SIERRA CLUB PETITION

EXHIBIT 1

217/782-2113

CONSTRUCTION PERMIT - PSD APPROVAL
NSPS EMISSION UNITS

PERMITTEE

Power Holdings of Illinois, LLC
Attn: Joseph Darguzas
2112 West Galena Boulevard
Aurora, Illinois 60506

Application No.: 07100063 I.D. No.: 081801AAF
Applicant's Designation: SNG PLANT Date Received: October 18, 2007
Subject: Synthetic Natural Gas Plant
Date Issued: October 26, 2009
Location: Tomahawk Lane, 5 miles south of Illinois Route 15, west of Waltonville

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source and air pollution control equipment consisting of a plant to produce synthetic natural gas (SNG) by gasification of coal, including six gasifiers, two gas processing trains (including synthesis gas cleanup units and methanation units), two sulfuric acid plants, two steam superheaters, a cooling tower, an auxiliary boiler, feedstock storage and handling, and other ancillary operations, as described in the above referenced application. This Permit is granted based upon and subject to the findings and conditions that follow.

In conjunction with this permit, approval is given with respect to the federal regulations for Prevention of Significant Deterioration of Air Quality (PSD) for the plant, as described in the application, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the federal Clean Air Act, the federal regulations promulgated thereunder at 40 CFR 52.21 for Prevention of Significant Deterioration of Air Quality (PSD), and a Delegation of Authority agreement between the United States Environmental Protection Agency (USEPA) and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with provisions of 40 CFR 124.19. This approval is based upon the findings that follow. This approval is subject to the following conditions. This approval is also subject to the general requirement that the plant be developed and operated consistent with the specifications and data included in the application and any significant departure from the terms expressed in the application, if not otherwise authorized by this permit, must receive prior written authorization from the Illinois EPA.

If you have any questions on this permit, please call Bob Smet at 217/782-2113.

ORIGINAL SIGNED BY EDWIN C. BAKOWSKI OCTOBER 26, 2009

Edwin C. Bakowski, P.E. Date Signed: _____
Manager, Permit Section
Division of Air Pollution Control

ECB:RPS:psj

cc: Region 3
USEPA Region V

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SECTION 1: FINDINGS

1a. Power Holdings of Illinois, LLC (Power Holdings) has requested a permit for a plant that would produce synthetic natural gas (SNG) by gasification of coal. The proposed plant would have six gasifiers and two gas processing trains with heat recovery and gas cleaning systems and associated emission control devices. Other emission units would include two sulfuric acid plants, two steam superheaters, an auxiliary boiler, a cooling tower, feedstock handling and storage and ancillary operations.

b. Each of the gasifiers would have a nominal design capacity of about 2,630 tons of coal per day. The design coal supply for the plant would be Illinois No. 6 coal from mines in Illinois containing 3.25 percent sulfur by weight and 11,090 Btu per pound higher heating value, on an as-received basis. Alcohol would be used as the startup feedstock for the gasifiers.

2. The plant would be located in rural Jefferson County, between Waltonville and Ashly. The site is in an area that is designated attainment for all criteria pollutants.

3. The proposed plant is a major source under the PSD rules. This is because the potential annual emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x) and carbon monoxide (CO) will each be in excess of 100 tons. In addition, emissions of particulate matter ($PM/PM_{10}/PM_{2.5}$) and sulfuric acid mist will be in excess of their significant emission thresholds of 25/15/10 and 7 tons per year, respectively. (Refer to Attachment I for the potential emissions of the plant.)

4. The proposed plant is not a major source for emissions of hazardous air pollutants (HAPs), i.e., as limited by this permit, the potential emissions from the plant will be less than 10 tons of an individual HAP (e.g., methanol), and will be less than 25 tons in aggregate for all HAPs. Therefore, the plant is not subject to National Emission Standards for Hazardous Air Pollutants (NESHAP), adopted by USEPA under 40 CFR Part 63 or to review under Section 112(g) of the federal Clean Air Act.

5a. After reviewing the materials submitted by Power Holdings, the Illinois EPA has determined that the project will (i) comply with applicable Board emission standards, (ii) comply with applicable federal emission standards, and (iii) utilize Best Available Control Technology (BACT) on emissions as required by PSD.

b. The determinations of BACT made by the Illinois EPA for the proposed plant are the control technology determinations contained in the permit conditions for specific emission units.

6a. The air quality analysis submitted by Power Holdings and reviewed by the Illinois EPA shows that the proposed project will not cause or contribute to violations of the national ambient air quality standard (NAAQS) for NO_x, SO_2, PM_{10} and CO or the allowable air

quality increments established under the PSD rules. This analysis also enables the Illinois EPA to conclude that this project will not cause or contribute to violations of the NAAQS for $PM_{2.5}$.

b. Power Holdings also submitted a screening analysis addressing the impacts of the project on air quality in Mammoth Cave National Park and the Wilderness Area at the Mingo Wildlife Refuge, which are located approximately 160 kilometers southwest and 270 kilometers southeast, respectively, of the site of the proposed plant. This analysis indicated that the plant will not violate the Class I air quality increments applicable in the areas. The Illinois EPA has determined, based on the assessment submitted by Power Holdings, that the proposed plant would not have an adverse impact on air quality values in these areas.

7. The Illinois EPA has determined that the application for the proposed plant complies with all applicable Illinois Air Pollution Regulations and the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21.

8. A copy of the application, the project summary prepared by the Illinois EPA, a draft of this construction permit was placed in a nearby public repository, and the public was given notice and opportunity to examine this material and to participate in a public hearing and to submit comments on these matters.

SECTION 2: IDENTIFICATION OF SIGNIFICANT EMISSIONS UNITS

Section	Emission Units	Emission Controls
4.1	Gasification Block – Normal Operation	Syngas cleanup (particulate, mercury and sulfur removal) and Oxidizers
	Gasification Block - Startup/Shutdown/Malfunction	Good operating practices Flare minimization and proper flaring
4.2	Steam Superheaters	Fuel Selection Good combustion practices Selective catalytic reduction systems
	Auxiliary Boiler	Fuel Selection Low–NO_x burners and flue gas recirculation Good combustion practices
4.3	Startup Burners	Good combustion practices
4.4	Sulfuric Acid Plants	Selective catalytic reduction system Hydrogen peroxide scrubber
	Sulfuric Acid Storage Tanks	Vent control system
4.5	Cooling Tower	High-efficiency drift eliminators
4.6	Alcohol Storage Tanks	Internal floating roof
4.7	Material Handling	Equipment design, enclosure and filters
4.8	Roadways	Paving and fugitive dust control program
4.9	Leaking Components	Leak detection and repair program

SECTION 3: SOURCE-WIDE PERMIT CONDITIONS

CONDITION 3.1: EFFECT OF PERMIT

a. This permit does not relieve the Permittee of the responsibility to comply with all local, state and federal regulations that are part of the applicable Illinois' State Implementation Plan, as well as all other applicable federal, state and local requirements.

b. In particular, this permit does not relieve the Permittee from the responsibility to carry out practices during the construction and operation of the plant, such as application of water or dust suppressant sprays to unpaved traffic areas, as necessary to minimize fugitive dust and prevent an air pollution nuisance from fugitive dust, as prohibited by 35 IAC 201.141.

CONDITION 3.2: VALIDITY OF PERMIT AND COMMENCEMENT OF CONSTRUCTION

a. This permit shall become invalid if construction is not commenced within 18 months after this permit becomes effective, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable period of time, pursuant to 40 CFR 52.21(r)(2) and 40 CFR 63.43(g)(41). Illinois EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This condition supersedes Standard Condition 1.

b. For purposes of the above provisions, the definitions of "construction" and "commence" at 40 CFR 54.21 (b)(8) and (9) shall apply, which requires that a source must enter into a binding agreement for on-site construction or begin actual on-site construction. (See also the definition of "begin actual construction," 40 CFR 54.21 (b)(11).)

CONDITION 3.3: EMISIONS OF HAZARDOUS AIR POLLUTANTS (HAPs)

a. This permit is issued based on this plant not being a major source of hazardous air pollutants (HAPs), i.e., the emissions of individual HAPs will each be less than 10 tons per year and the total emissions of HAPs will be less than 25 tons per year so that the provisions of 40 CFR Part 63, and Section 112(g) of the Clean Air Act do not apply to this source. (Refer to the unit-specific conditions of this permit for further limits on HAP emissions.)

b. The emissions of lead and mercury from the plant shall not exceed 0.050 and 0.0005 tons/year, respectively.

c. The Permittee shall keep records of the annual emissions of HAPs from the plant to demonstrate that the plant is not a major source or emissions of HAPs. These records shall be compiled on at least an annual basis and the results reported to the Illinois EPA with the Annual Emission Reports that the Permittee must submit for the plant pursuant to 35 IAC Part 254.

CONDITION 3.4: MISCELLANEOUS ANCILLARY EQUIPMENT

a. i. A. The fuel fired in emergency engines and engines/generators shall be natural gas or very low sulfur diesel fuel.

B. Engines firing fuels other than natural gas shall only be used as emergency equipment, as defined at 35 IAC 211.1920.

C. The power output of engines firing fuels other than natural gas shall be no more than 1,500 horsepower.

D. The operation of engines firing fuels other than natural gas shall not exceed 500 hours per year, provided, however, that the Illinois EPA may authorize temporary operation of engines in excess of 500 hours per year to address extraordinary circumstances that require operation of this device, by issuance of a separate state construction permit addressing such circumstances.

E. Emission from the engines shall not exceed the limits in Attachment I.

ii. This permit is issued based on negligible emissions of VOM and PM from storage tanks not addressed in Section 4.6 of this permit, including diesel fuel and ammonia storage tanks. For this purpose, VOM emissions from each tank shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.

iii. This permit is issued based on negligible emissions of each criteria pollutant from the wastewater treatment plant. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.

iv. All ancillary equipment shall be operated and maintained in accordance with good air pollution control practice to minimize emissions (See also Condition 3.5.)

Note: These requirements constitute the determination of Best Available Control Technology (BACT) for ancillary equipment, as required under the PSD rules.

b. i. Ancillary equipment shall comply with all applicable emission standards and control requirements of applicable federal New Source Performance Standards (NSPS), 40 CFR Part 60, including the NSPS for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII, for the engines at the plant.

ii. Ancillary equipment shall comply with all applicable emission standards and control of requirements of applicable state emission regulations at Title 35, Subtitle B, Chapter I, Subchapter c.

iii. The Permittee shall fulfill applicable requirements of applicable regulations, including provisions for testing, monitoring, recordkeeping, notification and reporting, for ancillary equipment

CONDITION 3.5: GOOD AIR POLLUTION CONTROL PRACTICES

The Permittee shall operate and maintain all emission units at this plant, including associated air pollution control equipment, in a manner consistent with good air pollution control practice, as follows:

a. At all times, including periods of startup, shutdown, malfunction or breakdown, operate as practicable to minimize emissions.

b. Conduct routine inspections and perform appropriate maintenance and repairs to facilitate proper functioning of equipment and minimize or prevent malfunctions and breakdowns.

c. Install, calibrate and maintain required monitoring devices and instrumentation in accordance with good monitoring practices, following the manufacturer's recommended operating and maintenance procedures or such other procedures as otherwise necessary to assure reliable operation of such devices.

CONDITION 3.6: COMPLIANCE WITH EMISSION LIMITATIONS

a. In this permit, except as otherwise specified in a particular provision, the emission limitations for "particulate matter" or "PM" shall apply to particulate matter as would be measured by USEPA Reference Method 5, rather than to PM_{10} or $PM_{2.5}$. The limitations for PM emissions also serve to limit emissions of PM_{10} and $PM_{2.5}$, as measured by applicable USEPA methods for measurement of filterable emissions, since filterable PM_{10} and filterable $PM_{2.5}$ are a subset of PM. Emissions of condensable particulate matter are addressed by limitations that are set for emissions of sulfuric acid mist.

b. i. Except as provided below or unless otherwise specified in a particular provision, compliance with annual limitations established by this permit shall be determined from a running total of 12 months of data, i.e., from the sum of the data for the current month and data for the preceding 11 months (12 month total).

ii. For the first year (12 months) of operation, compliance shall be determined for a cumulative total of monthly data, i.e. from the sum of the data for the current month and data for all preceding months.

CONDITION 3.7: RECORDS FOR MONITORING SYSTEMS AND INSTRUMENTATION

a. The Permittee shall keep records of the data measured by required monitoring systems and instrumentation. Unless otherwise provided

in a particular condition of this permit, the following requirements shall apply to such recordkeeping:

i. For required monitoring systems, data shall be automatically recorded by a central data system, dedicated data logging system, chart recorder or other data recording device. If an electronic data logging system is used, the recorded data shall be the hourly average value of the particular parameter for each hour. During periods when the automatic recording device is out of service, data shall be recorded at least once per shift for periods when the associated emission unit(s) are in service.

ii. For required instrumentation, the measured data shall be recorded manually at least once per day, unless otherwise specified, with data and time both recorded, for periods when the associated emission unit(s) are in service, provided however that if data from an instrument is recorded automatically, the above provisions for recording of data from monitoring systems shall apply and manual recording of data is not required.

b. The Permittee shall keep records for the operation, calibration maintenance and repair of required monitoring systems and instrumentation. These operating records shall, at a minimum, identify the date and duration of any time when a required monitoring instrument or device for an affected flare was not in operation, with explanation; the performance of manual quality control and quality assurance procedures for the system, and maintenance and repair activities performed for the system.

c. The Permittee shall maintain a file containing a copy of the specifications for each required monitoring device or instrument and the recommended operating and maintenance procedures for the device as provided by its manufacturer.

CONDITION 3.8: RECORDS FOR OPACITY MEASUREMENTS

a. The Permittee shall keep records for all opacity measurements made in accordance with USEPA Method 9 for emission units at the plant that it conducts or that are conducted on its behest by individuals who are qualified to make such observations. For each occasion on which such measurements are made, these records shall include the formal report for the measurements if conducted pursuant to this permit or a request from the Illinois EPA, or otherwise the identity of the observer, a description of the measurements that were made, the operating condition of the affected operations, the observed opacity, and copies of the raw data sheets for the measurements.

CONDITION 3.9: RETENTION AND AVAILABILITY OF RECORDS

a. The Permittee shall retain all records and logs required by this permit for at least five years from the date of entry (unless a longer retention period is specified by a particular provision),

keep the records at a location at the plant that is readily accessible to the Illinois EPA and USEPA, and make records available for inspection and copying by the Illinois EPA or USEPA upon request.

b. The Permittee shall retrieve and print on paper during normal plant office hours any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a plant inspection.

CONDITION 3.10: ADDRESSES FOR THE ILLINOIS EPA

a. Any required reports and notifications shall be sent to the Illinois EPA at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance and Enforcement Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

Telephone: 217/782-5811 Fax: 217/524-4710

b. A copy of all required reports and notifications, except the Annual Emission Report required by 35 IAC Part 254, shall also be sent to the Illinois EPA Air Regional Field Office at the following address:

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

Telephone: 618/346-5120 Fax: 618/346-5155

CONDITION 3.11: AUTHORIZATION TO OPERATE EMISSION UNITS

a. i. Under this permit, each gasifier, gas processing train, and sulfuric acid plant may be operated for a period that ends 365 days after initial startup to allow for equipment shakedown and required emissions testing. This period may be extended by Illinois EPA upon request of the Permittee if additional time is needed to complete shakedown or perform emission testing.

ii. The remainder of the plant, excluding the above units, may be operated under this construction permit for a period of 365 days after initial startup of the first gasifier. This period of time may be extended by the Illinois EPA for up to an additional 365 days upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties experienced during shakedown of the plant.

iii. In addition, the auxiliary boiler may be operated at up to 10 percent of capacity annual average (i.e., 127.4 mmBtu/hour, annual average), during construction of the plant, when it

would be used to protect equipment from freezing and provide comfort heating.

b. Upon successful completion of required emission testing, the Permittee may continue to operate emission units as allowed by Section 39.5(5) of the Environmental Protection Act.

c. These conditions supersede Standard Condition 6.

CONDITION 3.12: STANDARD CONDITIONS

Standard conditions for issuance of construction permits, attached hereto and incorporated herein by reference, shall apply to this project, unless superseded by other conditions in the permit. (Refer to Attachment 2.)

SECTION 4: UNIT-SPECIFIC CONDITIONS FOR PARTICULAR EMISSION UNITS

CONDITION 4.1: UNIT-SPECIFIC CONDITIONS FOR THE GASIFICATION BLOCK

4.1.1 Description of Emission Units

The affected emissions units for the purpose of these unit-specific permit conditions are the units in the gasification block.

The gasification block would have six identical gasifiers to convert coal into a synthesis gas or "syngas". The raw syngas from the gasifiers would then undergo a series of processes to remove contaminants from the gas and prepare it for conversion into synthetic natural gas (SNG). These cleanup processes would remove: 1) particulate matter; 2) mercury; and 3) sulfur compounds, primarily hydrogen sulfide (H_2S) from the raw syngas. The gasification block would also include the methanation units in which cleaned syngas would be converted into methane, which is the principal constituent of natural gas.

