/08/92	3,303.00	14.31	10.71	2.90	10,667	12,448	14,237	14,508	5.30	
03/09/92	2,536.00	14.41	10.24	2.87	10,681	12,380	14,180	14,450	5.24	
03/10/92	2,427.00	14.70	10.51	2.85	10,548	12,365	14,103	14,376	5.22	
03/11/92	2,178.00	15.19	10.33	2.81	10,583	12,478	14,209	14,481	5.18	
03/12/92	2,181.00	12.40	10.28	2.88	10,949	12,478	14,160	14,423	5.13	
03/13/92	1,909.00	13.44	10.81	2.89	10,766	12,437	14,212	14,480	5.24	
03/14/92	1,306.00	13.74	10.29	2.87	10,749	12,461	14,149	14,416	5.21	
03/15/92	672.00	13.39	10.52	2.83	10,818	12,478	14,201	14,475	5.28	
03/16/92	644.00	12.17	10.79	2.99	10,988	12,511	14,262	14,542	5.31	
03/18/92	1,296.00	13.00	10.93	2.84	10,815	12,430	14,216	14,494	5.12	
03/19/92	1,577.00	14.53	10.16	2.77	10,748	12,575	14,272	14,539	5.03	
03/21/92	995.00	14.11	12.45	2.88	10,426	12,132	14,188	14,502	5.33	
03/22/92	312.00	14.11	11.99	2.86	10,532	12,262	14,252	14,536	5.30	
03/23/92	589.00	14.06	11.45	2.82	10,547	12,273	14,167	14,457	5.21	
03/24/92	199.00	13.56	10.49	2.92	10,803	12,497	14,323	14,468	5.27	
03/27/92	1,665.00	14.58	12.30	2.99	10,381	12,152	14,197	14,515	5.62	
03/28/92	1,206.00	14.24	10.74	2.87	10,659	12,428	14,246	14,531	5.25	
03/29/92	1,311.00	15.20	9.95	2.70	10,654	12,564	14,235	14,495	4.94	
03/31/92	563.00	15.09	10.59	2.83	10,593	12,473	14,250	14,530	5.24	

WEIGHTED AVERAGES FOR THE PERIOD 030192 TO 033192

TOTAL TONS	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL RTU/LB	POUNDS SO2 PER MTU
40,682.00	14.15	10.82	2.87	10,657	12,413	14,295	14,484	5.25

... END OF REPORT RUN ON 04/06/92 AT 13.34.48

ILLINOIS POWER COMPANY  
 HENNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 040192 TO 043092  
 FOR THE VENDOR : COAL TO BUNKERS

SAMPLE DATE	TONS TO BUNKERS	MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL STU/LB	POUNDS CO2 PER MTU	CO2 LIMIT EXCEEDED
04/01/92	543.00	13.28	10.29	2.94	10,899	12,563	14,261	14,532	5.26	
04/02/92	711.00	13.22	9.54	2.91	10,949	12,617	14,174	14,429	5.18	
04/03/92	522.00	14.63	10.08	2.85	10,704	12,530	14,217	14,434	5.16	
04/08/92	1,585.00	12.91	10.22	2.91	10,907	12,524	14,189	14,454	5.20	
04/11/92	1,591.00	14.16	10.49	2.85	10,692	12,455	14,188	14,462	5.20	
04/12/92	571.00	14.47	11.52	2.76	10,456	12,225	14,129	14,416	5.15	
04/13/92	1,209.00	12.98	11.63	3.15	10,754	12,344	14,246	14,551	5.71	
04/14/92	603.00	15.10	11.98	2.96	10,393	12,241	14,252	14,566	5.55	
04/15/92	1,053.00	14.57	11.86	3.23	10,504	12,295	14,277	14,539	5.44	
04/16/92	1,503.00	13.98	10.63	3.01	10,704	12,443	14,198	14,439	5.48	
04/17/92	1,363.00	13.97	10.55	3.09	10,761	12,508	14,258	14,538	5.44	
04/18/92	2,537.00	15.67	10.12	2.86	10,543	12,501	14,205	14,479	5.27	
04/19/92	1,337.00	13.56	10.41	2.92	10,799	12,494	14,204	14,476	5.27	
04/20/92	1,611.00	13.98	10.64	2.93	10,684	12,421	14,174	14,452	5.35	
04/21/92	1,178.00	12.57	10.90	2.95	10,874	12,438	14,209	14,468	5.29	
04/22/92	607.00	13.44	10.31	2.79	10,827	12,510	14,202	14,466	5.02	
04/23/92	602.00	12.92	11.12	3.14	10,817	12,408	14,221	14,515	5.66	
04/25/92	516.00	12.55	10.60	3.31	10,925	12,493	14,215	14,505	5.91	
04/26/92	1,717.00	13.03	10.55	2.92	10,072	12,500	14,225	14,501	5.24	
04/29/92	1,746.00	13.07	10.66	2.90	10,831	12,459	14,209	14,475	5.22	
04/30/92	1,766.00	13.07	10.06	2.84	10,921	12,563	14,203	14,469	5.07	

WEIGHTED AVERAGES FOR THE PERIOD 040192 TO 043092

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL BTU/LB	CO2 PER MTU
25,370.00	13.73	10.60	2.93	10,754	12,435	14,219	14,438	5.31

... END OF REPORT RUN ON 05/05/92 AT 14.18.50

ILLINOIS POWER COMPANY  
 HEINEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 050192 TO 053192  
 FOR THE VENDOR : COAL TO BUNKERS

SAMPLE DATE	TONS TO BUNKERS	MOISTURE (GR)	% ASH (GR)	% SULFUR (GR)	BTU/LB (GR)	BTU/LB (DRY)	RTU/LB (H.A.F.)	UNIT COAL RTU/LB	FOURDS SO2 PER MBTU	SO2 LIMIT EXCEEDED
05/31/92	2,195.00	14.12	10.57	2.92	10,530	12,379	14,116	14,306	5.17	
05/02/92	2,524.00	14.02	10.55	2.91	10,761	12,519	14,263	14,510	5.27	
05/03/92	1,433.00	13.03	10.75	2.90	10,690	12,531	14,290	14,570	5.19	
05/05/92	1,924.00	13.30	10.55	2.76	10,821	12,481	14,155	14,415	4.99	
05/06/92	2,300.00	13.20	10.34	2.82	10,785	12,442	14,130	14,395	5.11	
05/07/92	1,267.00	13.23	10.36	2.88	10,805	12,476	14,157	14,435	5.19	
05/08/92	3,254.00	13.35	10.51	2.88	10,761	12,443	14,132	14,403	5.21	
05/09/92	1,728.00	13.05	11.97	2.99	10,770	12,387	14,368	14,673	5.01	
05/10/92	1,237.00	12.55	10.55	2.92	10,828	12,379	14,126	14,473	5.06	
05/11/92	1,664.00	12.91	10.60	2.96	10,831	12,432	14,160	14,493	5.33	
05/12/92	1,510.00	12.25	10.74	2.99	10,799	12,442	14,267	14,500	5.40	
05/13/92	1,737.00	13.54	11.15	2.91	10,716	12,379	14,209	14,477	5.30	
05/14/92	3,226.00	13.40	10.64	2.89	10,816	12,481	14,238	14,514	5.21	
05/15/92	1,609.00	14.03	11.33	2.91	10,610	12,341	14,214	14,507	5.35	
05/16/92	3,204.00	13.73	11.25	2.88	10,859	12,333	14,131	14,360	5.27	
05/17/92	1,634.00	12.86	11.55	2.83	10,610	12,317	14,224	14,517	5.20	
05/18/92	1,735.00	13.99	11.30	2.79	10,843	12,359	14,297	14,545	5.31	
05/19/92	1,676.00	13.91	10.51	2.94	10,801	12,551	14,297	14,570	5.04	
05/20/92	3,328.00	13.94	10.70	2.94	10,738	12,477	14,249	14,531	5.35	
05/21/92	3,259.00	13.86	10.79	2.91	10,756	12,468	14,275	14,558	5.27	
05/22/92	1,117.00	13.01	10.96	2.89	10,781	12,451	14,372	14,557	5.25	
05/23/92	1,735.00	14.60	11.24	2.86	10,695	12,413	14,399	14,574	5.26	
05/24/92	3,290.00	13.37	11.18	2.87	10,764	12,404	14,265	14,552	5.19	
05/25/92	1,060.00	13.78	10.72	2.81	10,782	12,506	14,291	14,559	5.08	
05/26/92	2,132.00	13.71	9.50	2.95	10,892	12,506	14,369	14,537	5.20	
05/27/92	2,179.00	13.23	9.20	2.96	10,808	12,362	14,248	14,513	5.34	
05/28/92	830.00	12.33	10.46	3.07	11,920	12,576	14,200	14,529	5.43	
05/29/92	2,892.00	13.28	10.42	3.01	10,955	12,630	14,298	14,571	5.36	
05/30/92	2,114.00	12.80	10.47	2.94	10,779	12,551	14,290	14,583	5.22	
05/31/92	1,681.00	12.51	10.34	3.06	11,003	12,580	14,266	14,543	5.42	

WEIGHTED AVERAGES FOR THE PERIOD 050192 TO 053192

TOTAL TONS	MOISTURE (GR)	% ASH (GR)	% SULFUR (GR)	BTU/LB (GR)	BTU/LB (DRY)	UNIT COAL RTU/LB	SO2 PER MBTU
62,425.00	13.53	10.72	2.91	10,782	12,469	14,514	5.25