The first step in the cleanup of raw syngas would be the particulate removal system for each gasifier. Further cleanup of the raw syngas would take place in separate gas processing or gas cleanup trains. The gasification block would have two parallel gas processing trains, each designed to handle the raw syngas output from three gasifiers. During maintenance or other outage of one gas processing train, the plant would continue to operate at half capacity with the other train. In each gas processing train, a carbon bed would remove mercury from the raw syngas. Sulfur compounds would be removed in Acid Gas Removal (AGR) units. These sulfur compounds would be converted to sulfuric acid, which would be a secondary product from the plant. The sulfuric acid plants are addressed in Section 4.4 of this permit.

The main emission points from the gasification block during normal operation, if carbon dioxide (CO_2) from the gasification block is not otherwise utilized, would be the atmospheric vents from the AGR units. In addition to removing sulfur compounds from the raw syngas, which are sent to the sulfuric acid plants, the AGR units also remove CO_2 from the raw syngas. The CO_2 streams from the AGR units would pass through regenerative thermal oxidizers to control the carbon monoxide (CO) and volatile organic material (VOM) present in these streams, before they are vented. These oxidizers would also convert the remaining sulfur compounds present in these streams to sulfur dioxide (SO_2).

During startup, shutdown and certain upsets of a gasifier or a gas processing train, the gasification block would also have emissions from one or more of the flare systems serving the gasification block. Each gas train would have two flare systems, one for flaring any releases of syngas from the train and the other for flaring any releases of H_2S laden acid gas from the AGR unit. Emissions from flaring associated with startup of gasifiers would be minimized as alcohol would be used as the startup feedstock to bring the gasifier

up to normal operating pressure before coal is fed into the gasifier. The emissions from flaring would also be minimized through appropriate planning and remedial action to prevent and minimize events that would otherwise necessitate flaring. In addition, flared syngas should typically have undergone cleaning prior to flaring. During normal operation of the gasification block, the only emissions from the flares would be from the pilot burners and flow of purge gas to the flares, which are needed to safely maintain flares in readiness to ignite and combust any syngas or acid gas (i.e., process gases) that are sent to the flares.

The gasification block would also have emissions from the natural gas fired burners that are used during the preheat step for each gasifier and certain units in the gas processing trains. The refractory lining in a gasifier must be preheated to operating temperature prior to introduction of alcohol startup feedstock. The catalyst beds in the CO shift and methanation units must also be preheated to operating temperature before syngas is introduced into these units. The natural gas-fired preheat burners would be vented through separate preheat vents that would only be open during preheating. Because the emissions of these preheat burners would be those associated with normal combustion of natural gas, these burners are addressed in Section 4.3 of this permit, rather than here in Section 4.1 with the gasification block.

4.1.2 Control Technology Determination

a. The gasification block shall be designed, equipped and maintained with the following features to minimize and control emissions.

   i. Gas cleanup systems for the raw syngas for removal of:

      A. Particulate Matter (PM); and

      B. Sulfur compounds, which shall be conducted with an absorption solvent such as Rectisol solvent or other comparable absorption solvent;

   ii. Vent systems so that any discharge of process gas (i.e., syngas or acid gas streams) from the gasifiers or gas cleanup units that is not sent to a methanation unit, sulfuric acid plant, or otherwise used can be vented to a combustion device (flare, oxidizer, or other combustion unit) for disposal. This requirement does not apply to exhaust from the preheating of gasifiers and process units (as addressed in Section 4.3 of this permit) or to air or nitrogen introduced into a unit during periods when a unit is shut down, as might be needed to purge the unit in preparation for maintenance or startup.

   iii. Oxidizers or other combustion units to control carbon monoxide and organic compounds in the CO_2 vent streams from the acid gas removal (AGR) units.

iv. Flares shall be fitted with an automatic igniter device for the pilot flame, which device shall be maintained in good working order.

b. The gasification block shall be operated to comply with the following work practices:

i. All discharges of process gas to the atmosphere shall be vented to a flare, oxidizer, or other combustion device through a closed vent system, except during preheat operations (as addressed in Section 4.3 of this permit) or when a failure of equipment or planning preclude the safe disposal of a gas stream in this manner.

ii. The operating level of gasifiers at any time shall not exceed the actual working capacity of the gas processing trains at the time.

iii. Process gas shall not be flared except during startup, shutdown, or malfunction due to either failure of equipment or planning, which precludes the safe handling of the raw gas by the gas processing trains.

iv. All acid gas streams produced by cleanup of syngas shall be processed by a sulfuric acid plant (See Section 4.4) except in the event of startup, shutdown or malfunction, when acid gas streams shall be flared.

v. Emissions from startup of gasifiers shall be minimized by use of natural gas to preheat a gasifier prior to introduction of feedstock into the gasifier, use of alcohol during startup of a gasifier prior to introduction of solid feedstock into the gasifier, and coordination with the startup and operation of the gas processing trains.

vi. Flares shall be operated to comply with all relevant requirements of 40 CFR 60.18.

vii. Only natural gas or SNG shall be used as fuel for the pilot burners for the flares.

c. The good air pollution control practices used for the gasification block to minimize emissions, including flaring and its associated emissions, shall include the following:

i. Operation of emission units in accordance with written operating procedures that include startup, shutdown and malfunction plan(s), as further addressed in Condition 4.1.5-2.

ii. Inspection, maintenance and repair of units in accordance with written maintenance procedures, as further addressed in Condition 4.1.5-2.

iii. Implementation of flare minimization planning, as further addressed in Condition 4.1.5-3.

d. i. The emissions of SO_2, NO_x, CO, PM and sulfuric acid mist from the flares in the gasification block shall not exceed the annual limitations in Condition 4.1.6(a), effective one year after the shakedown of the gasification block is complete. For the purpose of determining compliance with the limitation for CO, emissions shall be determined from the CO content of flared process gas using a destruction efficiency of no more that 99 percent for a properly operating flare.

ii. The emissions of SO_2, NO_x, CO, PM and sulfuric acid mist from the AGR units in the gasification block (i.e., the exhaust from the oxidizers on the CO_2 vents from the AGR units) shall not exceed the hourly limitations in Condition 4.1.6(b).

Note: These conditions set “secondary” BACT limits for the units in the gasification block to accompany the equipment and work practice requirements established as BACT in Condition 4.1.2(a), (b) and (c).

4.1.3 Applicable State Emission Standards

Affected units are subject to the following state emission standards.

a. The emission of smoke or other particulate matter from an emission unit shall not have opacity greater than 30 percent, pursuant to 35 IAC 212.123(a), except as authorized 35 IAC Part 201 Subpart I.

b. The emissions of SO_2 into the atmosphere shall not exceed 2000 ppm, pursuant to 35 IAC 214.301.

c. Notwithstanding Conditions 4.1.3(a) and (b), the Permittee is authorized pursuant to 35 IAC 201.149, 201.161 and 201.262 to operate the affected flares in violation of the applicable standards in 35 IAC 212.123(a) and 214.301 (Condition 4.1.3(a) and (b)) during malfunction or breakdown. This authorization is subject to the following terms and conditions.

i. This authorization only allows such continued operation as necessary to prevent risk of injury to personnel or severe damage to equipment, provided however, that operation shall not continue solely for the economic benefit of the owner or operator of the plant. As provided by 35 IAC 201.265, this authorization does not shield the source from enforcement for any such violation

and shall only constitute a prima facie defense to such an enforcement action, provided that the Permittee has fully complied with all terms and conditions connected with such authorization.

ii. The Permittee shall operate and maintain the affected flares in accordance with a Startup, Shutdown and Malfunction Plan, as further addressed by Condition 4.1.5-2.

iii. Upon occurrence of excess emissions due to malfunction or breakdown, the Permittee shall as soon as practicable, repair the unit(s) that are responsible or remove unit(s) from service, so that excess emissions cease. For this purpose, if the Permittee has operated and maintained the equipment and associated air pollution control equipment so that malfunctions and breakdowns are infrequent, sudden, and not caused by poor maintenance or careless operation, and in general are not preventable, the Permittee shall begin shutdown of equipment within 4 hours unless the malfunction is expected to be repaired within 6 hours. In such case, the shutdown of the affected plant shall be undertaken when it is apparent that the repair will not be accomplished within 6 hours.

iv. The Permittee shall fulfill applicable recordkeeping and reporting requirements of Conditions 4.1.10(c) and (d) and 4.1.11(c).

4.1.4 Non-applicability Provisions

a. This permit is issued based on affected units not being subject to state emission standards for fuel combustion emission units because the units are chemical process units and any recovery of heat from the units is incidental to this function.

b. This permit does not address the control requirements of 35 IAC 215.301, Use of Organic Material, for affected units, as any emissions of organic material directly from such units are to be flared, which will assure compliance with the alternative standard of 35 IAC 215.302, providing at least 85 percent control of emissions of organic material.

4.1.5-1 Operating Requirements

a. The amount of solid feedstock fed to the gasification block shall not exceed 15,800 tons per day, weekly average and 5,000,000 tons/year.

b. The total flow of pilot gas to each flare in the gasification block shall not exceed 6,240 scf per day, 30-day rolling average.

c. Each gas processing train shall be designed, equipped and maintained with an activated carbon bed for removal of mercury from the raw syngas.

4.1.5-2 Startup, Shutdown and Malfunction Plans

a. i. The Permittee shall develop, implement, and maintain written Startup, Shutdown, and Malfunction Plans (Plans) that describe, in detail, procedures for operating and maintaining the various emission units in the gasification block, including associated emission control systems, during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process, air pollution control and monitoring equipment used to comply with the relevant emission standards and emission control requirements. These Plans shall be developed to satisfy the purposes set forth in 40 CFR 63.6(e)(3)(i)(A), (B) and (C) as amended April 20, 2006. In this regard, with respect to startups, these Plans shall address readily foreseeable startup scenarios, including so called “hot startups” when the operation of a gasifier or gas train, is only temporarily interrupted. With respect to malfunction, these Plans shall identify and address likely malfunction events with specific programs of corrective actions, and provide that upon occurrence of a malfunction that will result in a deviation, that the Permittee shall, as soon as practicable, repair the affected equipment, reduce the operating rate of the gasifiers or remove gasifiers from service to so that the deviation ceases.

ii. For the purpose of this condition and other conditions of this permit for which the regulatory definitions of the terms “startup,” “shutdown” and “malfunction” under the NSPS are not applicable, the definitions of the terms “startup,” “shutdown” and “malfunction” under the NESHAP, at 40 CFR 63.2 (as amended April 20, 2006), shall apply and be used. In addition, as related to the scope of the Startup Shutdown and Malfunction Plan, the term “malfunction” shall also address and apply to failures of equipment that could reasonably be preventable and that may be attributable to poor maintenance or careless operation, and shall not be restricted to malfunctions as defined by 40 CFR 63.2. Similarly, requirements for recordkeeping, notification and reporting related to malfunctions shall be applicable for failures of equipment irrespective of the cause of such failure.

Note: Although the plant is not a major source of HAPs for purposes of Section 112 of the Clean Air Act, this permit refers to provisions of the federal NESHAP to establish appropriate work practices for the startup, shutdown and malfunction of emission units in the gasification block.

b. The Permittee shall at all times, including periods of startup, shutdown, and malfunction as defined at 40 CFR 63.2, operate and maintain units in the gasification block, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions to the levels required by the applicable standards and limits or comply with the applicable Plan, as provided below. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Illinois EPA and USEPA, which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the Plan), review of operation and maintenance records, and inspection of units. [Reflects 40 CFR 63.6(e)(1)(i) as amended April 20, 2006]

i. During periods of startup, shutdown, and malfunction of unit(s) in the gasification block, the Permittee shall operate and maintain such unit(s), including associated air pollution control and monitoring equipment, in accordance with the procedures specified in the applicable Plan. The Permittee shall correct malfunctions as soon as practicable after their occurrence in accordance with the Plan. To the extent that an unexpected event arises during a startup, shutdown, or malfunction, the Permittee shall comply by minimizing emissions during such event consistent with safety and good air pollution control practices. [Reflects 40 CFR 63.6(e)(1)(ii) and (3)(ii) as amended April 20, 2006]

ii. When actions taken by the Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the applicable Plan, the Permittee shall keep records for that event which demonstrate that the procedures specified in the Plan were followed. In addition, the Permittee shall keep records of these events as specified in 40 CFR 63.10(b), including records of the occurrence and duration of each startup, shutdown, or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Furthermore, the Permittee shall confirm in the periodic compliance report (refer to Condition 4.1.11(b) that actions taken during periods of startup, shutdown, and malfunction were consistent with the Plan. [Reflects 40 CFR 63.6(e)(3)(iii) as amended April 20, 2006]

iii. If an action taken by the Permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) of unit(s) is not consistent with the procedures specified in the applicable Plan, and the unit(s) exceeds a relevant emission standard or limit, then the Permittee must record the actions taken for that

event and must promptly report such actions as specified by 40 CFR 63.6(d)(5), unless otherwise specified elsewhere in this permit or when superseded in the CAAPP Permit for the plant. [Reflects 40 CFR 63.6(e)(3)(iv) as amended April 20, 2006]

c. i. The Permittee shall develop its initial Plans prior to the initial startup of the gasification block. The Permittee shall make changes to the Plan if required by the Illinois EPA or necessary to satisfy the requirements of this permit or address other changes to procedures for the gasification block. [Reflects 40 CFR 63.6(e)(3)(vii) and (viii) as amended April 20, 2006]

ii. This Plan is a record required by this permit, which the Permittee must retain in accordance with the general requirements for retention and availability of records. In addition, when the Permittee revises the Plan, the Permittee must also retain and make available the previous (i.e., superseded) version of the Plan for a period of at least 5 years after such revision. [Reflects 40 CFR 63.6(e)(v) and 40 CFR 63.10(b)(1) as amended April 20, 2006]

d. Consistent with the above, if the Permittee has maintained and operated the gasification block so that malfunctions are infrequent, sudden, not caused by poor maintenance or careless operation, and in general are not reasonably preventable, the Permittee shall begin shutdown of gasifiers within 4 hours, unless the malfunction is expected to be repaired within 6 hours. In such case, shutdown shall be undertaken when it is apparent that repair will not be accomplished within 6 hours or at a later time if shutdown will endanger the safety of plant personnel or cause severe damage to equipment. In no case shall shutdown of gasifiers be delayed solely for the economic benefit of the Permittee.

4.1.5-3 Flaring Minimization Planning

a. The flaring minimization planning conducted by the Permittee for the gasification block pursuant to Condition 4.1.2(c)(iii) shall include the preparation and maintenance of Flare Minimization Plans (Plans) for the gasification block that include the following:

i. Technical information for the gasification block, including a general description of the gasification block, including process flow diagram(s) depicting all process units; detailed process flow diagram(s) for the affected flares, including process gas lines, knockout pots, surge drums, seal drums, and other significant components of the flares.

ii. A general description of the Permittee’s written procedures for the operation of the gasification block.

iii. A detailed description of the Permittee’s procedures for flaring due to occurrence of process upsets or equipment failures or other reasons, including the provisions in these procedures that act to minimize flaring.

iv. A detailed description of the Permittee’s procedures to minimize flaring in conjunction with the startup and shutdown of equipment.

v. A general description of the Permittee’s procedures for preventative maintenance of equipment in the gasification block, including the provisions in these procedures that should act to minimize flaring.

vi. A description of the established responsibilities of different personnel at the plant for the operation and maintenance of the gasification block.

vii. A detailed description of the Permittee’s procedures for periodic evaluation of flaring activity generally and specific evaluation of flaring incidents, including identification of the causes of flaring, assessment of measures to eliminate or reduce such flaring, and implementation of feasible measures to reduce flaring.

viii. An evaluation of preventative measures to reduce the occurrence and magnitude of flaring for the gasification block, including a schedule for the expeditious implementation of all feasible prevention measures to address the following, including consideration of past flaring activity as information for actual operation of the plant becomes available:

A. Flaring that could reasonably be expected to occur or has occurred during startup or shutdown.

B. Flaring that could reasonably be expected to occur or has occurred due to issues of syngas quality.

C. Flaring caused by the recurrent failure of equipment or a process to operate in a normal or usual manner. The evaluation shall consider the adequacy of existing maintenance schedules and protocols for such equipment.

b. After the shakedown of the gasification block is complete, the Plan shall also include a description of additional procedures or other measures that are installed or implemented to reduce flaring from the gasification block, which addresses the following:

i. Measures taken within the last five years to reduce flaring which shall specify the year of installation or implementation of each measure.

ii. Measures that are planned, which shall specify the year in which operation or implementation of each planned measured is scheduled.

c. i. The Permittee shall submit a copy of the initial Plan to the Illinois EPA for review and comments at least 90 days prior to initial startup of the gasification block.

ii. The Permittee shall review the Plan on at least an annual basis and revise the plan so that it is kept current and reflects any changes in the operation of the gasification block.

iii. The Permittee shall make changes to the Plan if required by the Illinois EPA or USEPA to address an apparent deficiency identified in the Plan or as otherwise needed to address apparent or possible deficiencies in the Plan identified by the Permittee.

iv. These Plans are records required by this permit, which the Permittee must retain and make available to the Illinois EPA and USEPA in accordance with the general requirements for retention and availability of records. In addition, when the Permittee revises the Plan, the Permittee must also retain and make available the previous version of the Plan for a period of at least 5 years after such revision.

d. After the shakedown of the gasification block is complete, the Permittee shall also conduct an event-specific investigation or "Root-Cause Analysis" into each "Flaring Incident" at the gasification block to determine the causes of the incident, to take reasonable steps to correct the conditions that caused or contributed to such incident, and to further minimize emissions from flaring, as follows. For this purpose, a Flaring Incident is defined as a flaring event (i.e., the flaring of process gas from the gasification block) that accompanies the unscheduled shutdown of a gas processing train.

i. A Root Cause Analysis for a Flaring Incident shall consist of a systematic investigation of the incident by identifying and assessing corrective measures that are available to prevent or reduce the likelihood of recurrence of a similar incident (including design, operation and maintenance changes), and developing a program of interim and long-term corrective actions, if any, as are consistent with good engineering practice, to minimize the likelihood of a recurrence of the Root Cause and all contributing causes to the incident, with a

schedule for implementation of such measures if not already completed.

ii. The Permittee shall submit a report to the Illinois EPA for each Root Cause Analysis, which report shall include the following information:

A. Date, time and duration of the incident, and a description of the incident. To the extent that the incident involved multiple releases within a 24-hour period or within subsequent, contiguous non-overlapping periods, the report shall set forth the date, start time and duration of each release.