... END OF REPORT RUN ON 06/04/92 AT 14.20.14

ILLINOIS POWER COMPANY  
 HENNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 060192 TO 063092  
 FOR THE VENDOR : COAL TO BUNKERS  
 (COMPLETED SAMPLES)

SAMPLE DATE	TONS TO BUNKERS	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	FOUND'S 502 PER MBTU
06/01/92	592.00	12.52	10.93	2.99	10,842	12,394	14,163	14,443	5.38
06/02/92	662.00	12.86	11.28	2.97	10,755	12,343	14,179	14,466	5.39
06/03/92	354.00	13.51	10.50	3.02	10,731	12,443	14,176	14,455	5.47
06/04/92	1,514.00	13.62	10.91	3.02	10,695	12,381	14,171	14,456	5.51
06/05/92	1,469.00	14.60	7.93	2.88	10,684	12,510	14,156	14,420	5.26
06/06/92	1,295.00	14.65	9.93	2.88	10,660	12,493	14,135	14,397	5.27
06/07/92	1,647.00	14.99	10.56	2.94	10,541	12,307	14,131	14,408	5.44
06/08/92	1,343.00	14.63	10.32	3.04	10,632	12,454	14,168	14,445	5.58
06/11/92	643.00	11.11	10.28	3.08	11,140	12,533	14,172	14,438	5.39
06/12/92	2,128.00	12.22	10.17	3.05	10,989	12,515	14,159	14,425	5.41
06/13/92	1,364.00	12.88	10.44	2.96	10,897	12,508	14,212	14,483	5.30
06/14/92	1,766.00	13.41	10.75	2.90	10,765	12,432	14,195	14,471	5.25
06/15/92	1,772.00	13.52	11.19	2.96	10,676	12,345	14,179	14,469	5.41
06/16/92	1,775.00	12.81	10.63	3.04	10,842	12,435	14,161	14,438	5.47
06/17/92	3,327.00	13.04	11.16	3.01	10,768	12,382	14,204	14,492	5.44
06/18/92	1,774.00	12.92	10.96	2.99	10,818	12,409	14,193	14,475	5.39
06/19/92	1,581.00	13.78	10.79	2.93	10,721	12,435	14,213	14,494	5.33
06/21/92	1,594.00	12.46	10.69	2.98	10,903	12,454	14,187	14,462	5.33
06/22/92	1,547.00	13.76	10.50	2.92	10,793	12,515	14,250	14,527	5.28
06/23/92	1,710.00	12.55	10.38	2.96	10,969	12,543	14,233	14,503	5.26
06/24/92	1,592.00	12.74	10.09	2.94	10,910	12,502	14,138	14,399	5.26
06/25/92	3,406.00	13.20	10.15	2.89	10,915	12,576	14,242	14,507	5.17
06/26/92	1,431.00	13.15	10.10	2.87	10,945	12,603	14,242	14,526	5.11
06/27/92	1,126.00	13.41	10.21	2.93	10,876	12,553	14,232	14,501	5.26
06/28/92	1,899.00	12.23	10.16	3.05	11,021	12,557	14,201	14,469	5.40
06/29/92	1,987.00	12.50	10.55	2.97	10,937	12,500	14,213	14,486	5.30
06/30/92	2,172.00	12.76	10.67	3.01	10,922	12,520	14,265	14,544	5.37

WEIGHTED AVERAGES FOR THE PERIOD 060192 TO 063092

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	LBS. 502 PER MBTU
43,800.00	13.17	10.53	2.97	10,833	12,475	14,197	14,471	5.34

... END OF REPORT RUN ON 07/07/92 AT 11.25.34

JUL 11 11:41 AM  
 HENNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 070192 TO 073192  
 FOR THE VENDOR : COAL TO BUNKERS  
 (COMPLETED SAMPLES)

SAMPLE DATE	TONS TO BUNKERS	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL BTU/LB	FOUND S02 PER MBTU	ABOVE 5.8 LBS S02
07/01/92	2,669.00	12.30	10.91	3.06	10,029	12,346	14,100	14,300	5.51	
07/02/92	2,567.00	12.48	10.47	2.93	10,918	12,475	14,170	14,438	5.23	
07/03/92	1,748.00	12.50	10.29	2.93	10,965	12,532	14,201	14,468	5.21	
07/04/92	1,545.00	13.76	10.07	2.96	10,783	12,503	14,156	14,423	5.35	
07/05/92	1,380.00	14.03	10.16	2.93	10,766	12,523	14,202	14,471	5.31	
07/06/92	2,003.00	13.26	10.21	2.95	10,829	12,485	14,152	14,417	5.31	
07/07/92	2,389.00	15.05	16.96	2.95	9,590	11,289	14,105	14,524	6.00	
07/08/92	1,862.00	16.90	10.12	2.79	10,270	12,359	14,073	14,342	5.30	
07/09/92	1,895.00	15.67	9.64	2.87	10,604	12,574	14,197	14,460	5.28	
07/10/92	2,350.00	15.28	9.75	2.94	10,563	12,469	14,090	14,353	5.43	
07/11/92	1,514.00	15.79	9.98	2.75	10,507	12,477	14,153	14,418	5.10	
07/12/92	1,659.00	13.57	10.10	2.95	10,776	12,468	14,110	14,382	5.34	
07/13/92	2,088.00	17.01	10.45	2.78	10,360	12,420	14,208	14,491	5.26	
07/14/92	2,297.00	16.82	10.62	2.82	10,272	12,349	14,156	14,440	5.35	
07/15/92	1,849.00	15.83	10.71	2.90	10,451	12,416	14,227	14,514	5.41	
07/16/92	1,695.00	12.90	9.74	3.01	10,974	12,600	14,186	14,446	5.35	
07/17/92	1,328.00	12.37	9.69	3.14	11,110	12,678	14,254	14,520	5.51	
07/18/92	1,294.00	14.09	10.35	2.99	10,740	12,502	14,215	14,490	5.43	
07/19/92	1,600.00	12.73	10.53	3.01	10,914	12,506	14,222	14,497	5.38	
07/20/92	1,596.00	12.84	10.46	2.97	10,933	12,544	14,254	14,529	5.30	
07/23/92	1,720.00	12.68	10.64	2.92	10,905	12,489	14,225	14,500	5.22	
07/24/92	2,529.00	14.63	10.81	2.89	10,568	12,378	14,174	14,457	5.32	
07/26/92	1,643.00	13.74	10.13	2.79	10,793	12,513	14,178	14,439	5.04	
07/27/92	1,741.00	11.80	10.32	2.98	11,051	12,541	14,204	14,471	5.26	
07/28/92	1,610.00	12.91	10.15	3.04	10,969	12,595	14,256	14,520	5.40	
07/29/92	1,769.00	11.84	10.68	2.88	10,986	12,460	14,179	14,448	5.11	
07/30/92	1,640.00	17.46	13.19	2.55	9,829	11,908	14,172	14,503	5.06	
07/31/92	1,601.00	13.49	10.77	2.80	10,697	12,365	14,173	14,395	5.10	

WEIGHTED AVERAGES FOR THE PERIOD 070192 TO 073192

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL BTU/LB	LBS. S02 PER MBTU
51,589.00	14.12	10.72	2.91	10,652	12,401	14,172	14,452	5.33

... END OF REPORT RUN ON 08/05/92 AT 14.54.15



ILLINOIS POWER COMPANY  
HENNEPIN POWER STATION  
COAL ANALYSIS REPORT FOR THE PERIOD 080192 TO 083192  
FOR THE VENDOR : COAL TO BUNKERS  
(COMPLETED SAMPLES)

SAMPLE DATE	TONS TO BUNKERS	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	POUNDS SO2 PER MBTU	ABOVE 5.0 LBS SO2
08/02/92	1,617.00	13.72	11.07	2.84	10,721	12,425	14,253	14,538	5.17	
08/04/92	1,747.00	11.74	11.51	3.21	10,951	12,408	14,269	14,569	5.72	
08/05/92	1,770.00	12.22	10.97	3.03	10,872	12,385	14,154	14,436	5.43	
08/06/92	3,453.00	12.95	11.05	3.10	10,767	12,368	14,166	14,455	5.62	
08/07/92	1,578.00	11.92	10.76	3.01	10,972	12,457	14,190	14,467	5.35	
08/08/92	1,369.00	12.62	10.93	2.96	10,835	12,400	14,173	14,452	5.33	
08/09/92	2,339.00	11.98	10.54	2.83	10,994	12,490	14,189	14,455	5.02	
08/10/92	2,044.00	12.88	10.65	2.98	10,825	12,425	14,153	14,432	5.37	
08/11/92	1,924.00	12.30	10.28	2.93	10,902	12,523	14,186	14,450	5.20	
08/12/92	2,152.00	12.66	10.58	3.08	10,892	12,471	14,189	14,468	5.51	
08/13/92	1,766.00	12.72	10.65	3.04	10,910	12,500	14,237	14,517	5.43	
08/14/92	1,260.00	13.09	10.50	3.06	10,848	12,481	14,197	14,474	5.50	
08/15/92	1,168.00	13.66	10.82	2.91	10,745	12,445	14,227	14,509	5.29	
08/16/92	914.00	13.50	10.78	3.02	10,772	12,453	14,225	14,510	5.47	
08/17/92	1,472.00	14.09	10.74	2.99	10,689	12,442	14,220	14,504	5.45	
08/18/92	2,293.00	12.27	11.17	2.96	10,861	12,379	14,184	14,469	5.31	
08/19/92	1,739.00	22.64	9.51	2.61	9,619	12,435	14,178	14,452	5.29	
08/20/92	1,737.00	12.67	10.18	2.94	10,965	12,536	14,213	14,479	5.23	
08/21/92	1,602.00	13.61	10.40	2.87	10,761	12,457	14,162	14,430	5.20	
08/22/92	1,606.00	12.73	10.39	2.96	10,922	12,515	14,207	14,477	5.28	
08/23/92	2,576.00	12.54	10.22	2.96	10,949	12,520	14,176	14,442	5.28	
08/24/92	1,754.00	12.58	11.25	2.94	10,814	12,370	14,197	14,402	5.30	
08/25/92	2,128.00	13.04	10.29	2.09	10,861	12,490	14,167	14,431	5.19	
08/26/92	1,571.00	13.49	10.45	2.70	10,848	12,540	14,263	14,532	5.00	
08/27/92	1,605.00	15.15	9.97	2.78	10,663	12,566	14,239	14,505	5.08	
08/28/92	1,603.00	12.34	9.93	2.77	10,610	12,532	14,197	14,460	5.09	
08/29/92	1,771.00	12.02	12.02	2.84	10,807	12,284	14,229	14,523	5.12	
08/30/92	1,571.00	12.85	10.74	2.97	10,896	12,502	14,250	14,539	5.32	

WEIGHTED AVERAGES FOR THE PERIOD 080192 TO 083192

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	LBS. SO2 PER MBTU
50,129.00	13.24	10.66	2.94	10,806	12,455	14,200	14,477	5.31

... END OF REPORT RUN ON 07/08/92 AT 13.00.26

ILLINOIS POWER COMPANY  
 HENNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 090192 TO 093092  
 FOR THE VENDOR : COAL TO BUNKERS  
 (COMPLETED SAMPLES)

SAMPLE DATE	TONS TO BUNKERS	MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL LBS. 502 PER MTU	POUNDS 502 PER MTU	ABOVE 5.0 LBS 502
09/01/92	1,734.00	12.89	10.58	3.06	10,840	12,453	14,175	14,452	5.50	
09/02/92	3,136.00	13.49	10.05	2.83	10,814	12,501	14,145	14,404	5.10	
09/03/92	2,176.00	14.06	10.14	2.91	10,733	12,489	14,160	14,427	5.29	
09/04/92	1,707.00	13.74	10.63	2.84	10,710	12,415	14,160	14,433	5.17	
09/05/92	1,282.00	13.73	10.76	2.94	10,707	12,411	14,180	14,460	5.39	
09/06/92	1,798.00	14.87	10.51	2.94	10,558	12,402	14,149	14,428	5.43	
09/07/92	883.00	13.97	10.39	2.93	10,800	12,553	14,278	14,554	5.29	
09/08/92	1,574.00	14.95	10.41	2.95	10,555	12,410	14,140	14,541	5.45	
09/09/92	1,838.00	15.04	10.32	2.81	10,549	12,416	14,132	14,402	5.19	
09/10/92	2,335.00	13.39	10.72	3.03	10,775	12,441	14,199	14,480	5.48	
09/11/92	1,587.00	13.76	10.69	3.02	10,706	12,413	14,171	14,452	5.50	
09/12/92	1,514.00	15.73	10.00	2.82	10,528	12,493	14,175	14,443	5.22	
09/13/92	1,633.00	15.64	10.06	2.79	10,530	12,482	14,173	14,439	5.17	
09/14/92	1,633.00	11.89	10.72	3.06	11,008	12,493	14,224	14,502	5.42	
09/15/92	2,098.00	14.87	9.87	2.81	10,694	12,562	14,209	14,472	5.12	
09/16/92	2,471.00	16.29	10.17	2.96	10,413	12,441	14,160	14,438	5.54	
09/17/92	1,519.00	15.11	9.75	2.83	10,611	12,501	14,123	14,381	5.20	
09/18/92	1,559.00	13.24	11.35	3.13	10,724	12,362	14,222	14,520	5.69	
09/19/92	1,594.00	15.14	9.53	2.88	10,680	12,586	14,179	14,437	5.26	
09/20/92	1,563.00	12.92	11.33	2.96	10,793	12,394	14,248	14,539	5.35	
09/21/92	2,648.00	15.05	9.91	2.85	10,641	12,526	14,181	14,446	5.23	
09/22/92	1,867.00	13.73	10.29	2.84	10,859	12,587	14,291	14,562	5.10	
09/23/92	472.00	14.10	11.75	3.00	10,566	12,300	14,249	14,555	5.54	
09/24/92	1,566.00	14.19	11.05	2.86	10,655	12,417	14,253	14,539	5.23	
09/25/92	3,330.00	12.64	10.95	2.97	10,908	12,486	14,275	14,559	5.31	
09/26/92	1,735.00	12.08	10.95	3.06	10,972	12,480	14,256	14,540	5.44	
09/27/92	1,993.00	13.55	10.39	2.80	10,812	12,507	14,214	14,482	5.05	
09/28/92	1,626.00	14.48	10.64	2.87	10,629	12,428	14,195	14,473	5.27	
09/29/92	1,577.00	12.66	10.97	3.06	10,883	12,460	14,249	14,537	5.48	
09/30/92	1,495.00	12.47	10.21	3.11	11,033	12,605	14,269	14,544	5.50	

WEIGHTED AVERAGES FOR THE PERIOD 090192 TO 093092

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (H.A.F.)	UNIT COAL LBS. 502 PER MTU
53,943.00	13.98	10.45	2.93	10,729	12,473	14,198	14,473 5.32

... END OF REPORT RUN ON 10/06/92 AT 08.31.44

ILLINOIS POWER COMPANY  
 HENNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 100192 TO 103192  
 FOR THE VENDOR : COAL TO BUNKERS  
 (COMPLETED SAMPLES)

SAMPLE DATE	TONS TO BUNKERS	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	POUNDS S02 PER MBTU	ABOVE 5.8 LRS S02
10/01/92	1,560.00	12.60	10.40	3.06	10,955	12,534	14,226	14,502	5.45	
10/02/92	3,561.00	15.75	10.06	2.78	10,516	12,483	14,175	14,441	5.16	
10/03/92	1,737.00	14.71	10.28	2.83	10,637	12,472	14,181	14,450	5.19	
10/04/92	1,315.00	12.33	10.38	2.95	11,006	12,554	14,239	14,509	5.23	
10/05/92	1,613.00	14.74	10.21	2.89	10,639	12,479	14,176	14,447	5.30	
10/06/92	1,644.00	11.80	10.57	2.94	11,014	12,488	14,188	14,457	5.21	
10/07/92	2,111.00	16.82	9.88	2.82	10,356	12,450	14,127	14,395	5.31	
10/08/92	1,437.00	13.12	10.11	3.18	10,866	12,506	14,153	14,427	5.71	
10/09/92	2,027.00	13.48	10.15	3.07	10,860	12,552	14,221	14,493	5.51	
10/10/92	1,644.00	16.44	9.84	2.86	10,441	12,496	14,164	14,431	5.34	
10/11/92	1,596.00	14.96	10.81	2.95	10,511	12,361	14,162	14,445	5.47	
10/13/92	3,351.00	14.29	10.36	2.94	10,716	12,502	14,221	14,497	5.34	
10/14/92	1,542.00	13.22	10.87	3.00	10,755	12,395	14,169	14,451	5.44	
10/15/92	3,024.00	13.71	10.33	3.15	10,770	12,483	14,179	14,459	5.70	
10/16/92	2,531.00	17.19	10.32	2.90	10,340	12,486	14,263	14,550	5.47	
10/17/92	2,236.00	17.82	9.87	2.74	10,301	12,534	14,245	14,517	5.19	
10/18/92	1,558.00	14.92	10.89	2.90	10,539	12,387	14,205	14,491	5.37	
10/19/92	1,937.00	14.56	10.91	3.01	10,570	12,371	14,183	14,471	5.55	
10/20/92	2,046.00	13.65	10.76	2.88	10,683	12,371	14,132	14,408	5.26	
10/21/92	1,588.00	14.20	10.89	2.98	10,642	12,404	14,207	14,494	5.46	
10/22/92	2,417.00	14.51	10.40	2.96	10,678	12,490	14,219	14,497	5.41	
10/23/92	663.00	14.69	10.46	3.04	10,622	12,450	14,190	14,473	5.58	
10/24/92	.00	.00	.00	.00	0	0	0	0	.00	
10/25/92	.00	.00	.00	.00	0	0	0	0	.00	

WEIGHTED AVERAGES FOR THE PERIOD 100192 TO 103192

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	LBS. S02 PER MBTU
43,138.00	14.68	10.37	2.94	10,639	12,469	14,194	14,469	5.38

... END OF REPORT RUN ON 11/03/92 AT 09.25.16

ILLINOIS POWER COMPANY  
HENNEPIN POWER STATION  
COAL ANALYSIS REPORT FOR THE PERIOD 110192 TO 113092  
FOR THE VENDOR : COAL TO BUNKERS  
(COMPLETED SAMPLES)