B. The amount of process gas flared during the incident and the estimated actual emissions of CO, VOM and SO_2 from the incident, with supporting data and calculations.

C. A detailed analysis that sets forth the root cause and all contributing causes to the incident, to the extent determinable.

D. An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an incident resulting from the same root cause or contributing causes in the future, which analysis discusses and evaluates the alternatives, if any, that are available, including possible operation and maintenance changes, the probable effectiveness of various alternatives, and the cost of the various alternatives.

E. If the analysis concludes that corrective actions are required, a description of those actions and, if not already completed, a schedule for their implementation, with planned commencement and completion dates of various actions.

F. If the analysis concludes that corrective action is not needed, an explanation of the basis for that conclusion.

iii. A report for each such incident and investigation shall be submitted to the Illinois EPA within 45 days of the date of the incident. If the investigation is still underway on this date, the report shall include information for the investigation to that point and a statement of the anticipated date by which a complete follow-up report will be submitted, with explanation why it is not yet practical to submit a complete report for the incident. Thereafter, the Permittee shall submit follow-up report(s) for the incident at least every 45

days until a complete final report is submitted for the incident.

e. Planning and other activities conducted by the Permittee as part of flaring minimization planning pursuant to this Condition 4.1.5-3 may be combined with planning and activities conducted by the Permittee as part of the preparation and implementation of Startup, Shutdown and Malfunction Plans pursuant to Condition 4.1.5-2 provided that the requirements of this condition are also met.

4.1.5-4 Other Work Practice Requirements

The Permittee shall handle the feedstock for the gasification block in accordance with a written Feedstock Management Plan that shall be designed to provide the gasifiers with a consistent feedstock that meets relevant criteria needed for proper operation of the gasifiers and production of a syngas that can be reliably processed by the gas trains. The Permittee shall review this plan on a regular basis and revise it if needed consistent with good air pollution control practice based on actual operating experience and equipment performance. This review shall occur at least every two years if not otherwise initiated by events that are not adequately addressed by the existing plan or a specific request by the Illinois EPA for such review.

4.1.6 Emission Limitations

a. The emissions of the affected AGR units (i.e., the exhausts from the oxidizers on the CO_2 vents from the AGR units) shall not exceed the following limits. The hourly limits shall apply on a 24-hour block average for pollutants for which continuous emissions monitoring is performed or otherwise on a 3-hour average. The annual limits shall take effect one year after the shakedown of the gasification block is complete.

Pollutant	Individual Limits		Total Annual Limit (Tons/Year)
	Hourly (Lbs/Hour)	Annual (Tons/Year)	
SO_2	11.0	48.3	96.6
NO_x	2.7	11.7	23.4
CO	61.0	266.2	532.5
VOM	0.09	0.4	8.01
PM	0.5	1.9	3.8
Sulfuric Acid Mist	0.005	0.023	0.05
Total Reduced Sulfur	0.048	0.21	0.43
Fluorides	0.011	0.050	0.1
Methanol	0.82	3.6	7.2
Other Individual HAP	0.13	0.57	1.14
Total HAPs	0.95	4.17	8.34

b. The emissions from the affected units controlled by flares shall not exceed the following limits. The hourly limits shall

apply on a 24-hour block average for pollutants for which continuous emissions monitoring is performed or otherwise on a 3-hour average. The annual limits shall take effect one year after the shakedown of the gasification block is complete.

Pollutant	Hourly Limits (Lbs/Hour)				Annual Limits (Tons/Year, total[a])
	Syngas Flares (combined)		Acid Gas Flares (combined)		
	Normal	Other[b]	Normal	Other[b]	
SO_2	0.10	9,510.0	0.10	9,510.00	73.10
NO_x	0.16	513.0	0.10	3.70	5.30
CO	0.20	1,279.0	0.10	0.10	18.80
VOM	0.02	105.0	0.01	0.74	1.20
PM	0.10	15.4	0.10	0.11	0.52
Sulfuric Acid Mist	0.02	71.0	0.02	95.0	1.46
Total Reduced Sulfur[d]	----	1.94	----	1.94	1.90
Methanol	----	6.30	----	1.60	0.10
Other Individual HAP[c]	0.01	0.01	0.01	0.01	0.06
Total HAPs	0.01	6.31	0.01	1.61	0.19

Notes

a. Total emission of all flares, including periods of startup, shutdown and malfunction or breakdown.

b. Operation during startup, shutdown and malfunction.

c. Individual HAP other than methanol.

d. Total Reduced Sulfur is the combination of hydrogen sulfide, carbonyl sulfide and carbon disulfide.

4.1.7-1 Operational Testing for the Flares

a. Within 90 days of initial startup of each affected flare, the Permittee shall conduct observations for visible emissions from the flare in accordance with 40 CFR 60.18(f)(1) to verify compliance with 40 CFR 60.18(c)(1).

b. Within 90 days of initial startup of the first syngas flare and the first acid gas flare, the Permittee and shall perform sampling and analysis of the heat content of the process gas(es) that would be that flare in accordance with 40 CFR 60.18(f)(3) to verify compliance with 40 CFR 60.18(c)(3).

4.1.7-2 Emission Testing for the AGR Units

a. The Permittee shall have emissions tests conducted for the atmospheric vent from each AGR Unit (oxidizer exhaust) as follows at its expense by an approved testing service while the

unit is operating in the maximum range and other representative operating conditions.

i. Within 60 days after achieving the maximum rate at which the unit will be operated but not later than 365 days after initial startup of the unit, the Permittee shall have tests conducted for emissions of CO.

ii. A. Within 60 days after achieving the maximum rate at which the unit will be operated but not later than 365 days after initial startup of the unit, the Permittee shall have tests conducted for emissions of NO_x, total reduced sulfur, sulfuric acid mist, VOM and methanol.

B. This period of time may be extended by the Illinois EPA for up to an additional 365 days upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties in the startup and testing of the associated gas train, provided that preliminary emissions measurements are conducted and reported to the Illinois EPA.

iii. In addition to the emission testing required above, the Permittee shall perform emission tests as provided below as specified by the Illinois EPA within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.

Note: Specific requirements for periodic emission testing may be established in the CAAPP Permit for the plant.

b. The following methods and procedures shall be used for testing, unless other methods adopted or endorsed by USEPA or being developed by USEPA are approved by the Illinois EPA.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3 or 3A
Moisture	Method 4
Nitrogen Oxides	Method 19
Carbon Monoxide	Method 10
Total Reduced Sulfur	Method 15A
Sulfuric Acid Mist	Method 8
Volatile Organic Material	Method 18
Methanol	Method 308

c. i. Test plans, test notifications, and test reports shall be submitted to the Illinois EPA in accordance with the Condition 5.1.

ii. In addition to other information required to be included in a test report, test reports shall include detailed

information on the operating conditions of the gasification block during testing, including:

A. Feedstock consumption (tons/day);

B. Composition of the feedstock (Refer to Condition 4.1.9), including the metals (e.g., mercury), chlorine and fluorine content, expressed in weight percent;

C. Significant operating parameters of the gasifiers;

D. Amount of syngas processed by each AGR unit;

E. Composition of the gas routed to the oxidizer for chlorine, fluorine and metals by elemental analysis;

F. Combustion chamber temperature of the oxidizer; and

G. Opacity of the exhaust, 6-minute averages, as determined by USEPA Method 9.

4.1.8-1 Operational Instrumentation and Monitoring for the Gasification Block

a. The Permittee shall install, operate, and maintain instrumentation for consumption of coal (solid) feedstock and alcohol by the gasifiers.

b. The Permittee shall install, operate and maintain continuous monitoring systems for key operating parameters of the cleanup systems in each gas processing train, including:

i. Temperature at and pressure drop across the cleanup system for mercury; and

ii. Flow rate of the adsorption solvent in the AGR unit.

4.1.8-2 Operational Instrumentation and Monitoring for the Affected Flares

a. The Permittee shall install, operate and maintain continuous monitoring systems on each affected flare related to the discharge of process gas (i.e., syngas or acid gas streams but not fuel for the pilot flame or purge gas) to a flare for the following parameters. These monitoring systems shall be operated in accordance with relevant provisions of the NSPS, 40 CFR 60.107(a):

i. The total flow of process gas sent to the flare (SCFM).

ii. The H_2S and CO content of the process gas sent to the flare (ppm).

b. The Permittee shall continuously monitor each affected flare for the presence of a flare pilot flame using a thermocouple or

any other equivalent device to detect the presence of a flame, which monitoring shall be conducted in accordance with 40 CFR 60.18(f)(2).

c. The Permittee shall install, operate and maintain continuous monitoring systems on each affected flare for the usage of pilot gas and purge gas (other than nitrogen or other inert gas) by the flare, in scfm. Readings shall be taken at least once every 5 minutes and the average hourly values shall be recorded on an hourly and daily basis.

d. The Permittee shall continuously monitor the liquid level and pressure of the seal drum that serves each affected flare, which monitoring devices shall be operated according to the manufacturer's specifications and requirements.

e. The Permittee shall develop and maintain written Monitoring Procedures for each affected flare addressing the required monitoring systems and the operational monitoring systems for each flare and associated equipment in the gasification block, which shall include the following information. A copy of these procedures shall be submitted to the Illinois EPA for review prior to the initial startup of the gasification block.

   i. A process flow diagram of the affected flare and equipment in the gasification block as related to flaring, identifying major components, such as the header, stack, burner(s), purge gas system, pilot gas system, ignition system, assist system, and liquid seal for the flare and the process gas lines for the gasification block.

   ii. Drawing(s), with dimensions, showing the sampling location(s) at which sampling or monitoring is conducted, accompanied by an explanation of the methods used to select these sampling location, for sampling of flare process gas; flow of flare process gas, pilot gas and purge gas; on/off flow indicators, HHV analyzer, total sulfur analyzer, operating parameters of the liquid seal, and operating parameters of the gasification block that could provide credible information on the occurrence or nature of flaring.

   iii. The type, make, and model of each monitoring device or instrument used for required monitoring, with a description of manufacturer's specifications for the device, including but not limited to range, precision, accuracy, calibration, and recommended procedures for quality control, quality assurance and maintenance.

   iv. A description of the data collection and recording device(s) used to store data collected by required monitoring systems.

4.1.8-3 Operational Instrumentation and Monitoring for the AGR Units

a. The Permittee shall install, operate and maintain continuous monitoring systems on the oxidizer associated with each AGR unit for the following parameters:

i. The H_2S content of gas entering the oxidizer, which monitoring systems shall be operated in accordance with relevant provisions of the NSPS, CFR 60.107a.

ii. The temperature in the combustion chamber of the oxidizer.

4.1.9 Sampling and Analysis of Feedstock and Syngas

a. The Permittee shall sample and analyze the solid feedstock supplied to the gasification block for sulfur and heat content in accordance with USEPA Method 19 and for mercury and other metals, chlorine and fluorine content using applicable ASTM methods. This activity shall be conducted:

i. In conjunction with emissions testing of the superheaters (see Condition 4.2.7).

ii. Within 90 days of acceptance of a feedstock from a new source.

iii. Within 90 days of a written request from the Illinois EPA.

iv. At least once every two calendar years, if a more frequent analysis is not otherwise needed pursuant to the above.

b. The Permittee shall sample and analyze the gas stream from each AGR Unit that is sent to the oxidizer for its sulfur content using USEPA Method 19 and its VOM (hydrocarbons), methanol, H_2S, COS and CS_2 content using applicable ASTM methods. This activity shall be conducted:

i. In conjunction with emissions testing of an AGR Unit (see Condition 4.1.7-2).

ii. Within 90 days of a written request from the Illinois EPA.

iii. At least once every two calendar years, if a more frequent analysis is not otherwise needed pursuant to the above.

c. The Permittee shall take representative samples at least every three calendar years of the various gas streams that could be vented to the flare(s) and analyze them using applicable ASTM methods for sulfur, VOM, methanol, chlorine, fluorine, and mercury and other metals content and for heat content.

d. The Permittee shall maintain records for this sampling and analysis activity.

4.1.10 Recordkeeping Requirements

a. The Permittee shall maintain records of the production of synthetic natural gas (SNG) by the plant, million SCF per month, determined as SNG transferred offsite from the plant.

b. The Permittee shall maintain an operating log or other similar records for the affected units in the gasification block that include the information specified in Condition 5.2(a) and the following detailed information:

   i. For each startup of unit(s), the nature of the startup, the timing of major steps in the startup, any unusual occurrences during the startup, and any deviations from the established startup procedures, with explanation.

   ii. For each shutdown of unit(s), the nature and reason for the shutdown, the timing of major steps in the shutdown, any unusual occurrences during the shutdown, and any deviations from the established shutdown procedures, with explanation.

c. The Permittee shall keep the following operating records for each event when process gas was flared:

   i. Date, time and duration of flaring.

   ii. Description of the event, including the flare(s) involved in the event and a discussion of the cause(s) and probable cause(s) of the event.

   iii. Confirmation that established operating procedures were followed.

   iv. Confirmation that the flare(s) functioned properly, i.e., a flame was present and any visible emissions that occurred were in compliance with 40 CFR 60.18(f)(1).

   v. The amount and nature of the process gas sent to the flare(s), with detailed explanation if partially cleaned syngas was flared.

   vi. The amount of CO, H_2S and VOM contained in the gas sent to the flare(s) and the amount of CO, SO_2 and VOM emitted, pounds/event, with supporting calculations.

   vii. Whether SO_2 emissions of the flare(s) may have exceeded the standard of 35 IAC 214.301, i.e., 2000 ppm, on an hourly average.

   viii. Corrective actions taken during the event.

ix. A description of any actions taken to prevent or reduce the likelihood of similar future occurrences.

d. The Permittee shall maintain inspection, maintenance and repair log(s) or other similar records for the affected units in the gasification block that at a minimum include the information specified in Condition 5.2(b) and identify any occasion when the Permittee was unable to carry out its established maintenance procedures, with explanation.

e. The Permittee shall keep records for any deviations from applicable requirements involving the gasification block, which records shall include the information specified by Condition 5.3. These records may be combined with other records required for the gasification block by this permit.

f. The Permittee shall keep the following records related to emissions of SO_2, NO_x, VOM, CO, PM, methanol, mercury, hydrogen chloride, hydrogen fluoride and other HAPs from the emission units in the gasification block (each flare and each AGR unit/oxidizer):

i. A file containing the emission factors that the Permittee uses to calculate emissions of each pollutant, with supporting documentation.

ii. Emissions of each pollutant from the unit, based on operating data and applicable emission factors, with supporting calculations.