SAMPLE DATE	TONS TO BUNKERS	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	POUNDS S02 PER MBTU	ABOVE 5.8 LBS S02
11/01/92	1,724.00	13.94	11.17	3.11	10,667	12,395	14,244	14,542	5.69	
11/02/92	1,631.00	16.22	10.66	3.07	10,363	12,359	14,172	14,465	5.78	
11/04/92	1,718.00	14.11	10.98	3.01	10,665	12,417	14,235	14,528	5.50	
11/05/92	3,384.00	16.28	10.98	2.95	10,316	12,322	14,182	14,476	5.57	
11/08/92	1,735.00	14.80	10.04	2.96	10,628	12,474	14,141	14,410	5.43	
11/07/92	1,566.00	13.16	10.12	3.06	10,862	12,509	14,159	14,427	5.49	
11/08/92	1,600.00	13.02	10.90	3.21	10,797	12,414	14,192	14,483	5.80	
11/09/92	1,697.00	14.09	11.61	3.04	10,496	12,218	14,127	14,427	5.65	
11/10/92	1,574.00	16.02	10.45	2.95	10,403	12,387	14,148	14,429	5.53	
11/11/92	1,559.00	16.03	10.46	3.02	10,369	12,348	14,105	14,389	5.68	
11/12/92	1,722.00	16.02	9.88	3.03	10,489	12,489	14,153	14,429	5.63	
11/13/92	1,653.00	15.57	10.45	3.07	10,442	12,557	14,113	14,398	5.73	
11/14/92	1,622.00	13.05	10.51	2.88	10,644	12,355	14,072	14,341	5.28	
11/15/92	1,761.00	13.98	10.55	2.93	10,667	12,401	14,136	14,409	5.36	
11/16/92	1,579.00	16.05	10.72	2.92	10,328	12,302	14,103	14,388	5.51	
11/17/92	3,346.00	16.08	10.52	2.96	10,575	12,452	14,212	14,495	5.46	
11/18/92	1,415.00	13.49	10.63	3.21	10,807	12,492	14,242	14,532	5.79	
11/19/92	3,420.00	15.32	10.57	3.04	10,551	12,459	14,245	14,523	5.62	
11/20/92	2,148.00	17.17	10.13	2.98	10,350	12,486	14,237	14,521	5.61	
11/21/92	1,855.00	15.90	10.06	2.94	10,532	12,523	14,225	14,501	5.44	
11/22/92	2,551.00	16.53	9.89	2.83	10,474	12,549	14,236	14,506	5.27	
11/23/92	2,431.00	15.92	10.11	2.83	10,471	12,453	14,155	14,435	5.27	
11/24/92	2,428.00	13.99	9.44	2.84	10,984	12,770	14,344	14,601	5.04	
11/25/92	2,515.00	14.16	9.48	2.87	10,896	12,694	14,269	14,526	5.14	
11/26/92	13,700.00	15.49	9.55	2.91	10,697	12,657	14,270	14,534	5.30	
11/28/92	3,339.00	15.73	10.46	2.93	10,424	12,369	14,122	14,403	5.49	
11/30/92	2,703.00	15.39	11.15	2.92	10,435	12,333	14,206	14,500	5.47	

WEIGHTED AVERAGES FOR THE PERIOD 110192 TO 113092

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	LBS. S02 PER MBTU
60,376.00	15.24	10.27	2.96	10,583	12,485	14,205	14,483	5.45

... END OF REPORT RUN ON 12/11/92 AT 10.49.47

ILLINOIS POWER COMPANY  
 HERNEPIN POWER STATION  
 COAL ANALYSIS REPORT FOR THE PERIOD 120192 TO 123192  
 FOR THE VENDOR : COAL TO BUNKERS  
 (COMPLETED SAMPLES)

SAMPLE DATE	TONS TO BUNKERS	% MOISTURE (AR)	% ACH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	POUNDS COAL PER MRTU	ABOVE 5.8 LBS 502
12/01/92	1,070.00	15.67	10.42	2.85	10,509	12,461	14,217	14,497	5.29	
12/02/92	2,458.00	13.33	10.71	2.94	10,745	12,400	14,151	14,425	5.33	
12/03/92	1,283.00	12.68	10.74	3.03	10,943	12,417	14,159	14,437	5.45	
12/04/92	1,411.00	13.05	11.53	3.06	10,723	12,333	14,219	14,516	5.56	
12/05/92	2,919.00	14.30	11.12	3.06	10,591	12,360	14,200	14,495	5.64	
12/06/92	1,820.00	16.24	10.78	2.83	10,346	12,352	14,177	14,463	5.34	
12/07/92	1,633.00	13.10	10.13	3.01	10,849	12,484	14,131	14,398	5.41	
12/08/92	1,301.00	12.00	10.01	3.04	11,046	12,553	14,165	14,426	5.37	
12/09/92	1,759.00	12.63	10.08	2.98	10,810	12,516	14,170	14,438	5.38	
12/10/92	2,756.00	14.92	10.20	2.92	10,566	12,419	14,112	14,381	5.38	
12/11/92	1,227.00	16.14	9.79	2.91	10,496	12,516	14,169	14,439	5.41	
12/12/92	1,757.00	16.00	9.86	2.92	10,500	12,500	14,163	14,431	5.42	
12/13/92	2,654.00	14.50	9.87	2.99	10,709	12,525	14,160	14,426	5.45	
12/14/92	1,880.00	14.05	10.48	2.92	10,740	12,495	14,230	14,506	5.30	
12/15/92	1,688.00	16.07	10.49	2.84	10,432	12,429	14,205	14,465	5.31	
12/16/92	2,731.00	16.23	9.75	2.79	10,481	12,511	14,159	14,421	5.19	
12/17/92	1,787.00	14.07	11.18	3.10	10,588	12,321	14,162	14,460	5.71	
12/18/92	3,184.00	13.55	10.85	3.00	10,716	12,394	14,173	14,456	5.47	
12/19/92	1,634.00	14.11	10.10	2.90	10,758	12,528	14,194	14,463	5.26	
12/20/92	1,451.00	15.47	9.43	2.91	10,650	12,599	14,181	14,440	5.33	
12/21/92	1,454.00	14.21	10.10	2.82	10,714	12,489	14,155	14,419	5.13	
12/22/92	1,573.00	13.14	10.07	3.00	10,913	12,563	14,210	14,479	5.36	
12/23/92	1,496.00	15.65	11.45	2.91	10,297	12,207	14,125	14,423	5.51	
12/24/92	617.00	15.45	11.21	2.84	10,329	12,216	14,084	14,371	5.36	
12/25/92	1,577.00	12.74	10.61	2.85	10,924	12,519	14,252	14,524	5.09	
12/26/92	1,213.00	12.73	9.98	2.94	10,957	12,556	14,178	14,438	5.23	
12/27/92	1,271.00	15.16	11.08	2.92	10,460	12,329	14,182	14,472	5.44	
12/28/92	1,359.00	13.81	10.57	2.94	10,707	12,422	14,158	14,435	5.35	
12/29/92	1,429.00	12.15	10.96	3.17	10,913	12,422	14,193	14,480	5.66	
12/30/92	1,744.00	15.68	9.63	2.80	10,562	12,526	14,141	14,399	5.17	
12/31/92	1,541.00	15.37	10.30	2.89	10,537	12,451	14,176	14,450	5.35	

WEIGHTED AVERAGES FOR THE PERIOD 120192 TO 123192

TOTAL TONS	MOISTURE (AR)	ASH (AR)	SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	LBS. 502 PER MRTU
54,797.00	14.37	10.42	2.94	10,659	12,448	14,173	14,448	5.38