4.1.11 Reporting for Units in the Gasification Block

a. The Permittee shall promptly notify the Illinois EPA of deviations of unit(s) in the gasification block with permit requirements as follows. Reports shall include the information specified by Condition 5.4:

i. Failure of an affected flare or an oxidizer on an AGR unit, e.g., loss of combustion, when operation continues for more than 1 hour (60 minutes) shall be reported to the Illinois EPA’s regional office by telephone as soon as possible during normal working hours, but no later than three days.

ii. For certain deviations by the affected flares, as specified by Condition 4.1.11(b).

iii. The deviations addressed above and all other deviations shall be reported in the periodic compliance reports required by Condition 4.1.11(c).

b. The Permittee shall provide the following notifications and reports to the Illinois EPA, concerning each incident when operation of affected flare(s) continued during a malfunction

or breakdown with SO_2 emissions or opacity in excess of that allowed by 35 IAC 214.301 or 212.123(a), respectively.

i. The Permittee shall notify the Illinois EPA's regional office by telephone as soon as possible during normal working hours, but no later than three days, for each incident.

ii. Upon completion of the incident, the Permittee shall give a written follow-up notice to the Illinois EPA, Compliance Section and Regional Field Office, within 15 days providing a detailed explanation of the event, an explanation why continued operation was necessary, the length of time during which operation continued under such conditions, the measures taken by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or units were shutdown.

c. The Permittee shall submit periodic compliance reports for the gasification block. The reports shall be submitted no later than 30 days after the end of the calendar six month reporting period.

i. Information related to excess emissions and deviations during the reporting period, if any. When no excess emissions or deviations have occurred or the continuous emissions monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

ii. A summary of operation and emissions of the gasification block during the reporting period, including the total number of startups of gasifiers, the total number of startups of gas processing trains, the amount of SNG produced by the plant, and the emissions of SO_2, NO_x and CO during the reporting period (tons).

iii. A listing of each flaring event during the reporting period, i.e., each period when process gas was flared, with date and duration, a description of the event, including cause(s), and whether a event-specific Root Cause Analysis was performed for the event pursuant to Condition 4.1.5-3(d).

d. With its Annual Emission Report, the Permittee shall submit a report to the Illinois EPA for flaring during the previous year, which report shall:

i. Provide the information specified in Condition 4.1.11(c)(iii) for flaring events during the year.

ii. Summarize flaring activity and emissions during the previous year, including an assessment of the cause(s) for such flaring as related to the number of events and

share of emissions, a summary of each event-specific Root Cause Analysis was performed, and calculated CO emissions of the flares as compared to the limit in Condition 4.1.5-3(d).

iii. Include copies of the summaries for flaring activity for the preceding three years as required by Condition 4.1.11(d)(ii), as reported in earlier reports, as these summaries become available.

iv. Summarize actions or measures implemented during the previous year to reduce flaring pursuant to the Root Cause Analyses required by Condition 4.1.5-3(d), and the observed effect of these actions, and the actions or measures planned for implementation during the current year to reduce flaring pursuant to Root Cause Analyses, and the expected effect of these actions.

v. Summarize other actions or measures implemented during the previous year to reduce flaring, not related to required Root Cause Analyses, and the reason for and observed effect of these actions, and other actions or measures planned for implementation during the current year to reduce flaring, and the reason for and expected effect of these actions.

vi. Include a listing of changes, if any, made to the Flare Minimization Plan, as provided for by Conditions 4.1.5-3(c)(ii) and (iii), with brief description.

vii. Include a listing of significant changes, if any, made to the Monitoring Procedures required by Condition 4.1.8-2(e), with brief description.

viii. Provide confirmation that the required annual verification of the accuracy of the flow monitoring system was conducted, with a summary of results.

4.1.12 Additional Reporting for the Shakedown Period and the Following Year

a. The Permittee shall provide the Illinois EPA with notice at least 15 days advance prior to initial feeding of alcohol to a gasifier and initial feeding of coal to a gasifier.

b. During the shakedown period for the gasification block, the Permittee shall promptly notify the Illinois EPA of any event(s) that disrupts orderly shakedown.

c. During the shakedown period for the gasification block and a period that extends for one year (12 months) after the conclusion of the shakedown period, the Permittee shall submit the periodic compliance reports required by Condition 4.1.11(c) on a monthly basis, with reports submitted no later than 25 days after the end of each calendar month, beginning with the

first month in which any fuel is fired in the unit. During the shakedown period, these reports shall also include the following information:

i. Operating data for the gasification block, i.e., total operating hours and feedstock usage and SNG production during the reporting period);

ii. Activities accomplished and significant events related to emissions of the gasification block;

iii. Current schedule for emission testing;

iv. A summary of any emission measurements conducted; and

v. When applicable, notice that all emission testing has been completed and shakedown of the gasification block is considered complete.

CONDITION 4.2: UNIT-SPECIFIC CONDITIONS FOR THE STEAM SUPERHEATERS AND AUXILIARY BOILER

4.2.1 Description

The affected units for the purpose of these unit-specific conditions are the two natural gas-fired steam superheaters and the natural gas-fired auxiliary boiler at the plant.

The superheaters will “superheat” or further heat low temperature steam generated from various heat exchangers in the gasification block that are recover the thermal energy of high-temperature gas streams. This “low quality” process steam must be further heated to raise its temperature to a level that meets the specifications for steam sent to the steam turbine generators at the plant that supply the electricity for the operation of the plant. The superheaters would be fired on natural gas which may include both natural and synthetic natural gas. The emissions of NO_x from the superheaters will be controlled by a Selective Catalytic Reduction (SCR) system installed on each unit. The flue gas from each unit will then merge and be vented through a common stack.

The auxiliary boiler will be used to supply steam to the plant when the gasification block is not operating and to assist in the startup of units in the gasification block. Given its functions, the auxiliary boiler would not operate continuously. The auxiliary boiler will fire commercial natural gas that is piped to the plant. The boiler’s emissions of NO_x from will be controlled by low-NO_x burners and flue gas recirculation.

4.2.2 Control Technology Determination

a. Each affected superheater shall be equipped and operated with the following to control emissions:

   i. Use of natural gas.

   ii. A Selective Catalytic Reduction (SCR) system.

   iii. Good Combustion Practices.

b. The affected auxiliary boiler shall be equipped and operated with the following to control emissions:

   i. Use of natural gas.

   ii. Low-NO_x Burners.

   iii. Flue Gas Recirculation

   iv. Good Combustion Practices.

c. The emissions of the affected units shall not exceed the following limits, in lbs/mmBtu:

Pollutant	Superheaters (combined)	Auxiliary Boiler
NO_x	0.035, 30-day rolling	0.035, 24-hour block
CO	0.040, 30-day rolling	0.040, 24-hour block
SO_2	0.0013, 24-hour block	0.0013, 24-hour block
PM	0.01, 24-hour block	0.01, 24-hour block

4.2.3-1 Applicable Federal Emission Standards

a. The affected units are subject to the NSPS for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db and related provisions in 40 CFR 60, Subpart A, General Provisions.

b. i. The affected superheaters shall comply with the applicable NSPS standard for NO_x emissions, as follows, on and after the date on which the initial performance test is completed or is required to be completed under 40 CFR 60.8, whichever date comes first:

A. 86 ng/J (0.20 lb/million Btu) on a 30-day rolling average, pursuant to 40 CFR 60.44b(l); or alternatively.

B. A limit set by USEPA pursuant to 40 CFR 60.44b(f).

ii. The affected auxiliary boiler shall also comply with the above NSPS standard for NO_x emissions, provided, however, that, compliance shall be determined on a 24-hour average basis for the initial performance test and on a 3-hour average basis thereafter until initial startup of the gasification block, as provided by 40 CFR 60.44b(j) for natural gas-fired units whose annual capacity factor is limited to no more than 10 percent.

c. The affected superheaters shall comply with the applicable NSPS standards for PM and opacity, as follows, on and after the date on which the initial performance test is completed or is required to be completed under 40 CFR 60.8, whichever date comes first:

i. Opacity shall not exceed 20 percent (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity pursuant to 40 CFR 60.43b(f). This standard shall apply at all times, except during periods of startup, shutdown or malfunction as provided by 40 CFR 60.2 and 60.11(c).

ii. PM emissions shall not exceed 13 ng/J per actual heat input in any one hour period (0.030 lb/million Btu), pursuant to 40 CFR 60.43b(h)(1), except during periods of startup, shutdown or malfunction as provided by 40 CFR 60.2 and 60.11(c).

d. At all times, the Permittee shall maintain and operate the affected units, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).

4.2.3-2 Applicable State Emission Standards

The affected units are subject to the following state emission standards:

a. i. The emission of smoke or other particulate matter from the affected auxiliary boiler shall not have an opacity greater than 20 percent, except as allowed by 35 IAC 212.122(b) or 212.124. [35 IAC 212.122(a)]

ii. The emission of smoke or other particulate matter from the affected superheaters shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.123(b) or 212.124. [35 IAC 212.123(a)]

iii. Compliance with these limits shall be determined by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.122(a)]

b. The CO emissions into the atmosphere from the affected units shall not exceed 200 ppm, corrected to 50 percent excess air. [35 IAC 216.121]

c. The NO_x emissions from the affected units shall not exceed 0.2 lb/mmBtu in any one-hour period. [35 IAC 217.121(a)]

4.2.4 Non-Applicability Provisions

a. The affected units are not subject to the Title IV (i.e., Acid Rain) provisions of the federal Clean Air Act since they do not qualify as electrical generating units for the purpose of the Acid Rain program.

b. This permit is issued based on certain provisions of the NSPS, as follows, not being applicable for the affected units:

i. The affected auxiliary boiler is not subject to the limits of the NSPS for PM or opacity because it only burns natural gas.

ii. The affected units are not subject to the SO2 standards of the NSPS, 40 CFR 60, Subpart Db, because the units only fire fuels with a potential SO_2 emission rate of 0.32 lb/mmBtu heat input or less. [40 CFR 60.42b(k)(2), 60.47b(f) and 60.48b(j)(5)]

iii. The affected units are not eligible for the optional output-based NO_x standard of the NSPS, 40 CFR 60.44b(1)(3). This is because combustion of fuel in the superheaters and in the auxiliary boiler only contributes a portion of the energy in the steam that is recovered as electricity by the steam turbine generators.

iv. The affected units are not subject to the opacity monitoring requirements of the NSPS, 40 CFR 60.48b, because they only burn gaseous fuels, without post-combustion technology to reduce SO_2 or PM emissions. [40 CFR 60.48b(j)(2)]

v. The affected auxiliary boiler is not subject to the NO_x monitoring requirements of the NSPS, 40 CFR 60.48b, during the period before the initial startup of the gasification block because it will meet the criteria of 40 CFR 60.44b(j) during this period, i.e., the annual capacity factor of the boiler will be limited no more than 10 percent. [40 CFR 60.48b(i)]

vi. The affected units are not subject to any requirements of the NSPS, 40 CFR 60, Subpart D, because they are subject to the NSPS, 40 CFR 60, Subpart Db. [40 CFR 60.40(e)]

4.2.5 Operational and Production Limits and Work Practice

a. Natural gas shall be the only fuel combusted in the affected units.

b. i. The annual capacity factor, as defined by 40 CFR 60.41b, of the affected auxiliary boiler shall not exceed 46 percent.

ii. Notwithstanding the above, during the period before the initial startup of the gasification block, the annual capacity factor of the affected auxiliary boiler shall not exceed 10 percent (127.4 mmBtu/hour, annual average).

4.2.6 Emission Limitations

a. The emissions of the affected superheaters, combined, shall not exceed the following limits. The hourly limits shall apply on a monthly average for pollutants for which continuous emissions monitoring is performed or otherwise on a 24-hour block average. The annual limits address all emissions from the units, including emissions during startup, shutdown and malfunction and breakdown.

Pollutant	Hourly Limit (Lbs/Hour)		Annual Limit (Tons/Year)
	Normal	Other[a]	
SO_2	0.17	0.3	0.5
NO_x	4.60	9.5	17.5
CO	5.25	10.5	20.0
VOM	1.30	3.0	2.6

Pollutant	Hourly Limit (Lbs/Hour)		Annual Limit (Tons/Year)
	Normal	Other[a]	
PM[b]	1.50	3.0	5.8
Individual HAP	0.33	1.7	1.2
Total HAPs	0.33	1.7	1.2

Notes:

a. "Other" addresses periods of startup, shutdown, and malfunction or breakdown.

b. Limits for PM address total emissions of particulate matter, including both filterable and condensable particulate.

b. The emissions of the affected auxiliary boiler shall not exceed the following limits. The hourly limits shall apply on a 24-hour block average basis for pollutants for which continuous emissions monitoring is performed or otherwise on a 3-hour block average. The annual limits address all emissions from the units, including emissions during startup, shutdown, malfunction and breakdown.

Pollutant	Hourly Limits (Lbs/Hour)	Annual Limits (Tons/Year)
SO_2	1.7	3.3
NO_x	44.6/89.2[a]	89.2
CO	51.0	101.9
VOM	6.4	12.8
PM[b]	12.8	25.6
Individual HAP	1.6	3.2
Total HAPs	1.6	3.2

a. The alternate limitation applies during periods of startup, shutdown, and malfunction or breakdown.

b. Limits for PM address total emissions of particulate matter, including both filterable and condensable particulate.

4.2.7 Emission Testing Requirements

a. The Permittee shall have emissions testing performed for the affected units as follows at its expense by an approved testing service while the affected units are operating at maximum operating load and other representative operating conditions:

i. For the affected auxiliary boiler, initial performance testing for emissions of NO_x required under the NSPS shall be conducted in accordance with 40 CFR 60.8 and 60.46b.

ii. For each affected superheater, initial performance testing for emissions of PM, PM(condensable) and NO_x and opacity required under the NSPS shall be conducted in accordance with 40 CFR 60.8 and 60.46b.

iii. For the affected superheaters,

A. Emissions tests shall be performed for CO, PM (filterable and condensable), and VOM within one year (365 days) after completing the shakedown of the gasification block.

B. This period of time may be extended by the Illinois EPA for up to an additional 365 days upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties in the startup and testing of the gasification block or enable testing while both superheaters are operating provided that applicable initial performance testing required by the NSPS has been completed and the test report submitted to the Illinois EPA.

iv. In addition to the emission testing required above, the Permittee shall perform emission tests as requested by the Illinois EPA for affected unit(s) within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.

Note: Specific requirements for periodic emission testing may be established in the CAAPP Permit for the plant.

b. i. The methods and procedures for testing emissions of PM and NO_x and opacity shall be in accordance with 40 CFR 60.46b.

ii. The following methods and procedures shall be used for testing, unless use of other methods adopted or endorsed by USEPA or being developed by USEPA are approved by the Illinois EPA.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3 or 3A
Moisture	Method 4
PM (Condensable)	Method 202
CO[a]	Method 10
VOM	Methods 18 and 25A

Note:

a. CO emission testing shall be conducted for the purpose of certification of the continuous emission monitors required by Condition 4.2.8-1(b).

Thereafter, CO emission data from certified monitors may be provided in lieu of conducting emissions tests.

c. i. Test plans, test notifications, and test reports shall be submitted to the Illinois EPA in accordance with the Condition 5.1.

ii. In addition to other information required in a test report, test reports shall include detailed information on the operating conditions of an affected unit during testing, including:

A. Fuel consumption, by type (in million scf);

B. Firing rate (mmBtu/hour) and other significant operating parameters of the affected unit;

C. For the affected superheaters, results of the analyses of the fuel gas for heat content (Btu/scf) and ash, chlorine, fluorine and individual heavy metals (pound per million Btu);

D. Opacity of the exhaust, 6-minute averages.

4.2.8-1 Emissions Monitoring Requirements

a. Pursuant to 40 CFR 60.48b, for the affected superheaters, the Permittee shall install, calibrate, operate and maintain a continuous emission monitoring system (CEMS) for measuring the NO_x emissions from the superheaters.

i. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of these CEMS. This CEMS shall be operated during all periods of operation of the affected units except for CEMS breakdowns and repairs. This CEMS shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive units operating days as specified and pursuant to 40 CFR 60.48b(f). Data is to be obtained in the scheduling and course of performing calibration checks, and zero and span adjustments as specified in the NSPS.*

* Fulfillment of the above criteria for availability of emission data from the CEMS does not shield the Permittee from potential enforcement for failure to properly maintain and operate the CEMS.

ii. Pursuant to 40 CFR 60.48b, for the affected auxiliary boiler, after the initial startup of the gasification block, the Permittee shall also install, calibrate, operate and maintain a CEMS for measuring the NO_x emissions from the boiler as provided above.

iii. The 1-hour average NO_x emission rates measured by each CEMS shall be expressed in lbs/mmBtu heat input and shall be used to calculate average emission rates pursuant to the NSPS. The 1-hour averages shall be calculated using the data points required under 40 CFR 60.13(h), except as allowed under 60.48b(b)(2).

iv. These CEMS shall also be used to determine compliance with the NO_x limits in Condition 4.2.6.

b. The Permittee shall install, calibrate, operate and maintain CEMS for measuring CO emissions from the affected superheaters and the affected boiler.

i. The relevant monitoring procedures in 40 CFR 60.48b(j)(4) shall be followed for these CEMS until and unless USEPA adopts procedures that would be directly applicable for continuous monitoring of CO emissions from these units.

ii. These CEMS shall be used to determine compliance with the CO limitations in Conditions in 4.2.2, 4.2.3-2 and 4.2.6.

4.2.8-2 Opacity Observations

The Permittee shall perform opacity observations for the affected units in accordance with Method 9 on at least an annual basis if visible emissions are normally present, as determined by Method 22.

4.2.9 Recordkeeping Requirements

a. The Permittee shall maintain a file that contains the following information:

i. The rated heat input capacity of each affected unit, with supporting documentation.

ii. The Permittee’s established operating and maintenance procedures for the affected units.

b. The Permittee shall maintain records of the following information for NO_x emissions from the affected superheaters and the affected boiler for each operating day, pursuant to 40 CFR 60.49b(g) if monitoring is being conducted for NO_x emissions, unless alternative recordkeeping requirements are approved for affected unit(s) in conjunction with USEPA approval of alternative monitoring procedures under the NSPS:

i. Calendar date;

ii. The average hourly emission rates (expressed in lbs/million Btu heat input) measured or predicted;

iii. The 30-day average emission rate (lbs/million Btu heat input and lbs/hour) calculated at the end of each operating day from the measured hourly emission rates for the preceding 30 unit operating days;

iv. Identification of the operating days when the calculated 30-day average emission rates are in excess of an applicable standard or limit, with the reasons for such excess emissions as well as a description of corrective actions taken;

v. Identification of the operating days for which emission data have not been obtained, including a description of corrective actions taken;

vi. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;

vii. Identification of “F” factor used for calculations, method of determination, and type of fuel combusted;

viii. Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system;

ix. Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3; and

x. Results of daily CEMS drift tests and quarterly accuracy assessments as required under Appendix F, Procedure 1 of 40 CFR 60.

c. The Permittee shall keep the following records for the CO CEMS required by Condition 4.2.8(b) for the affected superheaters and the affected boiler:

i. All measurements needed to demonstrate compliance with the applicable standards and limitations for CO including, but not limited to, 15-minute averages of CEMS data and raw performance evaluation measurements that support data that the Permittee is required to report.

ii. Records of CO emissions as compared to applicable limits and standards and the date, start time and duration of any deviation from an applicable standard or limitation, and whether the deviation occurred during period of startup, shutdown, or malfunction.

iii. Each period during which a CEMS is malfunctioning or inoperative.

iv. All results of CEMS performance evaluations.

v. All CEMS calibration checks and all adjustments and maintenance performed on the CEMS.

vi. All measurements as may be necessary to determine the conditions of performance tests and performance evaluations.

d. The Permittee shall maintain the following operating records for the affected superheaters and the affected boiler:

i. Daily records of fuel use, which records shall be prepared and maintained following the procedures of 40 CFR 60.49b(d);

ii. Amount of fuel consumed, (scf/month and scf/year) and the annual capacity factor, determined on a 12-month rolling basis with a new annual capacity factor calculated for each month pursuant to 40 CFR 60.49b(d);

iii. For the affected superheaters, pursuant to 40 CFR 60.49b(r)(2), analysis reports for the sulfur content of fuel combusted in these units that shall contain, at a minimum, the following information. A site-specific fuel analysis plan shall be submitted to the Illinois EPA for review and approval no later than 60 days before the date of the Permittee's intended initial compliance determination. Such plan shall include a minimum initial requirement of weekly testing. Monthly or quarterly sampling may be approved in place of weekly sampling.

A. The potential sulfur emissions rate of the representative fuel mixture in ng/J heat input; and

B. The method used to determine the potential sulfur emissions rate.

e. The Permittee shall maintain an operating log or other similar records for the affected units that include the information specified in Condition 5.2(a) and the following information:

i. For each startup of an affected unit, the information specified by 40 CFR 60.7(b) and identification of any deviations from normal startup procedures, as set forth in the Permittee's written operating procedures, with explanation.

ii. For each shutdown of an affected unit, the nature and reason for the shutdown, the timing of major steps in the shutdown, any unusual occurrences during the shutdown, and any deviations from the established shutdown procedures, with explanation.

iii. For malfunctions or breakdowns, the information required by 40 CFR 60.7(b) and, if excess emissions occurred:

A. An explanation why continued operation of the affected unit was necessary.

B. The rates or magnitude of excess emissions during the event.

f. The Permittee shall keep inspection, maintenance and repair logs or other similar records for the affected units that contain the information specified in Condition 5.2(b).

g. The Permittee shall keep records for any deviations from applicable requirements involving the affected acid plants, which records shall include the information specified by Condition 5.3. These records may be combined with other records required by this section of this permit.

h. The Permittee shall keep the following records related to the emissions of NO_x, CO, VOM, SO_2, PM of the affected superheaters and the affected boiler:

i. If continuous monitoring is performed for a pollutant, the emissions of the pollutant from the affected unit(s) based on continuous emissions monitoring data, in tons/month and tons/year.

ii. If continuous monitoring is not performed for a pollutant:

A. A file containing the emission factors that it uses to calculate emissions, with supporting documentation; and

B. The emissions of the affected unit(s) based on operating data and applicable emission factors, in tons/month and tons/year, with supporting calculations.

4.2.10 Notification and Reporting Requirements

a. The Permittee shall fulfill applicable notification and reporting requirements of the NSPS, 40 CFR 60.7 and 60.49b, for the affected units by sending required notifications and reports to the Illinois EPA, including the following reports:

i. Notification of the date of initial startup of each unit, as provided by 40 CFR 60.7. This notification shall include: (1) the design heat input of the unit, and (2) the annual capacity factor at which the Permittee anticipates operating the unit.

ii. Reports containing the information recorded under 40 CFR 60.49b(g) and (j).

iii. Periodic reports for excess emissions, as further addressed by Condition 4.2.10(d).

b. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by Condition 5.4.

i. If there is an exceedance of a state emission or opacity standard other than during startup or shutdown, e.g., due to a malfunction or breakdown event, the Permittee shall immediately notify the Illinois EPA in accordance with Condition 4.2.10(c).

ii. If there is a deviation from other applicable requirements for PM emissions or opacity that is not repaired or otherwise corrected within two hours (120 minutes), the Permittee shall notify the Illinois EPA within 30 days.

iii. The deviations addressed above and all other deviations shall be reported in the periodic compliance reports required by Condition 4.2.10(d).

c. i. Pursuant to 35 IAC 201.263, the Permittee shall immediately report to the Illinois EPA, Regional Office, by telephone or fax upon continued operation of an affected unit during a malfunction or breakdown of the unit or associated control equipment when such continued operation would cause an exceedance or violation of the applicable state emission standard.

ii. The Permittee shall submit a written follow-up report to the Illinois EPA within five business days providing a detailed explanation of the event and explanation why continued operation of the unit was necessary, the length of time during which operation continued under such conditions, the measures by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or the unit was taken out of service.

d. The Permittee shall submit periodic compliance reports to the Illinois EPA for the affected units, which reports shall include the following information. These reports shall be submitted on a semi-annual basis, with each report submitted no later than 30 days following the end of the reporting period:

i. Information related to excess emissions and deviations:

A. As related to the NSPS standard for NO_x emissions or the NO_x limit in Condition 4.2.2, the information required for reporting of exceedances under 40 CFR 60.7(c) or (d) and 60.49b(h) and (j). If there are no such exceedances during the reporting period, the report shall state that no exceedances occurred during the reporting period.

B. Information for other deviations during the reporting period, if any.

C. When no excess emissions or deviations have occurred or the continuous emissions monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

ii. A summary of operation and emissions of the affected superheaters and affected boiler during the reporting period, including the amounts of fuel used, total operating hours, number of startups by type, and average hourly emission rates for NO_x, SO_2 and CO.

4.2.11 Additional Reporting for the Shakedown Period

a. During the shakedown period for each affected unit, the Permittee shall promptly notify the Illinois EPA of any event(s) that disrupts the orderly shakedown of an affected unit.

b. During the shakedown period for the affected units and a period that extends for one year (12 months) after the conclusion of the shakedown period, the Permittee shall submit the periodic compliance reports required by Condition 4.2.10(d) on a monthly basis, with reports submitted no later than 25 days after the end of each calendar month, beginning with the first month in which any fuel is fired in a unit. During the shakedown period, these reports shall also include the following information:

i. Operating data for the unit, i.e., total operating hours and fuel usage and maximum heat input achieved during the reporting period);

ii. Activities accomplished and significant events related to emissions of the unit;

iii. Current schedule for emission testing;

iv. A summary of any emission measurements conducted; and

v. When applicable, notice that all emission testing has been completed and shakedown of the unit is considered complete.

CONDITION 4.3: UNIT-SPECIFIC CONDITIONS FOR STARTUP BURNERS

4.3.1 Description of Emission Unit

The affected units for the purpose of these unit-specific conditions are the natural gas-fired burners used to pre-heat certain units in the gasification block. The gasifier burners are used to preheat the refractory of the gasifier vessels to operating temperature before the introduction of the startup feedstock. The startup burners for the CO shift and methanation units are used to heat the catalyst beds in these units to operating temperature prior to beginning operation of the units.

4.3.2 Control Technology Determination

a. The affected units shall be operated and maintained with the following features to control emissions:

i. Use of natural gas

ii. Good combustion practices

b. Affected units shall be designed and operated to comply with the following limits, which are in lbs/mmBtu:

Pollutant	Burners for Gasifiers	Burners for CO Shift & Methanation Units	Averaging Time
NO_x	0.2	0.08	24-Hour
CO	0.1	0.04	3-Hour
SO_2	0.0013	0.0013	24-Hour
PM	0.01	0.01	3-Hour

4.3.3 Applicable Emission Standards

Each affected unit is subject to 35 IAC 212.123, which provides that no person shall cause or allow the emissions of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit.

4.3.4 Non-Applicability Provisions

a. The affected units are not subject to the NSPS for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subpart Dc because they are not steam generating units as defined by the NSPS.

b. This permit is issued based on the affected units not being subject to 35 IAC 212.206, 212.207, or 214.162 because the affected units are not fuel combustion emission units as defined by 35 IAC 211.2470.

4.3.5 Operational Production Limits and Work Practices

a. Natural gas shall be the only fuel fired in the affected units.

4.3.6 Emission Limitations

a. The total annual emissions of the affected units shall not exceed the following limitations, beginning effective one year after the shakedown of the gasification block is complete:

Pollutant	Limit (tons/year)
SO_2	0.10
NO_x	9.9
CO	5.0
VOM	1.0
PM	0.5
Individual HAP	0.1
Total HAPs	0.1

4.3.7 Recordkeeping Requirements

a. The Permittee shall maintain a file containing information for the heat input capacity of each unit and design emission rates of each unit, with supporting documentation as provided by manufacturer of the burner;

b. The Permittee shall maintain records of the total fuel usage or total unit operating hours of the two classes of units (i.e., gasifier burners and process unit burners); and

c. The Permittee shall maintain an operating log or other similar records for the affected units that include the information specified in Condition 5.2(a).

d. The Permittee shall keep inspection, maintenance and repair logs or other similar records for the affected units that contain the information specified in Condition 5.2(b).

e. The Permittee shall keep records for any deviations from applicable requirements involving the affected units, which records shall include the information specified by Condition 5.3. These records may be combined with other records required by this section of this permit.

f. The Permittee shall maintain records of the SO_2, NO_x, CO, VOM and PM emissions from the units (tons/month and tons/years), with supporting calculations.

4.3.8 Reporting Requirements

a. The Permittee shall notify the Illinois EPA of deviations of the affected units with the permit requirements with the periodic compliance reports required by Condition 4.1.12(c). These notifications shall include the information specified in Condition 5.4.

CONDITION 4.4: UNIT-SPECIFIC CONDITIONS FOR THE SULFURIC ACID PLANTS

4.4.1 Description of Emission Unit

The affected units for these unit-specific conditions are the two sulfuric acid plants. These plants produce sulfuric acid from the sulfur-laden acid gas streams from the acid gas removal (AGR) units in the gasification block. In these plants, the recovered sulfur compounds are first combusted to SO_2 and then this SO_2 is converted into sulfuric acid (H_2SO_4) by a catalytic process. The NO_x emissions from each sulfuric acid plant would be controlled by a Selective Catalytic Reduction (SCR) system. Emissions of SO_2 and sulfuric acid mist would be controlled by hydrogen peroxide scrubbers with high efficiency mist eliminators. The two sulfuric acid plants would then exhaust through a common stack.

During a malfunction or breakdown of an acid plant, the acid gas stream feeding the plant could be diverted to the acid gas flare in the gasification block, as addressed in Section 4.1 of this permit.

4.4.2 Control Technology Determination for the Affected Acid Plants

a. Each affected acid plant shall be operated and maintained with the following measures to control emissions:

i. An SCR system.

ii. A hydrogen peroxide scrubber with high efficiency mist eliminator.

iii. Good air pollution control practices, including the measures specified in Condition 4.4.5.

b. The emissions from the affected acid plants, in pounds per ton of 100 percent acid produced, shall not exceed the following limits:

Pollutant	Short Term	Annual
SO_2	1.41 (30-Day)[a]	1.40[b]
CO	0.32 (30-Day)[a]	0.40[b]
NO_x	0.16 (30-Day)[a]	0.16[b]
PM	0.01 (24-Hour)	---
Sulfuric Acid Mist	0.06 (24-Hour)	---

Notes:

a. Excluding periods of startup, shutdown and malfunction.

b. Including periods of startup, shutdown and malfunction.

c. The sulfuric acid storage tanks associated with the affected acid plants shall be controlled by vent control and recirculation.

4.4.3-1 Applicable Federal Emission Standards

a. The affected acid plants are subject to the federal NSPS for Sulfuric Acid Plants, 40 CFR 60, Subpart H, and related provisions in 40 CFR 60, Subpart A, General Provisions.

b. Pursuant to the NSPS, the emissions of the affected acid plants shall comply with the following standards except during startup, shutdown and malfunction, as provided by 40 CFR 60.8(c):

i. Emissions of SO_2 shall not exceed 4.0 lbs/ton of sulfuric acid produced (expressed as 100 percent H_2SO_4). [40 CFR 60.81(a)]

ii. Emissions of sulfur acid mist shall not exceed 0.15 lb/ton of sulfuric acid produced (expressed as 100 percent H_2SO_4). [40CFR 60.83 (a)]

iii. Opacity shall not be 10 percent or greater. [40 CFR 60.83(b)]

c. At all times, the Permittee shall operate and maintain the affected acid plants, including the associated control system, in a manner consistent with good air control practice, as required by the NSPS, 40 CFR 60.11(d).

4.4.3-2 Applicable State Emission Standards

a. The emission of smoke or other particulate matter from the affected acid plants shall not have opacity greater than 30 percent, pursuant to 35 IAC 212.123(a).

b. The emissions of SO_2 and sulfuric acid mist from the affected acid plants shall not exceed the following limits:

i. Emissions of SO_2 shall not exceed 4.0 lbs/ton of acid produced, pursuant to 35 IAC 214.381(a).

ii. Emissions of sulfuric acid mist shall not exceed 0.15 lbs/ton of acid produced, pursuant to 35 IAC 214.381(b).

c. The emissions of SO_2 from the affected acid plants shall not exceed 2000 ppm, pursuant to 35 IAC 214.301.

4.4.4 Non-Applicability Provisions

None

4.4.5 Operating Requirements

a. The good air pollution control practices for the affected acid plants shall include operation and maintenance of the affected

plants in accordance with detailed written procedures, as it is safe to do so, which procedures shall:

i. Fulfill relevant requirements of 40 CFR 63.6(e) for a Startup, Shutdown and Malfunction Plan.

ii. With respect to startups, address readily foreseeable startup scenarios, including so called “hot startups” when the operation of an affected plant, is only temporarily interrupted.

iii. A. With respect to malfunction, identify and address likely malfunction events with specific programs of corrective actions, and provide that upon occurrence of a malfunction that will result in emissions in excess of the applicable limits in Condition 4.4.2, 4.4.3 or 4.4.6, the Permittee shall, as soon as practicable, repair equipment, reduce the operating rate of the affected plant or remove gasifiers from service so that excess emissions cease.

B. Consistent with the above, if the Permittee has maintained and operated the gasification block and the affected acid plants so that malfunctions are infrequent, sudden, not caused by poor maintenance or careless operation, and in general are not reasonably preventable, the Permittee shall begin shutdown of gasifiers within 4 hours, unless the malfunction is expected to be repaired within 6 hours. In such case, shutdown of gasifiers shall be undertaken when it is apparent that repair will not be accomplished within 6 hours or at a later time if shutdown will endanger the safety of plant personnel or cause severe damage to equipment. In no case shall shutdown of units be delayed solely for the economic benefit of the Permittee.

4.4.6 Emission Limitations

a. The total emissions from the affected acid plants, including emissions from the sulfuric acid storage tanks, shall not exceed the following limits. The hourly limits shall apply on a monthly average basis for pollutants in which continuous emissions monitoring is performed or otherwise on a 24-hour block average.

Pollutant	Short Term (Pounds/Hour)		Annual (Tons/Year)
	Normal[a]	Other[b]	
SO_2	90.0	180.0	342.4
NO_x	11.0	22.0	38.6
CO	20.0	40.0	75.7
VOM	0.7	1.5	2.4
PM	0.06	0.1	0.33
Sulfuric Acid Mist	3.3	8.0	14.4

Pollutant	Short Term (Pounds/Hour)		Annual (Tons/Year)
	Normal[a]	Other[b]	
Total Reduced Sulfur	0.55	0.55	2.4
Individual HAP	0.01	0.01	0.044
Total HAPs	0.10	0.10	0.44

Notes

a. Applicable during periods other than startup, shutdown and malfunction.

b. Applicable during periods of startup, shutdown and malfunction.