... END OF REPORT RUN ON 01/06/93 AT 17.58.01

HENNEPIN POWER STATION										
COAL ANALYSIS REPORT FOR THE PERIOD 01/01/93 TO 03/31/93										
FOR THE VENDCR : TO BUNKERS										
(COMPLETED SAMPLES)										
SAMPLE DATE	TONS SAMPLED	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	POUNDS SO2 PER MBTU	HEAT INPUT MMBTU/HR
WT. AVE.	153,404	14.64	10.48	2.97	10609.00	12,428	14,168	14,446	5.45	
1/2/93	2,610	15.38	10.16	2.84	10,534	12,448	14,148	14,417	5.26	
1/3/93	1,340	14.20	10.36	2.88	10,670	12,435	14,143	14,412	5.26	
1/4/93	1,238	16.07	9.62	2.87	10,555	12,577	14,205	14,469	5.30	
1/5/93	1,353	14.65	10.51	3.21	10,582	12,399	14,139	14,427	5.92	1405
1/6/93	797	14.30	10.54	3.17	10,663	12,443	14,187	14,474	5.80	
1/7/93	2,199	17.33	9.82	2.83	10,315	12,478	14,161	14,429	5.35	
1/8/93	410	12.29	11.21	3.21	10,812	12,327	14,133	14,425	5.79	
1/9/93	2,253	13.53	10.66	3.60	10,749	12,429	14,176	14,480	6.51	1370
1/10/93	1,314	12.77	10.45	3.07	10,813	12,396	14,084	14,355	5.54	
1/11/93	1,816	14.38	10.26	2.91	10,665	12,455	14,151	14,421	5.32	
1/12/93	1,543	13.51	10.21	2.92	10,790	12,475	14,146	14,411	5.28	
1/13/93	2,195	13.79	10.52	3.00	10,686	12,395	14,118	14,394	5.48	
1/14/93	1,776	12.99	10.59	3.28	10,853	12,474	14,217	14,490	5.89	
1/15/93	1,116	12.55	12.11	3.07	10,668	12,198	14,158	14,466	5.61	
1/16/93	1,761	17.61	9.62	2.80	10,306	12,509	14,161	14,428	5.30	
1/17/93	2,616	15.09	10.90	2.97	10,438	12,292	14,102	14,389	5.54	
1/18/93	1,264	15.19	10.50	2.81	10,518	12,402	14,154	14,429	5.21	
1/19/93	1,211	12.46	11.89	3.57	10,712	12,236	14,140	14,482	6.50	2651
1/20/93	3,470	14.13	10.58	2.99	10,683	12,439	14,189	14,469	5.46	
1/21/93	1,632	17.88	10.40	2.84	10,129	12,334	14,121	14,406	5.47	
1/22/93	1,773	12.25	11.18	3.36	10,832	12,344	14,190	14,445	6.05	1457
1/23/93	2,752	14.20	11.70	3.10	10,547	12,294	14,234	14,543	5.74	
1/24/93	1,039	16.53	10.32	2.87	10,344	12,393	14,141	14,419	5.41	
1/25/93	1,532	15.82	11.14	2.89	10,396	12,350	14,233	14,530	5.42	
1/26/93	1,501	15.96	10.67	2.89	10,413	12,390	14,193	14,478	5.41	
1/27/93	1,641	12.12	10.43	3.03	10,986	12,502	14,186	14,456	5.38	
1/28/93	1,770	12.35	10.77	3.05	10,950	12,493	14,243	14,525	5.43	
1/29/93	1,207	12.27	11.27	3.24	10,914	12,441	14,275	14,574	5.79	
1/30/93	1,594	12.28	10.74	3.15	10,926	12,456	14,193	14,476	5.62	
1/31/93	609	12.70	10.90	2.88	10,841	12,418	14,189	14,467	5.18	
2/1/93	893	16.04	11.32	2.89	10,206	12,156	14,050	14,344	5.52	
2/2/93	1,758	15.77	11.01	2.93	10,378	12,322	14,174	14,466	5.51	
2/3/93	1,751	15.78	10.33	2.79	10,464	12,424	14,162	14,434	5.20	
2/4/93	1,744	12.70	9.84	2.92	11,031	12,636	14,241	14,500	5.16	
2/5/93	1,559	12.47	10.29	3.15	10,948	12,508	14,175	14,448	5.61	
2/7/93	1,787	15.04	10.04	2.92	10,672	12,560	14,244	14,516	5.34	
2/8/93	1,616	15.16	10.00	2.89	10,635	12,535	14,210	14,479	5.30	
2/9/93	1,705	15.34	10.68	3.05	10,517	12,422	14,215	14,507	5.66	
2/10/93	1,602	15.24	10.50	2.97	10,505	12,394	14,146	14,427	5.51	
2/11/93	1,625	14.31	10.56	2.95	10,661	12,441	14,190	14,468	5.40	
2/12/93	1,969	14.79	10.95	2.91	10,529	12,358	14,181	14,465	5.39	
2/14/93	1,623	14.36	10.93	3.00	10,600	12,378	14,189	14,477	5.52	
2/15/93	1,734	15.73	10.25	2.85	10,475	12,430	14,150	14,424	5.31	
2/16/93	3,224	15.45	10.64	2.88	10,494	12,411	14,198	14,480	5.35	
2/17/93	1,754	14.24	10.56	2.90	10,712	12,491	14,244	14,523	5.28	
2/18/93	1,922	14.51	10.39	2.95	10,645	12,452	14,175	14,450	5.40	
2/19/93	2,358	16.03	10.46	2.90	10,436	12,428	14,197	14,479	5.42	
2/20/93	1,773	16.54	10.35	2.76	10,378	12,435	14,195	14,471	5.19	
2/21/93	1,614	16.28	10.67	2.88	10,374	12,392	14,201	14,488	5.41	
2/22/93	1,656	16.61	10.42	2.87	10,345	12,406	14,177	14,458	5.41	
2/23/93	1,471	14.74	10.55	2.94	10,585	12,415	14,168	14,447	5.42	
2/24/93	1,449	14.06	10.36	2.98	10,700	12,452	14,158	14,432	5.43	
2/25/93	1,541	14.02	10.01	2.89	10,750	12,503	14,151	14,413	5.24	

HENNEPIN POWER STATION										
CCAL ANALYSIS REPORT FOR THE PERIOD 01/01/93 TO 03/31/93										
FOR THE VENDOR : TO SUNKERS										
(COMPLETED SAMPLES)										
SAMPLE DATE	TONS SAMPLED	% MOISTURE (AR)	% ASH (AR)	% SULFUR (AR)	BTU/LB (AR)	BTU/LB (DRY)	BTU/LB (M.A.F.)	UNIT COAL BTU/LB	POUNDS SO2 PER MBTU	HEAT INPUT MMBTU/HR
2/26/93	1,795	16.82	10.37	2.91	10,317	12,404	14,171	14,453	5.50	
2/27/93	1,824	14.47	10.55	2.94	10,560	12,463	14,216	14,496	5.38	
2/28/93	1,485	15.78	10.59	2.93	10,455	12,415	14,200	14,484	5.46	
3/1/93	1,697	16.92	10.37	2.80	10,277	12,370	14,134	14,411	5.31	
3/2/93	1,819	14.30	9.74	3.07	10,771	12,569	14,181	14,447	5.56	
3/3/93	1,028	15.23	10.12	3.02	10,516	12,405	14,087	14,361	5.60	
3/4/93	2,023	13.29	8.13	2.99	11,301	13,033	14,381	14,619	5.16	
3/5/93	2,203	13.03	8.63	3.04	11,260	12,947	14,373	14,620	5.26	
3/6/93	2,010	15.92	10.33	2.84	10,475	12,459	14,203	14,480	5.29	
3/7/93	1,374	14.79	10.13	2.87	10,654	12,502	14,189	14,458	5.25	
3/8/93	1,451	11.22	10.29	3.06	11,174	12,586	14,235	14,505	5.34	
3/9/93	1,524	14.61	10.11	2.92	10,622	12,439	14,110	14,377	5.36	
3/10/93	2,212	14.61	10.16	3.01	10,634	12,453	14,134	14,408	5.52	
3/11/93	2,181	15.00	10.10	2.84	10,493	12,344	14,008	14,271	5.28	
3/12/93	2,010	15.60	10.05	2.84	10,529	12,475	14,161	14,430	5.26	
3/13/93	2,275	15.51	10.30	2.77	10,409	12,320	14,029	14,296	5.19	
3/14/93	2,173	14.49	9.68	2.83	10,721	12,538	14,138	14,394	5.15	
3/15/93	2,559	14.65	9.84	2.85	10,661	12,491	14,118	14,378	5.21	
3/16/93	525	14.53	10.32	2.93	10,586	12,386	14,086	14,357	5.40	
3/17/93	3,216	13.16	11.19	3.11	10,667	12,285	14,099	14,390	5.68	
3/18/93	3,318	11.68	12.13	3.28	10,804	12,234	14,182	14,494	5.91	
3/19/93	2,851	13.66	11.37	3.00	10,582	12,259	14,114	14,406	5.53	
3/20/93	1,566	14.76	10.62	2.89	10,489	12,305	14,055	14,331	5.37	
3/21/93	1,758	14.72	10.44	2.91	10,614	12,445	14,181	14,458	5.35	
34,050	1,644	14.24	11.18	2.97	10,500	12,244	14,079	14,367	5.52	
34,051	1,564	15.40	10.43	2.83	10,478	12,384	14,126	14,400	5.27	
34,052	2,134	15.11	10.25	2.94	10,565	12,446	14,154	14,428	5.42	
34,053	1,729	14.39	10.51	2.93	10587.00	12,366	14,095	14,371	5.40	
3/26/93	1,741	14.83	10.85	2.96	10525.00	12,357	14,161	14,447	5.48	
3/27/93	1,739	16.05	10.75	2.88	10325.00	12,299	14,105	14,388	5.44	
3/28/93	1,757	15.98	10.29	2.88	10416.00	12,398	14,129	14,402	5.39	
3/29/93	1,660	12.98	10.84	3.01	10841.00	12,458	14,231	14,514	5.41	
3/30/93	1,293	16.05	10.19	2.85	10467.00	12,467	14,189	14,464	5.31	
3/31/93	1,806	17.15	10.13	2.81	10320.00	12,457	14,193	14,467	5.31	

## **APPENDIX B**



NPDES Permit No. IL0001554

Illinois Environmental Protection Agency

Division of Water Pollution Control

2200 Churchill Road

P.O. Box 19276

Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Reissued (NPDES) Permit

Expiration Date: July 1, 1997

Issue Date: August 10, 1992  
Effective Date: September 9, 1992

Name and Address of Permittee:

Illinois Power Company  
500 South 27th Street  
Post Office Box 511  
Decatur, Illinois 62525-1805

Facility Name and Address:

Illinois Power Company  
Hennepin Power Plant  
Hennepin, Illinois 61327  
Putnam County

Discharge Number and Name:

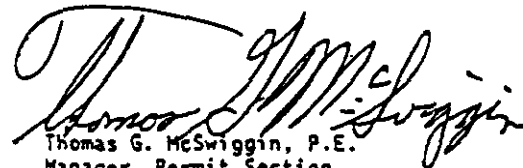
No. 001 Condenser Cooling Water  
No. 001(a) Boiler Blowdown  
No. 001(b) Intake Screen Backwash  
No. 001(c) Roof Drain Discharge  
No. 003 Ash Lagoon #2 and #4 Discharge  
No. 005 Ash Lagoon #1 and #3 Discharge  
No. 005(a) Chemical Metal Cleaning Waste Treatment System Effluent

Receiving Waters

Illinois River

In compliance with the provisions of the Illinois Environmental Protection Act, Subtitle C Rules and Regulations of the Illinois Pollution Control Board, and the FWPCA, the above-named permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.