4.4.7 Emission Testing Requirements

a. The Permittee shall have emission tests conducted for the affected acid plants as follows at its expense by an approved testing service while the plants and the gasification block are operating at maximum operating load and other representative operating conditions.

i. Initial performance testing for emissions of SO_2 and sulfuric acid mist and opacity required under the NSPS shall be conducted in accordance with 40 CFR 60.8 and 60.85.

ii. A. Within 90 days after achieving the maximum production rate at which the acid plants will be operated but not later than 365 days after initial startup of the first acid plant, the Permittee shall have tests conducted for emissions of PM (filterable and condensable), CO, total reduced sulfur and sulfuric acid mist and, if the NO_x CEMS has not yet been certified, NO_x.

B. This period of time may be extended by the Illinois EPA for up to an additional 365 days upon written request by the Permittee as needed to reasonably accommodate unforeseen difficulties in the startup and emission testing of the gasification block or enable testing to be conducted while both acid plants are operating, provided that preliminary emissions measurements are conducted and reported to the Illinois EPA.

iii. In addition to the emission testing required above, the Permittee shall perform emission tests as requested by the Illinois EPA within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.

Note: Specific requirements for periodic emission testing may be established in the CAAPP Permit for the plant.

b. i. The methods and procedures for testing emissions of SO_2 and sulfuric acid mist and opacity shall be in accordance with 40 CFR 60.85.

ii. The following methods and procedures shall be used for testing of emissions of other pollutants, unless other methods adopted by or being developed by USEPA are approved by the Illinois EPA.

Location of Sample Points	Method 1
Gas Flow and Velocity	Method 2
Flue Gas Weight	Method 3 or 3A
Moisture	Method 4
NO_x	Method 19
CO	Method 10
PM	Method 5
PM (condensable)	Method 202
Total Reduced Sulfur Compounds	Method 15A

c. i. Test plans, test notifications, and test reports shall be submitted to the Illinois EPA in accordance with the Condition 5.1.

ii. In addition to other information required to be included in a test report, test reports shall include detailed information on the operating conditions of the gasification block during testing, including:

A. Feedstock consumption (tons/day) and sulfur content of the feedstock (Refer to Condition 4.1.9);

B. Amount of syngas processed by each AGR unit;

C. Opacity of the exhaust, 6-minute averages, as determined by USEPA Method 9, if opacity is not otherwise tested.

4.4.8 Emissions Monitoring

a. The Permittee shall monitor SO_2 emissions from the affected acid plants, as required by the NSPS, 40 CFR 60.84.

b. The Permittee shall install, operate and maintain continuous emission monitoring systems (CEMS) for measuring emissions of NO_x from the affected acid plants.

i. The procedures under 40 CFR 60.13 shall be followed for the installation, evaluation, operation and maintenance of these CEMS.

ii. These CEMS shall be used to determine compliance with the NO_x limitations in Conditions in 4.4.2 and 4.4.6.

4.4.9 Operational Monitoring

The Permittee shall install, maintain, and operate instrumentation for the following operating parameters for each affected acid plant:

a. Reagent injection rate of the SCR system.

b. Pressure drop across the scrubber.

4.4.10 Recordkeeping Requirements

a. The Permittee shall maintain the following records for the required emissions monitoring systems to verify compliance with applicable standards and limitations:

i. Records of SO_2 and NO_x emissions from the affected acid plants, in pounds per hour, as derived from the data obtained by the monitors.

ii. Records of SO_2 and NO_x emissions from the affected acid plants in the terms and averaging periods of the applicable standards and limitations, as derived from the data obtained by the monitors.

iii. Records of any period when the SO_2 or NO_x emission rate exceeded an applicable standard or limitation, including whether the exceedance occurred during a startup, shutdown or malfunction event, with explanation.

A. For the purposes of the NSPS, periods of excess SO_2 emissions shall be all three-hour periods (or the arithmetic average of three consecutive one-hour periods) during which the integrated average SO_2 emissions exceed the applicable standard under 40 CFR 60.82. [40 CFR 60.84(e)]

iv. Records of the conversion factors and values needed to convert or express monitored emission data in terms of pounds per ton of 100 percent acid. (For the NSPS standard for SO_2, refer to 40 CFR 60.84(b) and (c).)

b. The Permittee shall maintain records for the amount of sulfuric acid produced by the affected acid plants (100 percent basis) on a daily, monthly and annual basis.

c. The Permittee shall maintain an operating log or other similar records for the affected acid plants that include the information specified in Condition 5.2(a) and the following information:

i. For each startup of an acid plant, the information specified by 40 CFR 60.7(b) and identification of any deviations from normal startup procedures, as set forth in the Permittee's written operating procedures, with explanation.

ii. For each shutdown of an acid plant, the nature and reason for the shutdown, the timing of major steps in the shutdown, any unusual occurrences during the shutdown, and any deviations from the established shutdown procedures, with explanation.

iii. For malfunctions or breakdowns, the information required by 40 CFR 60.7(b) and, if excess emissions occurred:

A. An explanation why continued operation of the affected plant was necessary.

B. The rates or magnitude of excess emissions during the event.

d. The Permittee shall keep inspection, maintenance and repair logs or other similar records for the affected acid plants that contain the information specified in Condition 5.2(b).

e. The Permittee shall keep records for any deviations from applicable requirements involving the affected acid plants, which records shall include the information specified by Condition 5.3. These records may be combined with other records required by this section of this permit.

f. The Permittee shall maintain the following records related to the emissions of SO_2, NO_x, CO, VOM, PM, total reduced sulfur and sulfuric acid mist from the affected acid plants:

i. For SO_2 and NO_x, the emissions of each pollutant (tons/month and tons/year), based on monitored data.

ii. For pollutants for which continuous emissions monitoring is not performed:

A. A file containing the emission factors that the Permittee uses to calculate emissions of the pollutant, with supporting documentation.

B. The emissions of each pollutant based on operating data and applicable emission factors, in tons/month and tons/year, with supporting calculations.

4.4.11 Reporting Requirements

a. The Permittee shall fulfill applicable notification and reporting requirements of the NSPS, 40 CFR 60.7, for the

affected units by sending required notifications and reports to the Illinois EPA, including the following reports:

i. Notification of the date of initial startup of each plant. [40 CFR 60.7(a)(3)]

ii. Periodic reports for excess emissions. [40 CFR 60.7(c)]

b. The Permittee shall promptly notify the Illinois EPA of deviations of the affected acid plants with permit requirements as follows. Reports shall include the information specified by Condition 5.4:

i. Failure of the SCR system or scrubber on an acid plant, e.g., loss of reagent or scrubbant flow, when operation of the acid plant continues for more than 3 hours (180 minutes) shall be shall be reported to the Illinois EPA's regional office by telephone as soon as possible during normal working hours, but no later than three days, for each incident.

ii. The deviations addressed above and all other deviations shall be reported in the periodic compliance reports required by Condition 4.4.11(c).

c. The Permittee shall submit periodic compliance reports for the affected acid plants, which include the following information. The reports shall be submitted no later than 30 days after the end of the calendar six month reporting period.

i. Information related to excess emissions and deviations:

A. As related to the NSPS standard for SO_2 emissions or the SO_2 limit in Condition 4.4.2, the information required for reporting of exceedances under 40 CFR 60.7(c) or (d), including the magnitude of excess emissions, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions and whether it occurred during startup, shutdown, or malfunction.

B. Information for other deviations during the reporting period, if any.

C. When no excess emissions or deviations have occurred or the continuous emissions monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

ii. A summary of operation and emissions of the affected acid plants during the reporting period, including the total amount of acid produced (100 percent basis) and their average hourly emission rates for NO_x and SO_2.

CONDITION 4.5: UNIT-SPECIFIC CONDITIONS FOR THE COOLING TOWER

4.5.1 Description of Emission Unit

The affected unit for the purpose of these unit-specific conditions is a multi-cell cooling tower. The cooling tower will supply the cooling water needed by various operation at the plant.

The cooling tower is a source of particulate emissions because of mineral material present in the water supply for the tower. This material is emitted to the atmosphere with water droplets that escape from the cooling tower or completely evaporate. These particulate emissions are controlled by drift eliminators, which collect water droplets entrained in the air exhausted from the tower.

4.5.2 Control Technology Determination

a. The affected unit shall be equipped, operated, and maintained with drift eliminators designed to limit the loss of water droplets from the unit to not more than 0.0005 percent of the circulating water flow.

b. The PM emissions of the affected unit, as PM_{10}, shall not exceed 1.4 pounds per hour, as determined from relevant operating data for the cooling tower and the efficiency of the drift eliminators, using engineering calculations for the emissions of PM_{10} due to the drift from the unit.

4.5.3 Applicable Emission Standards

a. The emission of smoke or other PM from the affected unit shall not have opacity greater than 30 percent. Compliance with this limit shall be determined by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

b. The affected unit shall comply with 35 IAC 212.301, which provides that emissions of fugitive PM shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.

c. The emissions of PM from the affected unit shall comply with the applicable limit pursuant to 35 IAC 212.321.

4.5.4 Non-Applicability Provisions

This permit is issued based on the affected unit not being subject to the NESHAP for Industrial Process Cooling Towers (40 CFR 63, Subpart Q) because chromium-based water treatment chemicals will not be used.

4.5.5 Operating Requirements

a. Chromium-based water treatment chemicals, as defined in 40 CFR 63.401, shall not be used in the affected unit.

b. i. Only non-VOM additives shall be used in the affected unit.

ii. Plant process wastewater shall not be introduced into cooling water, other than through unintentional leaks, which shall promptly be repaired.

c. The Permittee shall operate and maintain the affected unit, including the drift eliminators, in a manner consistent with good air pollution control practices for minimizing emissions.

d. The Permittee shall operate and maintain the affected unit in accordance with written procedures, which procedures shall be kept current. These procedures shall address the practices that will be followed as good air pollution control practices and the actions that will be followed to prevent a significant contribution to icing and fogging on offsite roadways.

4.5.6 Emission Limitations

The total annual emissions of PM_{10} from the affected unit shall not exceed 6.2 tons/year, as determined by appropriate emission factors and engineering calculations.

4.5.7 Operational Measurements

Within one year (365 days) after initial startup of the gasification block, the Permittee shall test the percent drift achieved by the drift eliminator in accordance with the Cooling Technology Institute's Acceptance Test Code No. 140. This test shall be performed by a licensed performance testing service.

4.5.8 Sampling and Analysis of Cooling Water

a. The Permittee shall sample and analyze the water being circulated in the affected unit on at least a monthly basis for the total dissolved solids content. Measurements of the total dissolved solids content in the wastewater discharge associated with the affected unit, as required by a National Pollution Discharge Elimination System permit, may be used to satisfy this requirement if the effluent has not been diluted or otherwise treated in a manner that would significantly reduce its total dissolved solids content.

b. Upon written request by the Illinois EPA, the Permittee shall promptly have the water circulating in the affected unit sampled and analyzed for the presence of hexavalent chromium in accordance with the procedures of 40 CFR 63.404(a) and (b).

c. The Permittee shall keep records for this sampling and analysis activity, including documentation for sampling and analysis as well as the resulting data that is collected.

4.5.9 Records

a. The Permittee shall keep a file that contains the following information for the affected unit:

i. The design loss specification for the drift eliminators installed in the unit.

ii. The supplier's recommended procedures for inspection and maintenance of the drift eliminators.

iii. The operating factors, if any, used to determine the amount of water circulated in the unit or the PM_{10} emissions from the unit, with supporting documentation.

iv. Copies of the Material Safety Data Sheets or other comparable information from the suppliers of the various water treatment chemicals that are added to the water circulated in the unit.

v. Calculations for the maximum PM_{10} emissions from the unit (pounds/hour, 24-hour average), based on the maximum operating rate of the unit and other factors that result in greatest emissions.

b. The Permittee shall keep the records for the amount of water circulated in the affected unit, gallons/month. As an alternative to direct data for water flow, these records may contain other relevant operating data for the unit (e.g., water flow to the unit) from which the amount of water circulated in the unit may be reasonably determined.

c. The Permittee shall maintain an operating log or other similar records for the affected units in the gasification block that include the information specified in Condition 5.2(a).

d. The Permittee shall keep inspection and maintenance logs for the affected unit, including the drift eliminators installed in the affected unit, which shall include the information specified in Condition 5.2(b).

e. The Permittee shall maintain records for the PM_{10} emissions of the affected unit based on the above records, the measurements required by Condition 4.5.9(a), and appropriate USEPA emission estimation methodology and emission factors, with supporting calculation.

4.5.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of deviations of the affected unit with permit requirements. These notifications shall include the information specified by Condition 5.4.

i. If the cooling tower is damaged so there is a deviation from an applicable requirements that is not repaired or otherwise corrected within 24 hours, the Permittee shall notify the Illinois EPA as soon as possible during normal working hours, but no later than three days.

ii. All other deviations shall be reported with the periodic compliance reports required by Condition 4.5.10(b).

b. The Permittee shall submit periodic compliance reports to the Illinois EPA for the affected units, which reports shall include information for deviations during the reporting period, if any. These reports shall be submitted with the periodic reports required by Condition 4.1.11(c).

CONDITION 4.6: ALCOHOL STORAGE TANKS

4.6.1 Description

The affected units for the purpose of these unit-specific conditions are the large storage tanks at the plant for: (1) Rectisol solvent, which is primarily methanol and is used for acid gas cleanup of the raw syngas; and (2) Alcohol, most likely ethanol, used as the startup feedstock for the gasifiers. These storage tanks are equipped with internal floating roof tanks to minimize loss of material by evaporation and emissions of VOM.

4.6.2 Applicable Federal Emission Standards

a. Each affected tank is subject to the NSPS for Storage Vessels, 40 CFR 60 Subpart Kb, and associated General Provisions, 40 CFR 60 Subpart A. Specifically, the Permittee shall operate and maintain each affected tank with a fixed roof in combination with an internal floating roof meeting the following specifications of 40 CFR 60.112b:

i. The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

ii. Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the floating roof:

A. A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

B. Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the floating roof. The lower seal may be vapor-mounted, but both must be continuous.

C. A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A

flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

iii. Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

iv. Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

v. Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

vi. Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer’s recommended setting.

vii. Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

viii. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

ix. Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

4.6.3 Applicable State Emission Standards

None

4.6.4 Non-Applicability Provisions

a. This permit is issued based on the affected tanks not being subject to 35 IAC 215.121(b) and 215.122(b) because the vapor pressure of stored material is less than 2.5 psia at 70°F.

b. The affected tanks are not subject to the requirements of 35 IAC 215.123(b) because they are subject to the NSPS, 40 CFR 60 Subpart Kb.

4.6.5 Operating Limitations

a. The affected tanks shall not store VOL with a maximum true vapor pressure of 2.5 psia or greater.

b. The VOL throughput of the affected tanks (other than the Rectisol tank) shall not exceed 1,505,000 gallons/year, total.

4.6.6 Emission Limitations

The emissions of VOM and HAPs from the affected tanks shall not exceed 1.3 and 0.79 tons/year, total, respectively, as determined using the methodology in USEPA's Compilation of Air Pollutant Emissions Factors, AP-42, the latest version of the TANKS program, or other methodology published by USEPA.

4.6.7 Inspection Requirements

a. For each affected tank, after installing the permanently affixed roof and internal floating roof (required to meet the NSPS), the Permittee shall visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the Permittee shall repair the items before filling the tank. [40 CFR 60.113b(a)]

b. For tanks equipped with a liquid-mounted or mechanical shoe primary seal the Permittee shall, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the tank, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the Permittee shall repair the items or empty and remove the tank from service within 45 days. If a failure that is detected during this inspection cannot be repaired within 45 days and if the tank cannot be emptied within 45 days, a 30-day extension may be requested from the Illinois EPA in the required inspection report. Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the Permittee will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

c. For tanks equipped with a double-seal system as specified in Condition 4.6.2(a)(ii)(B), the Permittee shall:

i. Visually inspect the tank as specified in Condition 4.6.7(d) at least every 5 years; or

ii. Visually inspect the tank as specified in Condition 4.6.7(b).

d. The Permittee shall visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the tank with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of tanks conducting the annual visual inspection as specified in Conditions 4.6.7(b) and (c)(ii) and at intervals no greater than 5 years in the case of tanks specified in Condition 4.6.7(c)(i).

4.6.8 Recordkeeping Requirements

a. The Permittee shall maintain readily accessible records of the dimensions of each affected tank and an analysis of the capacity of the tank. These records shall be kept for the life of the tank. [40 CFR 60.116b(b) and 35 IAC 215.129(f)]

b. i. The Permittee shall keep records of the VOL stored in each affected tank, the period of storage, and the maximum true vapor pressure of the VOL during the respective storage period based on the actual monthly storage temperature. [40 CFR 60.116b(c) and (e)]

ii. The Permittee shall keep records of throughput (gallons/month and gallons/year) and physical properties (vapor pressure and molecular weight) of the VOL as stored in each affected tank.

c. The Permittee shall maintain an operating log or other similar records for each affected tank that include the information specified in Condition 5.2(a) and the following information:

i. A record of the date when a floating roof in the tank is set on its legs or other support devices and the date when the roof was refloated, with information indicating whether the process of refloating was continuous.

f. The Permittee shall keep inspection, maintenance and repair logs or other similar records for each affected tank that contain the information specified in Condition 5.2(b) and the following information required by 40 CFR 60.115b(a)(2)

i. A record of each inspection performed as required by Condition 4.6.7, which shall contain the date the tank was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

e. The Permittee shall maintain records of VOM emissions from the affected tanks, tons/month and tons/year, with supporting calculations.