  
Thomas G. McSwiggin, P.E.  
Manager, Permit Section  
Division of Water Pollution Control

TGM:TRK:jd/049SE/3

NPDES Permit No. IL0001554

Effluent Limitations and Monitoring

PARAMETER	LOAD LIMITS lbs/day		CONCENTRATION LIMITS mg/l		SAMPLE FREQUENCY	SAMPLE TYPE
	30 DAY AVG.	DAILY MAX.	30 DAY AVG.	DAILY MAX.		

1. From the effective date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall(s): 001 Condenser Cooling Water

- This discharge consists of:
1. Condenser Cooling Water
  2. House Service Water
  3. Boiler Blowdown
  4. Intake Screen Backwash
  5. Roof Drain Discharge

Approximate Flow  
 153.26 MGD  
 7.0 MGD  
 0.027 MGD  
 0.258 MGD  
 Intermittent

Flow					Daily	24-Hour Total
Total Residual Chlorine	See Special Condition No. 3				1/Week	"
Temperature	See Special Condition No. 4				Daily	Continuous

\*See Special Condition No. 3

Outfall(s): 001(a) Boiler Blowdown

Approximate Flow  
 0.027 MGD

Flow					1/Week	Single Reading- Estimate
Total Suspended Solids		15.0	30.0		1/Week	24-Hour Composite

NPDES Permit No. IL0001554

Effluent Limitations and Monitoring

PARAMETER	LOAD LIMITS		CONCENTRATION		SAMPLE FREQUENCY	SAMPLE TYPE
	lbs/day		LIMITS mg/l			
	30 DAY AVG.	DAILY MAX.	30 DAY AVG.	DAILY MAX.		

1. From the effective date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall(s): 001(b) Intake Screen Backwash

Approximate Flow  
0.26 MGD

Flow

1/Week

Single Reading Estimate

So as to minimize adverse impacts, for purposes of this permit, the intake structure operation and maintenance shall include, but not be limited to, the following:

1. Outer bar racks shall be routinely cleaned and collected debris properly disposed.
2. The traveling screens shall commence operating whenever the head loss across the screens exceeds four (4) inches.
3. The traveling screens shall be operated at least once per 8 hour shift, provided, however, that this requirement shall be inapplicable when the generating units are not operating.

Outfall 001(b) may be routed either to the discharge flume or directly to the Illinois River.

Outfall(s) 001(c) Roof Drain Discharge

This discharge consists of:  
1. Power Block Building Roof Drains

Approximate Flow  
Intermittent

See Standard Condition No. 17

NPDES Permit No. IL0001554

Effluent Limitations and Monitoring

PARAMETER	LOAD LIMITS lbs/day		CONCENTRATION LIMITS mg/l		SAMPLE FREQUENCY	SAMPLE TYPE
	30 DAY AVG.	DAILY MAX.	30 DAY AVG.	DAILY MAX.		

1. From the effective date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall(s): 003 Ash Lagoon #2 and #4 Discharge

This discharge consists of:

1. Unit 2 Bottom Ash and Fly Ash	Approximate Flow	2.9 MGD
2. Demineralizer Regenerate Wastes		0.035 MGD
3. Unit 2 Non-chemical Metal Cleaning Washwater		Intermittent
4. Unit #1 and Unit #2 Ash Hopper Overflow**		0.20 MGD
5. Fly Ash Air Separator Overflow		Intermittent
6. Ash Hopper Tank Emergency Overflow		Intermittent
7. Demineralizer Room Floor Drainage		Intermittent
8. Power Block Building Floor Drains and Sump Discharges		0.1 MGD
9. Reverse Osmosis Unit Concentrate		0.036 MGD

Flow			1/Week	Single Reading Estimate
pH	See Special Condition No. 1		1/Week	Grab
Total Suspended Solids	15.0	30.0	1/Week	24 Hour*** Composite
Oil and Grease	15.0	20.0	2/Month	Grab

\*\*This wastestream may be discharged to the East (Outfall 003) or West (Outfall 005) Ash Pond System.

\*\*\*See Special Condition No. 6

Effluent Limitations and Monitoring

PARAMETER	LOAD LIMITS lbs/day		CONCENTRATION LIMITS mg/l		SAMPLE FREQUENCY	SAMPLE TYPE
	30 DAY AVG.	DAILY MAX.	30 DAY AVG.	DAILY MAX.		

1. From the effective date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall(s): 005 Ash Lagoon #1 and #3 Discharge

This discharge consists of:		Approximate Flow
1. Unit #1 Bottom Ash and Fly Ash Transport Water		0.21 MGD
2. Unit #1 and #2 Ash Hopper Overflow****		0.2 MGD
3. Coal Breaker Building Drain Sump		Intermittent
4. Illinois River Dredge Spoils		Intermittent
5. Unit #1 Non-chemical Metal Cleaning Washwater		Intermittent
6. Chemical Metal Cleaning Waste Treatment System Effluent		Intermittent
7. Coal Pile Runoff		Intermittent
8. Unit #1 and Unit #2 Ash Line Low Point Drainoff		Intermittent
9. Crib House Sump		Intermittent
10. Well Water Drain Line		Intermittent
11. Water Treatment Plant Sump		Intermittent
12. Boiler Drum Chemical Tank Drainage		Intermittent
13. Gas Reburning/Sorbent Injection Waste		0.96 MGD

Flow			1/Week	Single Reading Estimate
pH	See Special Condition No. 1		1/Week	Grab
Total Suspended Solids	15.0	30.0	1/Week	24 Hr***** Composite
Oil and Grease	15.0	20.0	2/Month	Grab

\*\*\*\*This wastestream may be directed to the East Ash Pond System (Outfall 003).  
\*\*\*\*\* See Special Condition No. 6

NPDES Permit No. IL0001554

Effluent Limitations and Monitoring

PARAMETER	LOAD LIMITS lbs/day		CONCENTRATION LIMITS mg/l		SAMPLE FREQUENCY	SAMPLE TYPE
	30 DAY AVG.	DAILY MAX.	30 DAY AVG.	DAILY MAX.		

1. From the effective date of this permit until the expiration date, the effluent of the following discharge(s) shall be monitored and limited at all times as follows:

Outfall(s): 005(a) Chemical Metal Cleaning Waste Treatment System Effluent

Flow					Approximate Flow Intermittent	
					Daily When Discharging	24 Hour Total
Iron (Total)			1.0		Daily When Discharging	24 Hour Composite
Copper (Total)			1.0		Daily When Discharging	24 Hour Composite

Special Conditions

1. The pH shall be in the range 6.0 to 9.0.
2. Samples taken in compliance with the effluent monitoring requirements shall be taken at a point representative of the discharge, but prior to entry into the receiving stream.
3. A. During times when the condenser cooling water is chlorinated intermittently, total residual chlorine (TRC) may not be discharged from the station for more than three hours per day or from any single generating unit's main cooling condensers for more than two hours per day. The discharge limit is 0.2 mg/l, measured as an instantaneous maximum.
  1. Continuous TRC monitoring throughout a representative chlorination period shall be performed once per week in the cooling water discharge flume during the respective chlorination period of one condenser half allowing for lag time between the initiation of chlorination and the time of sampling. For continuous chlorine monitoring, analytical data from only two representative monitoring periods each month need be reported on the monthly discharge monitoring report. The time of sampling, the time and duration of the chlorine dosing period, and the amount of chlorine applied shall be reported.
  2. If continuous monitoring cannot be performed, a minimum of three grab samples shall be collected in the discharge flume at five minute intervals or less, once per week during a representative chlorination period, allowing for lag time between the initiation of chlorination and the time of sampling, to develop a chlorine concentration curve. The time of sampling, the time and duration of the chlorine dosing period, and the amount of chlorine applied shall be reported.
- B. During times when the condenser cooling water is chlorinated continuously, the discharge limit is 0.05 mg/l, measured as an instantaneous maximum.
- C. Chlorination of house service water is authorized by this permit, provided that the discharge limits above are not exceeded at Outfall 001.
4. Discharge of wastewater from this facility must not alone or in combination with other sources cause the receiving stream to violate the following thermal limitations at the edge of the mixing zone which is defined by Section 302.211, Illinois Administrative Code, Title 35, Chapter 1, Subtitle C, as amended:
  - A. Maximum temperature rise above natural temperature must not exceed 5°F (2.78°C).
  - B. Water temperature at representative locations in the main river shall not exceed the maximum limits in the following table during more than one (1) percent of the hours in the 12-month period ending with any month. Moreover, at no time shall the water temperature at such locations exceed the maximum limits in the following table by more than 3°F (1.67°C). (Main river temperatures are temperatures of those portions of the river essentially similar to and following the same thermal regime as the temperatures of the main flow of the river.)
 

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
°F	60	60	60	90	90	90	90	90	90	90	90	60
°C	15.6	15.6	15.6	32.2	32.2	32.2	32.2	32.2	32.2	32.2	32.2	15.6
  - C. At times when the river water intake temperature is less than or equal to 41°F, the permittee shall either (1) screen the condenser cooling water discharge flume so as to restrict the entry of fish into the discharge flume but allow the passage of fish from the flume which may have become trapped in the flume as a result of high river stage conditions, or (2) operate the condenser cooling water pumps at the cribhouse, according to the following protocol:
    - a. Whenever Unit 1 is in service, both Unit 1 circulating cooling water pumps must be operated if available, or one Unit 1 pump and one Unit 2 pump must be operated.
    - b. Whenever Unit 2 is in service, both Unit 2 circulating cooling water pumps must be operated if available.
5. There shall be no discharge of polychlorinated biphenyl compounds.