4.6.9 Reporting Requirements

a. The Permittee shall fulfill applicable notification and reporting requirements of the NSPS, 40 CFR 60.7 and 60.105b, for the affected tanks, including:

i. Notifying the Illinois EPA in writing at least 30 days prior to the filling or refilling of each tank for which an inspection is required by the NSPS to afford the Illinois EPA the opportunity to have an observer present. If the inspection required by the NSPS is not planned and the Permittee could not have known about the inspection 30 days in advance or refilling the tank, the Permittee shall notify the Illinois EPA at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Illinois EPA at least 7 days prior to the refilling. [40 CFR 60.113b(a)(5)]

ii. Providing the following reports for inspection of the control equipment (internal floating roof) on each affected tank:

A. Furnish the Illinois EPA with a report that describes the control equipment and certifies that the control equipment meets the specifications of the NSPS. [40 CFR 60.115b(a)(1)]

B. If any of the conditions described in Condition 4.6.7(b) are detected during a required annual visual inspection, a report shall be furnished to the Illinois EPA within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made. [40 CFR 60.115b(a)(3)]

C. After each inspection required by Condition 4.6.7(c) that finds holes or tears in the seal, or defects in the internal floating roof, or other control

equipment defects listed in Condition 4.6.7(c)(ii), a report shall be furnished to the Illinois EPA within 30 days of the inspection. The report shall identify the storage tank and the reason it did not meet the specifications of Condition 4.6.5(a) or 4.6.7(c) and list each repair made. [40 CFR 60.115b(a)(4)]

b. The Permittee shall notify the Illinois EPA of deviations of an affected tank with the permit requirements. These reports shall include the information specified by Condition 5.4 and be submitted with the periodic reports required by Condition 4.1.11(c), unless otherwise provided by Condition 4.6.9(b)(ii).

CONDITION 4.7: UNIT-SPECIFIC CONDITIONS FOR FEEDSTOCK AND BULK MATERIAL HANDLING AND STORAGE

4.7.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are equipment and facilities handling coal, slag and other bulk materials that are involved with the operation of the gasification block and that have the potential for particulate matter (PM) emissions. Affected units include receiving, transfer, and storage, as relevant for the various materials.

Emissions of PM from affected units are controlled by appropriate measures given the nature of the material. In particular, units handling dry materials must be enclosed and aspirated to control equipment if it is practical to do so.

4.7.2 Control Technology Determination

a. PM emissions from an affected unit handling a wet material shall be controlled by the following measures. For this purpose, wet material is a material that has sufficient moisture during normal operation to minimize the potential for direct emissions.

   i. Maintaining the material with adequate moisture to prevent visible emissions directly from such unit during the handling, storage or load out of the material.

   ii. Collection of spilled material that could become airborne if it dried or were subject to vehicle traffic as part of the Program for Control of Fugitive Dust as required by Condition 4.8.5.

b. PM emissions from an affected unit handling a dry material, other than a storage pile for dry material and handling operations associated with the pile, shall be controlled by:

   i. Enclosure of the unit so as to prevent visible fugitive emissions, as defined by 40 CFR 60.675, from the affected unit.

   ii. Aspiration to a control device designed to emit no more than 0.001 grains/dry standard cubic foot (gr/dscf), which device shall be operated in accordance with good air pollution control practice to minimize emissions. For this purpose, the control device shall be a baghouse or other filtration type device unless the Permittee demonstrates and the Illinois EPA concurs that another type of control device is preferable due to considerations of operational safety.

4.7.3-1 Applicable Federal Emission Standards

a. Affected units engaged in handling and processing coal shall comply with applicable requirements of the NSPS for coal Preparation Plants, 40 CFR 60, Subpart Y, and related provisions of 40 CFR 60, Subpart A.

b. Pursuant to the NSPS, the opacity of the exhaust from coal processing and conveying equipment, coal storage systems (other than open storage piles), and coal loading systems shall not exceed 20 percent. [40 CFR 60.254(b)]

c. At all times, the Permittee shall maintain and operate affected units that are subject to NSPS, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions, pursuant to 40 CFR 60.11(d).

4.7.3-2 Applicable State Emission Standards

a. The emission of smoke or other PM from affected units shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.124. Compliance with this limit shall be determined by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

b. With respect to emissions of fugitive PM, affected units shall comply with 35 IAC 212.301, which provides that emissions of fugitive PM shall not be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.

c. The emissions of PM from affected units other than units excluded by 35 IAC 212.323 (refer to Condition 4.7.4(b)) shall comply with the applicable limit pursuant to 35 IAC 212.321, which rule limits emissions based on the process weight rate of emission units and allows a minimum emission rate of 0.55 lb/hour for any individual unit.

4.7.4 Non-Applicability Provisions

a. This permit is issued based on the affected units not being subject to 40 CFR 60, Subpart OOO, as materials handled by affected units are nonmetallic minerals as defined by 40 CFR 60.671.

b. This permit is issued based on the coal handling operations not being subject to 35 IAC 212.321 pursuant to 35 IAC 212.323, which provides that 35 IAC 212.321 shall not apply to emission units, which, because of the disperse nature of such emission units, such rules cannot reasonably be applied.

4.7.5 Operating Requirements

a. Coal and other bulk materials that have the potential for PM emissions shall be stored in silos, bins, and buildings, without storage of such materials in outdoor piles except on a temporary basis during breakdown or other disruption in the capabilities of the enclosed storage facilities.

b. The Permittee shall implement and maintain control measures for the affected units that minimize visible emissions of PM and provide assurance of compliance with the applicable limits and standards in Conditions 4.7.2, 4.7.3-1 and 4.7.3-2.

c. The affected units, including associated control equipment shall be operated and maintained in accordance with good air pollution control practice to minimize emissions.

4.7.6 Emission Limitations

Emissions of PM and PM_{10} from the affected units shall not exceed 14.3 and 14.3 tons/year, total, respectively. Compliance with this limit shall be determined from the amount of material handled and other operating information for affected units, and appropriate emission factors.

4.7.7-1 Initial Performance Observations

a. Within 60 days after achieving the maximum production rate at which each affected unit subject to NSPS will be operated, but not later than 180 days after initial startup of each such unit, the Permittee shall have opacity observations conducted at its expense as follows below by an approved testing service under unit operating conditions that are representative of maximum emissions.

b. The following USEPA methods and procedures shall be used for PM and opacity measurements as specified in 40 CFR 60.257:

PM - Method 5, with the sampling time and sample volume for each run to be at least 60 minutes and 30 dscf and sampling to begin no less than 30 minutes after startup and to terminate before shutdown begins.

Opacity - Method 9, with measurements performed by a certified observer.

c. Test plan(s), test notifications, and test reports shall be submitted to the Illinois EPA in accordance with Condition 5.1.

4.7.7-2 Periodic Testing

a. i. The Permittee shall have the opacity of the emissions of the affected units during representative weather and operating conditions determined by a qualified observer

in accordance with USEPA Test Method 9, as further specified below.

A. If emissions are normally visible from a unit when it is in operation, as determined by USEPA Reference Method 22, opacity testing shall be conducted at least annually.

B. Upon written request by the Illinois EPA, such testing shall be conducted for specific affected units within 45 calendar days of the request or on the date agreed upon by the Illinois EPA, whichever is later.

ii. The duration of opacity observations for each test shall be at least 30 minutes (five 6-minute averages) unless the average opacities for the first 12 minutes of observations (two six-minute averages) are both less than 5.0 percent.

iii. A. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).

B. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.

iv. The Permittee shall provide a copy of its observer’s readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.

v. The Permittee shall submit a written report for this testing within 30 days of the date of testing. This report shall include:

A. Date and time of testing.

B. Name and employer of qualified observer.

C. Copy of current certification.

D. Description of observation conditions, including recent weather.

E. Description of the operating conditions of the affected processes.

F. Raw data.

G. Opacity determinations.

H. Conclusions.

b. Unless otherwise specified for the affected units by a CAAPP permit issued to the source:

i. Within 90 days of a written request from the Illinois EPA, the Permittee shall have the PM emissions at the stacks or vents of affected units, as specified in such request, measured during representative operating conditions, as set forth below.

ii. A. Testing shall be conducted using appropriate USEPA Test Methods, including Method 5 or 17 for PM emissions.

B. Compliance may be determined from the average of three valid test runs, subject to the restrictions and conditions contained in 35 IAC Part 283.

iii. A. Test plans, test notifications, and test reports shall be submitted to the Illinois EPA in accordance with the Condition 5.1.

B. In addition to other information required in a test report, test reports shall include a detailed description of the operating conditions of the affected process during testing, including operating rate (tons/hour) and the control measures being used, and representative opacity data (6-minute average) measured during testing.

4.7.8 Operational Instrumentation

The Permittee shall install, operate and maintain systems to measure the pressure drop across each baghouse used to control affected units, other than bin vent filters and other similar filtration devices.

4.7.9 Inspections

a. i. The Permittee shall conduct inspections of affected units on at least a monthly basis with personnel who are not directly responsible for the day-to-day operation of these units, for the specific purpose of verifying that the measures identified in the operating program and other measures required to control emissions from affected units are being properly implemented.

ii. These inspections shall include observation for the presence of visible emissions, performed in accordance with USEPA Method 22, from buildings in which affected units are located and from units from which the Permittee has elected to demonstrate no visible emissions.

b. The Permittee shall perform detailed inspections of the dust collection equipment for affected units while the units are out of service, with an initial inspection performed before any maintenance and repair activities are conducted during the period the unit is out of service and a follow-up inspection performed after any such activities are completed. These inspections shall be conducted at least every 15 months.

4.7.10 Recordkeeping

a. For affected units that are subject to NSPS, the Permittee shall fulfill applicable recordkeeping requirements of the NSPS, 40 CFR 60.7.

b. The Permittee shall maintain file(s), which shall be kept current, that contain:

i. The maximum operating capacity of each affected unit or group of related units (tons/hour).

ii. A. For the baghouses and other filter devices associated with affected units, design specifications for each device (type of unit, maximum design exhaust flow (acfm and scfm), filter area, type of filter cleaning, performance guarantee for particulate exhaust loading in gr/scf, etc.), the manufacturer's recommended operating and maintenance procedures for the device, and design specification for the filter material in each device (type of material, surface treatment(s) applied to material, weight, performance guarantee, warranty provisions, etc.).

B. For each baghouse, the normal range of pressure drop across the device and the minimum and maximum safe pressure drop for the device, with supporting documentation.

iii. For affected units that are not controlled with baghouses or other filter-type devices, a detailed description of the work practices used to control emissions of PM pursuant to Condition 4.7.5(b).

iv. The designated PM emission rate, in pounds/hour and tons/year, from affected units, either individually or grouped by related units, with supporting calculations and documentation, including detailed documentation for the level of emissions control achieved through the work practices that are used to control PM emissions. The sum of these emission rates shall not exceed the total limit in Condition 4.7.6.

v. A demonstration that confirms that the above established control measures are sufficient to assure compliance with

the above emissions rates and, for units to which it applies, Condition 4.7.3-2(c), at the maximum process weight rate at which each affected unit can be operated (tons/hour), with supporting emission calculations and documentation for the emission factors and the efficiency of the control measures being relied upon by the Permittee. Except as addressed by Condition 4.7.10(b)(ii) or testing of PM emissions from an affected unit is conducted in accordance with Condition 4.7.7-2(b), this demonstration shall be developed using emission factors for uncontrolled PM emissions, efficiency of control measures, and controlled PM emissions published by USEPA.

c. The Permittee shall keep records for the amount of bulk materials received by or loaded out from the plant by category or type of material (tons/month).

d. The Permittee shall maintain an operating log or other similar records for the affected units that include the information specified in Condition 5.2(a) and the following information for each incident when any unit operated without the control measures required by Condition 4.7.2 or 4.7.5(b) or (c):

i. The date of the incident and identification of the unit(s) that were involved.

ii. A description of the incident, including: the established control measures that were not present or implemented; the established control measures that were present, if any; and other control measures or mitigation measures that were implemented, if any.

iii. The time at and means by which the incident was identified, e.g., scheduled inspection or observation by operating personnel.

iv. Operational data for the incident.

v. The corrective action(s) taken and the length of time after the incident was identified that the unit(s) continued to operate before established control measures were in place or the operations were shutdown (to resume operation only after established control measures were in place) and, if this time was more than one hour, an explanation why this time was not shorter, including a detailed description of any mitigation measures that were implemented during the incident.

vi. The estimated total duration of the incident, i.e., the total length of time that the unit(s) ran without established control measures and the estimated amount of material processed during the incident.

vii. A discussion of the probable cause of the incident and any preventative measures taken.

viii. An estimate of any additional emissions of PM (pounds) above the PM emissions associated with normal operation that resulted from the incident, if any, with supporting calculations.

ix. A discussion whether any applicable emission standard, as listed in Condition 4.7.2, 4.7.3-1, or 4.7.3-2 or any applicable emission rate, as identified in the records pursuant to Condition 4.7.10(b), may have been violated during the incident, with an estimate of the amount of any excess PM emissions (lbs) and supporting explanation.

e. The Permittee shall keep inspection, maintenance and repair logs or other similar records for the affected units and the control measures associated with the affected units, including buildings and enclosures, dust suppression systems and control devices that contain the information specified in Condition 5.2(b) and the following information.

i. The following information for the inspections required by Condition 4.7.9(a):

A. Date and time the inspection was performed and name(s) of inspection personnel.

B. The observed condition of the control measures for each affected unit, including the presence of any visible emissions.

C. A description of any maintenance or repair associated with established control measures that are recommended as a result of the inspection and a review of outstanding recommendations for maintenance or repair from previous inspection(s), i.e., whether recommended action has been taken, is yet to be performed or no longer appears to be required.

D. A summary of the observed implementation or status of actual control measures, as compared to the established control measures.

ii. The following information for the inspections required by Condition 4.7.9(b):

A. Date and time the inspection was performed and name(s) of inspection personnel.

B. The observed condition of the dust collection equipment.

C. A summary of the maintenance and repair that is to be or was conducted on the equipment.

D. A description of any maintenance or repair that is recommended as a result of the inspection and a review of outstanding recommendations for maintenance or repair from previous inspection(s), i.e., whether recommended action has been taken, is yet to be performed or no longer appears to be required.

E. A summary of the observed condition of the equipment as related to its ability to reliably and effectively control emissions.

f. The Permittee shall maintain the following records for the emissions of the affected units:

i. A file containing the standard emission factors used by the Permittee to determine PM emissions from the units, with supporting documentation.

ii. Records of PM emissions based on operating data for the unit(s) and appropriate emission factors, with supporting documentation and calculations.

4.7.11 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of deviations from permit requirements for the affected units. These notifications shall include the information specified by Condition 5.4.

a. The Permittee shall notify the Illinois EPA within 30 days of deviations that continue for more than 24 hours. For this purpose, time shall be measured from the start of a particular event. The absence of a deviation for a short period shall not be considered to end the event if the deviation resumes. In such circumstances, the event shall be considered to continue until corrective actions are taken so that the deviation ceases or the Permittee takes the affected unit out of service for repairs.

b. The Permittee shall notify the Illinois EPA of the above deviations and other deviations with the periodic reports required by Condition 4.1.11(c).

4.7.12 Operational Flexibility

The Permittee is authorized, as follows, to construct and operate affected units that differ from those described in the application in certain respects without obtaining further approval by the Illinois EPA. This condition does not affect the Permittee’s

obligation to comply with all applicable requirements for affected units:

a. This authorization only extends to changes that result from the detailed design of the project and any refinements to that design of the affected units that occur during construction and the initial operation of the gasification block.

b. With respect to air quality impacts, these changes shall generally act to improve dispersion and reduce impacts, as emissions from individual units are lowered, units are moved apart or away from the fence line, stack heights are increased, and heights of nearby structures are reduced.

c. The Permittee shall notify the Illinois EPA prior to proceeding with any changes. In this notification, the Permittee shall describe the proposed changes and explain why the proposed changes will act to reduce impacts, with detailed supporting documentation.

d. Upon written request by the Illinois EPA, the Permittee shall promptly have air quality dispersion modeling performed to demonstrate that the overall effect of the changes is to reduce air quality impacts, so that impacts from affected units remain at or below those predicted by the air quality analysis accompanying the application.

CONDITION 4.8: UNIT-SPECIFIC CONDITIONS FOR ROADWAYS AND OTHER OPEN AREAS

4.8.1 Description of Emission Units

The affected units for the purpose of these unit-specific conditions are roadways, parking areas, and other open areas at the plant, which may be sources of fugitive particulate matter due to vehicle traffic or windblown dust. These emissions are controlled by paving and implementation of work practices to prevent the generation and emissions of particulate matter.