NPDES Permit No. IL0001554

Special Conditions

6. If inclement weather prohibits the collection of a 24-hour composite sample for five consecutive days, sampling shall consist of a grab sample.
7. Illinois Power Company has complied with Section 302.211(f) of Title 35, Chapter 1, Subtitle C: Water Pollution Regulations and Section 316(a) of the CWA by demonstrating that thermal discharge from Hennepin Power Plant has not caused and cannot reasonably be expected to cause significant ecological damage to the Illinois River as approved by the IPCB in PCB 78-3 on October 19, 1978. Pursuant to 35 Ill. Adm. Code 302.211(g) no additional monitoring or modification is being required for reissuance of this NPDES permit.
8. Illinois Power Company's demonstration for the Hennepin Power Plant in accordance with Section 316(b) of the CWA has been approved by this Agency by letter dated December 29, 1978. It is determined that no additional intake monitoring or modification is being required for reissuance of this NPDES permit.
9. Standard Condition No. 9 shall not constitute a waiver of any constitutional rights of the permittee.
10. The provisions contained in Standard Condition No. 17 shall not prejudice permittee's right to obtain or be granted a reasonable time in which to comply, but in no event shall such time be later than any applicable Federal or State of Illinois statutory or regulatory compliance date, in connection with any modification made pursuant thereto.
11. Standard Condition 11(a) of Attachment H is rewritten as follows:

An application submitted by a corporation shall be signed by a principal executive officer of at least the level of vice president, or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the application form originates. In the case of a partnership or a sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively. In the case of a publicly owned facility, the application shall be signed by either the principal executive officer, ranking elected official, or other duly authorized employee.
12. Standard Condition 11(b) of Attachment H is rewritten as follows:

Pursuant to 40 CFR 122.22(b) all reports required by permits, other information requested by the Director, and all permit applications submitted for Group II storm water discharges under 122.26(b)(3) shall be signed by a person described in 40 CFR 122.22(a), or by a duly authorized representative of that person. A person is a duly authorized representative only if:

  - (1) The authorization is made in writing by a person described in paragraph (a) of this section;
  - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) and
  - (3) The written authorization is submitted to the Director.
13. Disposal of GR-SI Residues in the West Ash Pond System shall be monitored and limited in accordance with the following Best Management Practices Plan:
  - a) Authorization to dispose GR-SI Residues in the West Ash Pond System is granted only for the term of the demonstration project. The Agency shall be notified on the date the demonstration project begins.
  - b) The raw residue transport water shall be pH adjusted to approximately 9.0 prior to discharge into the West Ash Pond System using carbon dioxide, acetic acid or other approved chemicals which will not contribute chlorides or sulfates to the wastestream.



NPDES Permit No. IL0001554

Special Conditions

- c) Groundwater monitoring shall be conducted during the demonstration project and for six months thereafter. Quarterly sampling of all four existing downgradient wells for Boron, Calcium, Chloride, Manganese, Nitrate, Nitrite, pH, Sulfate, Sulfite and Total Dissolved Solids is required. Analytical data shall be submitted to the Agency within 60 days after sample collection. The first samples shall be collected upon commencement of the demonstration project.
  - d) Modeling or dye tracing to identify the West Ash Pond System effluent mixing characteristics with the Illinois River shall be conducted and the point in the river where the sulfate water quality standard will be met identified. This information shall be submitted to the Agency within six months after commencement of the demonstration project.
14. Sludge generated by the pretreatment of chemical metal cleaning waste in the chemical metal cleaning waste treatment tank at Hennepin Power Plant may be disposed of on the active area of the coal pile at the Hennepin Power Plant within the following guidelines:
- 1. Chemical metal cleaning waste treatment tank sludge shall not exceed the Toxicity Characteristic regulatory levels when subjected to the Toxicity Characteristic Leaching Procedure for the 25 organic constituents and 8 metals regulated under the Toxicity Characteristic Rule (FR Vol. 55, No. 61/March 29, 1990, 11798-11877).
  - 2. Sludge shall be applied on the active area of the coal pile.
  - 3. Sludge shall be applied on the active area of the coal pile at a controlled rate to prevent coal pile runoff.
  - 4. Sludge application shall not be permitted if the coal pile has been wetted by rainfall within the 24-hour period preceding the intended application time.
  - 5. Sludge application shall not be permitted on the coal pile during precipitation or when precipitation is imminent.
  - 6. The filter cake from the portable sock filter may be disposed on site with the sludge generated by the chemical metal cleaning wastewater treatment process.
  - 7. Sludge or filter cake which is a hazardous waste shall not be placed on the coal pile.

This Special Condition does not relieve the permittee of any State or federal requirements for management of hazardous waste. Documentation to support a hazardous waste determination pursuant to 40 CFR 262.11 shall be maintained by the permittee.

15. The permittee shall record monitoring results on Discharge Monitoring Report Forms using one such form for each discharge each month.

The completed Discharge Monitoring Report forms shall be submitted to IEPA no later than the 15th day of the following month, unless otherwise specified by the permitting authority.

Discharge Monitoring Reports shall be mailed to the IEPA at the following address:

Illinois Environmental Protection Agency  
Division of Water Pollution Control  
2200 Churchill Road  
Springfield, Illinois 62706

Attention: Compliance Assurance Section

16. Within 180 days after the beginning of a discharge from the ash ponds (Outfalls 003 and 005), a 2 C application form shall be completed as required by 40 CFR 122.21(g)(7) and submitted to IEPA. The monitoring must include at least three samples for the required metals, ammonia, and cyanide. This permit may be modified, following public notice and opportunity for hearing, based on the monitoring results if necessary to prevent violations of water quality standards.

NPDES Permit No. IL0001554

Special Conditions

17. During the time period of the GR-SI demonstration project, the following additional monitoring shall be done on Outfall 005 if a discharge from this outfall occurs:

## a. Chemical-Specific Testing

On a quarterly basis, a grab sample of the discharge shall be analyzed for the following parameters, and the results reported with the Discharge Monitoring Report for the month in which the samples are collected:

Antimony	Nickel
Arsenic	Selenium
Beryllium	Silver
Cadmium	Thallium
Chromium	Zinc
Copper	Sulfates
Lead	Total Dissolved Solids
Mercury	

## b. Biomonitoring

The permittee shall prepare a preliminary plan for biomonitoring and submit the plan to IEPA for review and approval prior to any discharge from Outfall 005 related to GR-SI demonstration project. The permittee shall begin biomonitoring of the effluent discharge within 90 days after approval of the biomonitoring plan or other such date as contained in the Agency's notification letter.

1. Acute Toxicity — Standard definitive acute toxicity tests shall be run on two trophic levels of aquatic species representative of the aquatic community of the receiving stream. Except as noted here and in the IEPA document "Effluent Biomonitoring and Toxicity Assessment," testing must be consistent with Methods for Measuring the Acute Toxicity of Effluents to Aquatic Organisms EPA-600/4-85-013. Unless substitute tests are pre-approved, the following tests are required:

- a. Invertebrate 48-hour static LC<sub>50</sub> Bioassay using Ceriodaphnia.

- b. Fish 96-hour static renewal LC<sub>50</sub> Bioassay using fathead minnow.

2. Testing Frequency — The above tests shall be conducted on a monthly basis for three months within 90 days following approval of the biomonitoring plan or other such date as contained in the Agency's notification (approval) letter. Results shall be reported according to EPA/600/4-85/014, Section 10, Report Preparation, and shall be submitted to IEPA within 1 week of becoming available to the permittee.

Should the results of any two months of sampling indicate toxicity for each month, the permittee shall submit within 90 days of the second toxicity event a plan for a toxicity identification evaluation (TIE) to the Agency. The Agency should be contacted at that time.

3. Toxicity Assessment — Should the review of the results of the biomonitoring program identify toxicity, the Agency may require that the permittee prepare a plan for toxicity reduction evaluation and identification. This plan shall include an evaluation to determine which chemicals have a potential for being discharged in the plant wastewater, a monitoring program to determine their presence or absence and to identify other compounds which are not being removed by treatment, and other measures as appropriate. The permittee shall submit to the Agency its plan for toxicity reduction evaluation within 90 days following notification by the Agency. The permittee shall implement the plan within 90 days or other such date as contained in a notification letter received from the Agency.

The Agency may modify this permit during its term to incorporate additional requirements or limitations based on the results of the biomonitoring. In addition, after review of the monitoring results, the Agency may modify this permit to include numerical limitations for specific pollutants. Modifications under this condition shall follow public notice and opportunity for hearing.

c. Benthic and Sediment Monitoring

Prior to any discharge from Outfall 005 related to the GR-SI demonstration project, the permittee shall prepare a plan for benthic and sediment monitoring of the receiving stream in the immediate vicinity of Outfall 005, and submit the plan to IEPA for review and approval. The monitoring program should be designed to document any instream chemical or biological impacts from the discharge, and should include monitoring prior to, during, and after discharges associated with the GR-SI project.

18. During the winter season (December 1 - March 15), a summary of winter operating conditions shall be prepared. The summary shall include daily average and maximum "Delta T" and discharge temperatures, and shall be submitted to IEPA for review by May 15 of each year.

ATTACHMENT H  
Standard Conditions

Definitions

Act means the Illinois Environmental Protection Act, Ch. 111 1/2 IL Rev. Stat. Sec. 1001-1051 as Amended.

Agency means the Illinois Environmental Protection Agency.

Board means the Illinois Pollution Control Board.

Clean Water Act (formerly referred to as the Federal Water Pollution Control Act) means Pub. L. 92-500, as amended, 33 U.S.C. 1251 et seq.

NPDES (National Pollutant Discharge Elimination System) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318 and 405 of the Clean Water Act.

USEPA means the United States Environmental Protection Agency.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Maximum Daily Discharge Limitation (daily maximum) means the highest allowable daily discharge.

Average Monthly Discharge Limitation (30 day average) means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Discharge Limitation (7 day average) means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Aliquot means a sample of specified volume used to make up a total composite sample.

Grab Sample means an individual sample of at least 100 milliliters collected at a randomly-selected time over a period not exceeding 15 minutes.

24 Hour Composite Sample means a combination of at least 8 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period.

8 Hour Composite Sample means a combination of at least 3 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over an 8-hour period.

Flow Proportional Composite Sample means a combination of sample aliquots of at least 100 milliliters collected at periodic intervals such that either the time interval between each aliquot or the volume of each aliquot is proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot.

- (1) Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
  - (2) Duty to reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. If the permittee submits a proper application as required by the Agency no later than 180 days prior to the expiration date, this permit shall continue in full force and effect until the final Agency decision on the application has been made.
  - (3) Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
  - (4) Duty to mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
  - (5) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up, or auxiliary facilities, or similar systems only when necessary to achieve compliance with the conditions of the permit.
- (6) Permit actions. This permit may be modified, revoked and reissued, or terminated for cause by the Agency pursuant to 40 CFR 122.62. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
  - (7) Property rights. This permit does not convey any property rights of any sort, or any exclusive privilege.
  - (8) Duty to provide information. The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.
  - (9) Inspection and entry. The permittee shall allow an authorized representative of the Agency, upon the presentation of credentials and other documents as may be required by law, to:
    - (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
    - (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
    - (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
    - (d) Sample or monitor at reasonable times, for the purpose of assuring permit compliance, or as otherwise authorized by the Act, any substances or parameters at any location.
  - (10) Monitoring and records.
    - (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
    - (b) The permittee shall retain records of all monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of this permit, measurement, report or application. This period may be extended by request of the Agency at any time.
    - (c) Records of monitoring information shall include:
      - (1) The date, exact place, and time of sampling or measurements;
      - (2) The individual(s) who performed the sampling or measurements;
      - (3) The date(s) analyses were performed;
      - (4) The individual(s) who performed the analyses;
      - (5) The analytical techniques or methods used; and
      - (6) The results of such analyses.
    - (d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. Where no test procedure under 40 CFR Part 136 has been approved, the permittee must submit to the Agency a test method for approval. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to ensure accuracy of measurements.
  - (11) Signatory requirement. All applications, reports or information submitted to the Agency shall be signed and certified.
    - (a) Application. All permit applications shall be signed as follows:
      - (1) For a corporation: by a principal executive officer of at least the level of vice president or a person or persons having overall responsibility for environmental matters for the corporation;
      - (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
      - (3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.
    - (b) Reports. All reports required by permits, or other information requested by the Agency shall be signed by a person described in paragraph (a) or by a duly authorized representative of that person. A person is a duly authorized representative only if:
      - (1) The authorization is made in writing by a person described in paragraph (a); and
      - (2) The authorization specifies either an individual or a position responsible for the overall operation of the facility, from which the discharge originates, such as a plant manager, superintendent or person of equivalent responsibility; and
      - (3) The written authorization is submitted to the Agency.

- (c) Changes of Authorization. If an authorization under (b) is no longer accurate because a different individual or person has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of (b) must be submitted to the Agency prior to or together with any reports, information, or applications to be signed by an authorized representative.
- (12) Reporting requirements.
- (a) Planned Changes. The permittee shall give notice to the Agency as soon as possible of any planned physical alterations or additions to the permitted facility.
- (b) Anticipated noncompliance. The permittee shall give advance notice to the Agency of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- (c) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- (d) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
- (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR).
- (2) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR 138 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.
- (3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Agency in the permit.
- (a) Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The following shall be included as information which must be reported within 24 hours:
- (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;
- (2) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Agency in the permit to be reported within 24 hours;
- The Agency may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.
- (f) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (1)(c), (d), or (e), at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (1)(e).
- (g) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Agency, it shall promptly submit such facts or information.
- (13) Transfer of permits. A permit may be automatically transferred to a new permittee if:
- (a) The current permittee notifies the Agency at least 30 days in advance of the proposed transfer date;
- (b) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees; and
- (c) The Agency does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement.
- (14) All manufacturing, commercial, mining, and silvicultural dischargers must notify the Agency as soon as they know or have reason to believe:
- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant identified under Section 307 of the Clean Water Act; which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
- (1) One hundred micrograms per liter (100 ug/l);
- (2) Two hundred micrograms per liter (200 ug/l) for arsenic and selenic acid; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol, and one milligram per liter (1 mg/l) for antimony;
- (3) Five (5) times the maximum concentration value reported for that pollutant in the NPDES permit application; or
- (4) The level established by the Agency in this permit.
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the NPDES permit application.
- (15) All Publicly Owned Treatment Works (POTW) must provide adequate notice to the Agency of the following:
- (a) Any new introduction of pollutants into that POTW from an indirect discharger which would be subject to Sections 301 or 308 of the Clean Water Act if it were directly discharging those pollutants; and
- (b) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- (c) For purposes of this paragraph, adequate notice shall include information on (i) the quantity and quality of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
- (16) If the permit is issued to a publicly owned or publicly regulated treatment works, the permittee shall require any industrial user of such treatment works to comply with federal requirements concerning:
- (1) User charges pursuant to Section 304(b) of the Clean Water Act, and applicable regulations appearing in 40 CFR 35;
- (2) Toxic pollutant effluent standards and pretreatment standards pursuant to Section 307 of the Clean Water Act; and
- (3) Inspection, monitoring and entry pursuant to Section 308 of the Clean Water Act.
- (17) If an applicable standard or limitation is promulgated under Section 301(b)(2)(C) and (D), 304(b)(2), or 307(a)(2) and that effluent standard or limitation is more stringent than any effluent limitation in the permit, or controls a pollutant not limited in the permit, the permit shall be promptly modified or revoked, and reassued to conform to that effluent standard or limitation.
- (18) Any authorization to construct issued to the permittee pursuant to 35 Ill. Adm. Code 309.154 is hereby incorporated by reference as a condition of this permit.
- (19) The permittee shall not make any false statement, representation or certification in any application, record, report, plan or other document submitted to the Agency or the USEPA, or required to be maintained under this permit.
- (20) The Clean Water Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307, or 308 of the Clean Water Act is subject to a fine of not less than \$2,500, nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both.
- (21) The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (22) The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit shall, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (23) Collected screenings, slurries, sludges, and other solids shall be disposed of in such a manner as to prevent entry of those wastes or runoff from the wastes into waters of the State. The proper authorization for such disposal shall be obtained from the Agency and is incorporated as part hereof by reference.
- (24) In case of conflict between these standard conditions and any other condition(s) included in this permit, the other condition(s) shall govern.
- (25) The permittee shall comply with, in addition to the requirements of the permit, all applicable provisions of 35 Ill. Adm. Code, Subtitle C, Subtitle D, Subtitle E, and all applicable orders of the Board.
- (26) The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit is held invalid, the remaining provisions of this permit shall continue in full force and effect.

## **APPENDIX C**

TABLE 2. HENNEPIN PROJECT MONITORING IN PHASE III  
page 2 of 3

MEASUREMENT	SAMPLE TYPE	FREQUENCY	LOCATION
<b>GASEOUS EMISSIONS</b>			
Particulate Loading	Method 17 Method 5 cascade impactors	(4) (4) (4)	ESP inlet ESP outlet ESP inlet and outlet
Particle Size Distribution	cyclonic flow probe extractive	(4) (5)	ESP inlet stack breeching
Resistivity N2O			
<b>SOLID BY-PRODUCTS</b>			
Ash (6)	composite of	(7)	bottom ash hopper, economizer, and ESP hoppers #1 and #2
<b>WORKER HEALTH</b>			
Hearing	N/A	once/yr	TBD
Pulmonary Function	N/A	once/yr	TBD
TSP	N/A	once/yr	TBD
<b>AIR</b>			
Noise	single reading	once (4)	near equipment installation
Ambient Dust	single reading-Hi-Volume Sampler	once (4)	upwind and downwind of sorbent silo

TABLE 2. FOOTNOTES- HENNEPIN PROJECT MONITORING IN PHASE III

page 3 of 3

1. Monitoring will occur once prior to GR-SI operation, quarterly until the program is completed, and quarterly through closure and post-closure periods.
2. Water will be analyzed for arsenic, barium, boron, cadmium, chromium, iron, lead, mercury, oil and grease, pH, selenium, silver, sulfates, TDS, TSS, zinc, and flow rate.
3. Sampling will be conducted once prior to Phase III, then monthly for the first six months of long-term testing.
4. Measurements will be taken once prior to Phase III, then once during long term testing.
5. Samples will be collected once prior to Phase III, and once during long-term testing. Additional testing will then be done if the N2O concentration is greater than 5 ppm.
6. Ash will be monitored for mineral analysis, free CaO, total organic carbon, sulfate, COD, phenol, cyanide, nitrate, chloride sulfide, specific gravity, fineness, pozzolanic activity, soundness, PAH and pH. Paint filter and TCLP tests will also be conducted.
7. Sampling will be conducted once prior to Phase III. During long-term testing sampling and analysis will be conducted monthly for the first 3 months.
8. Sampling will occur once prior to Phase III, and CEM data will be reported during long-term testing.