4.8.2 Control Technology Determination

a. The opacity of fugitive particulate matter emissions from affected units, except during periods of high wind speeds, shall not exceed 15 percent opacity. For this purpose, opacity and the presence of high wind speeds shall be determined in accordance with 35 IAC 212.109 and 35 IAC 212.314, respectively.

b. i. Good air pollution control practices shall be implemented to minimize dust emissions from affected units. After construction activity is complete, these practices shall provide for pavement on all regularly traveled roads and treatment (sweeping) of roadways and areas that are routinely subject to vehicle traffic for very effective and effective control of dust, respectively (nominal 90 percent control for paved roads and areas and 85 percent control for unpaved roads and areas).

ii. For this purpose, roads that serve any office building, employee parking areas or are used on a daily basis by operating and maintenance personnel for the plant in the course of their typical duties shall be considered to be subject to regular travel and are required to be paved. Regularly traveled roads shall be considered to be subject to routine vehicle traffic except as they are currently inactive or as traffic has been temporarily blocked off. Other roads shall be considered to be routinely traveled if activities are occurring such that they are experiencing significant vehicle traffic.

c. The handling of material collected from any affected unit associated with the plant by sweeping or vacuuming trucks shall be enclosed or shall utilize spraying, pelletizing, screw conveying or other equivalent methods to control PM emissions.

4.8.3 Applicable State Emission Standards

a. All affected units shall comply with 35 IAC 212.301, which provides that emissions of fugitive particulate matter shall not be visible from any process, including material handling and storage activities, when looking generally toward the zenith at a point beyond the property line of the source,

except when the wind speed is greater than 25 miles per hour, as provided by 35 IAC 212.314.

4.8.4 Non-Applicability Provisions

None

4.8.5 Operational and Production Limits and Work Practices

a. The Permittee shall carry out control of fugitive particulate emissions from affected units in accordance with a written operating program describing the measures being implemented in accordance with Conditions 4.8.2 and 4.8.3 to control emissions at each unit with the potential to generate significant quantities of such emissions, which program shall be kept current.

i. The written operating program shall include:

A. Maps or diagrams indicating the location of affected units with the potential to generate significant quantities of fugitive particulate matter, with description of the unit (length, width, surface material, etc.) and volume and nature of expected vehicle traffic, or other activity on such unit, and an identification of any roadways that are not considered routinely traveled, with justification.

B. A detailed description of the emissions control technique(s) (e.g., sweeping) for the affected unit, including: typical application rate; type and concentration of additives; normal frequency with which measures would be implemented; circumstances, in which the measure would not be implemented, e.g., recent precipitation; triggers for additional control, e.g., observation of 12 percent opacity; and calculated control efficiency for PM emissions.

ii. The Permittee shall submit copies of the written operating program to the Illinois EPA for review as follows:

A. A program addressing affected units during the construction of the plant shall be submitted within 30 days of beginning actual construction of the plant.

B. A program addressing affected units with the operation of the affected plant shall be submitted within 90 days of initial start up of the plant.

C. Significant amendments to the program by the Permittee shall be submitted within 30 days of the date that the amendment is made.

iii. A revised operating program shall be submitted to the Illinois EPA for review within 90 days of a request from the Illinois EPA for revision to address observed deficiencies in control of fugitive particulate matter emissions.

b. The Permittee shall conduct inspections of affected units on at least a weekly basis during construction of the plant and on a monthly basis thereafter with personnel not directly responsible for the day-to-day implementation of the fugitive dust control program, for the specific purpose of verifying that the measures identified in the operating program and other measures required to control emissions from affected units are being properly implemented.

4.8.6 Emission Limitations

Emissions of PM and PM_{10} from the affected units shall not exceed 2.0 and 0.4 tons/year, total, respectively. Compliance with these limitations shall be determined from the amount and nature of vehicle traffic associated with the operation of the plant, specific operating information for affected units, and appropriate emission factors published by USEPA.

4.8.7 Opacity Observations

a. The Permittee shall conduct observations, which include a series of observations of the opacity of fugitive emissions from the affected units as follows to determine the range of opacity from affected units and the change in opacity as related to the amount and nature of vehicle traffic and implementation of the operating program. For performance observations, the Permittee shall submit test plans, test notifications and test reports, as specified by General Condition 5.1.

i. Performance observations shall first be completed no later than 30 days after the date that construction of process units in the gasification block are completed, provided, however, that observation may be deferred as long as heavy construction equipment is on the site, preventing paving of roadways, in conjunction with the measurements of silt loading on the affected units required by Condition 4.8.8.

ii. Performance observations shall be repeated within 30 days in the event of changes involving affected units that would act to increase opacity (so that observations that are representative of the current circumstances of the affected units have not been conducted), including changes in the amount or type of traffic on affected units, changes in the standard operating practices for affected units, such as application of salt or traction

material during cold weather, and changes in the operating program for affected units.

b. Compliance observations shall be conducted for affected units on at least a quarterly basis to verify opacity levels and confirm the effectiveness of the operating program in controlling emissions.

c. Upon written request by the Illinois EPA, the Permittee shall conduct performance or compliance observations, as specified in the request. Unless another date is agreed to by the Illinois EPA, performance observations shall be completed within 30 days and compliance observations shall be completed within 5 days of the Illinois EPA's request.

4.8.8 Operational Measurements

a. The Permittee shall conduct measurements of the silt loading on various affected roadway segments and parking areas as follows. This sampling and analysis shall be conducted using the "Procedures for Sampling Surface/Bulk Dust Loading," Appendix C.1 in Compilation of Air Pollutant Emission Factors, USEPA, AP-42. A series of samples shall be taken to determine the average silt loading and address the change in silt loadings as related to the amount and nature of vehicle traffic and implementation of the operating program.

b. Measurements shall be performed by the following dates:

i. Measurements shall first be completed no later than 30 days after construction is completed.

ii. Measurements shall be repeated within 30 days in the event of changes involving affected units that would act to increase silt loading (so that data that is representative of the current circumstances of the affected units has not been collected), including changes in the amount or type of traffic on affected units, changes in the standard operating practices for affected units, such as application of salt or traction material during cold weather, and changes in the operating program for affected units.

iii. Upon written request by the Illinois EPA, the Permittee shall conduct measurements, as specified in the request, which shall be completed within 75 days of the Illinois EPA's request.

c. The Permittee shall submit test plans, test notifications and test reports for these measurements as specified by General Condition 5.1, provided, however, that once a test plan has been accepted by the Illinois EPA, a new test plan need not be submitted if the accepted plan will be followed unless a new test plan is requested by the Illinois EPA.

d. The Permittee shall keep records for the measurements conducted for affected units pursuant to Condition 4.8.8, including records for the sampling and analysis activities and results.

4.8.9 Recordkeeping Requirements

a. The Permittee shall keep a file that contains:

i. The operating factors, if any, used to determine the amount of activity associated with the affected units or the PM emissions from the affected units, with supporting documentation.

ii. The designated PM emission rate, in tons/year, from each category of affected units (e.g., traffic associated with receiving of coal, with supporting calculations and documentation. The sum of these rates shall not exceed the annual limit on emissions in Condition 4.8.6.

b. The Permittee shall maintain records documenting implementation of the operating program required by Condition 4.8.5, including:

i. Records for each treatment of an affected unit or units:

A. The identity of the affected unit(s), the date and time, and the identification of the truck(s) or treatment equipment used;

B. For application of dust suppressant by truck: target application rate or truck speed during application, total quantity of water or chemical used and, for application of a chemical or chemical solution, the identity of the chemical and concentration, if applicable;

C. For sweeping or cleaning: Identity of equipment used and identification of any deficiencies in the condition of equipment; and

D. For other type of treatment: A description of the action that was taken.

ii. Records for each incident when control measures were not implemented and each incident when additional control measures were implemented due to particular activities, including description, date, a statement of explanation, and expected duration of such circumstances.

c. The Permittee shall record any period during which an affected unit was not properly controlled as required by this permit, which records shall include at least the information specified

by Condition **5.3** and an estimate of the additional PM emissions that resulted, if any, with supporting calculations.

d. The Permittee shall maintain records for the PM emissions of the affected units, based on operating data for the gasification block and other activities at the plant, the above records for the affected units including data for implementation of the operating program, and appropriate USEPA emission estimation methodology and emission factors, with supporting calculations.

4.8.10 Reporting Requirements

a. The Permittee shall notify the Illinois EPA of deviations of affected units with permit requirements with the periodic reports required by Condition 4.1.11(c). These notifications shall include the information specified by Condition 5.4.

b. The Permittee shall submit semi-annual reports to the Illinois EPA for affected units that include the following: the dates any necessary control measures were not implemented; a listing of those control measures; the reasons that the control measures were not implemented; and any corrective actions taken. This information includes, but is not limited to, those dates when controls were not implemented based on a belief that implementation of such control measures would have been unreasonable given prevailing weather conditions. This report shall be submitted to the Illinois EPA with the periodic compliance reports required by Condition 4.1.11(c).

CONDITION 4.9: LEAKING COMPONENTS

4.9.1 Description

The affected units for purpose of these unit-specific conditions are equipment components, such as pumps, valves, and flanges in the piping for organic liquids, such as the Rectisol solution used in the acid gas removal units or leaks from the CO_2 compression equipment, which have the potential to emit VOM if they leak. These VOM emissions are minimized by a formal Leak Detection and Repair Program to identify such leaks and repair them.

4.9.2 Non-Applicability Provisions

a. The affected components are not subject to the NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI), 40 CFR 60, Subpart VVa, because the synthetic natural gas and sulfuric acid produced at this plant are not products covered by the SOCMI NSPS.

b. The affected components are not subject to the requirements of 35 IAC Part 215, Subpart Q, Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment, pursuant to the applicability provisions at 35 IAC 215.420, because none of the chemicals produced at the plant are synthetic organic chemicals or polymers listed in 35 IAC Part 215, Appendix D.

c. This permit does not address the applicability of 35 IAC 215.142 to certain affected components because the vapor pressure of Rectisol solution and other volatile organic liquids (VOL) used at the plant be below 2.5 psia at 70 °F.

4.9.3 Operating Requirements

a. The Permittee shall implement a leak detection and repair program for affected components that are in VOC service, as defined by 40 CFR 60.481a, other than components in vacuum service, that is consistent with the inspection requirements set forth in 40 CFR 60.482-1a (Standards: General), 60.482-2a (Standards: Pumps in light liquid service), 60.482-3a (Standards: Compressors), 60.482-4a (Standards: Pressure relief devices in gas/vapor service), 60.482-5a (Standards: Sampling connection systems), 60.482-6a (Standards: Open-ended valves or lines), 60.482-7a (Standards: Valves in gas/vapor service and light liquid service)*, 60.482-8a (Standards: Pumps, valves and connectors in heavy liquid service, and pressure relief devices in light liquid or heavy liquid service), 60.482-9a (Standards: Delay of repair), 60.482-10a (Standards: Closed vent systems and control devices) and 60.482-11a (Standards: Connectors in gas/vapor service and in light liquid service).

* The Permittee may elect to utilize the alternative standards of 40 CFR 60.483-1a through 60.483-2a, where applicable.

b. For affected components, the Permittee shall repair any affected component from which a leak of volatile organic liquid (VOL) is detected or observed. The repair shall be completed as soon as practicable but no later than 21 days after the leak is found. If the leaking component cannot be repaired until the process unit is shut down, the leaking component must then be repaired before the unit is restarted.

c. Leakless design pumps shall be the only pumps used in light liquid service.

d. Closed loop sampling systems shall be the only sampling systems used.

4.9.4 Emission Limitations

Emissions of VOM and HAPs from the affected components shall not exceed 2.5 and 1.79 tons/year, total, respectively, as determined by use of appropriate USEPA methodology for estimating emissions from leaking components.

4.9.5 Recordkeeping Requirements

a. The Permittee shall maintain relevant records as specified in 40 CFR 60.486a for the affected components that are in VOC service.

b. The Permittee shall maintain a leaking component monitoring log or other similar records for the affected components that are in VOC service, that contain the following information. Notwithstanding other provisions of this permit, the Permittee need only retain these records for a minimum of two years from the date on which information was entered in the records.

i. The name of the area and process equipment where the component is located;

ii. The type of component (e.g., valve, pump seal);

iii. The identification number of the component;

iv. The date on which a leaking component is discovered;

v. The date on which a leaking component is repaired;

vi. The date and instrument reading of the recheck procedure after a leaking component is repaired;

vii. A record of the calibration of the monitoring instrument;

viii. The identification number of leaking components which cannot be repaired until process unit shutdown; and

ix. The total number of components inspected and the total number of components found leaking during that monitoring period.

c. The Permittee shall maintain records on at least an annual basis of the VOM and HAP emissions of the affected components (tons/year), with supporting documentation and calculations.

4.9.6 Reporting Requirements

a. The Permittee shall submit relevant reports as specified in 40 CFR 60.486a for the affected components that are in VOC service.

b. The Permittee shall notify the Illinois EPA with the periodic reports required by Condition 4.1.11(c) of deviations from applicable requirements for affected components that are not addressed by the regular reporting required above. These notifications shall include the information specified by Condition 5.4.

SECTION 5: GENERAL PERMIT CONDITIONS

CONDITION 5.1: GENERAL REQUIREMENTS FOR EMISSION TESTING

a. i. At least 60 days prior to the actual date of initial emission testing required by this permit, a written test plan shall be submitted to the Illinois EPA for review. This plan shall describe the specific procedures for testing and shall include at a minimum:

A. The person(s) who will be performing sampling and analysis and their experience with similar tests.

B. The specific conditions, e.g., operating rate and control device operating conditions, under which testing shall be performed including a discussion of why these conditions will be representative and the means by which the operating parameters will be determined.

C. The specific determinations of emissions that are intended to be made, including sampling and monitoring locations.

D. The test method(s) that will be used, with the specific analysis method if the method can be used with different analysis methods.

ii. As provided by 35 IAC 283.220(d), the Permittee need not submit a test plan for subsequent emissions testing that will be conducted in accordance with the procedures used for previous tests accepted by the Illinois EPA or the previous test plan submitted to and approved by the Illinois EPA, provided that the Permittee's notification for testing, as required below, contains the information specified by 35 IAC 283.220(d)(1)(A), (B) and (C).

b. i. The Permittee shall notify the Illinois EPA prior to performing emissions testing required by this permit to enable the Illinois EPA to observe the tests. Notification for the expected date of testing shall be submitted a minimum of 30 days* prior to the expected date, and identify the testing that will be performed. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days* prior to the actual date of testing. Notwithstanding 40 CFR 60.8(d), the Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.

* For a particular test, the Illinois EPA may at its discretion accept shorter advance notification provided that it does not interfere with the Illinois EPA'S ability to observe testing.

ii. This notification shall also identify the parties that will be performing testing and the set or sets of operating conditions under which testing will be performed.

c. Three copies of the Final Reports for emission tests shall be forwarded to the Illinois EPA within 30 days after the test results are compiled and finalized but not later than 90 days after the date of testing. At a minimum, the Final Report for testing shall contain the following. Copies of emission test reports shall be retained for at least five years after the date that an emission test is superseded by a more recent test.

i. A tabular summary of results which includes:

- Process rates (e.g., feedstock usage rate or firing rate)

- Measured emission rates for different pollutants tested

- Emission factor, calculated using the average test results in the terms of the applicable limits, for example, in units of lbs pollutant emitted per mmBtu

- Compliance demonstrated - Yes/No

ii. Description of test method(s) and procedures, including a description of sampling points, sampling train, analysis equipment, and test schedule;

iii. Detailed description of test conditions, including:

- Pertinent process information (e.g. fuel, raw material analysis, sulfur content in material.)

- Control equipment information, i.e., equipment condition and pressure drop, flow rates, and other operating parameters during testing.

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analysis, sample calculations, and data on equipment calibration.

CONDITION 5.2: GENERAL REQUIREMENTS FOR “LOGS” OR SIMILAR RECORDS

a. Operating logs or other similar records required by this permit shall, at a minimum, include the following information related to the emission units and associated control system:

i. Information identifying periods when an emission unit or group of related emission units was not in service.

ii. For periods when a unit or group of related units is in service and operating normally, relevant process and control system information to generally confirm normal operation.

iii. For periods when a unit or group of related units is in service and is not operating normally, identification of each such period, with detailed information describing the operation of the unit(s), the potential consequences for additional emissions from the unit(s), the potential of any excess emissions from the affected unit(s), the actions taken to restore normal operation, and any actions taken to prevent similar events in the future.

iv. Other information as may be appropriate to show that the emission unit or group of related emission units is operated in accordance with good air pollution control practices.

b. Inspection, maintenance and repair logs or other similar information required by this permit shall, at a minimum, include the following information related to the emission units and associated control system:

i. Identification of equipment, with date, time, responsible employee and type of activity.

ii. For inspections, a description of the inspection, findings, and any recommended actions, with reason.

iii. For maintenance and repair activity, a description of actions taken, reason for action, e.g., preventative measure or corrective action as a result of inspection, probable cause for requiring maintenance or repair if not routine or preventative, and the condition of equipment following completion of the activity.

iv. Other information as may be appropriate to show that the emission unit or group of related emission units is maintained in accordance with good air pollution control practices, including prompt repair of defects that interfere with effective control of emissions.

c. The logs required by this permit may be kept in manual or electronic form, and may be part of a larger information database maintained by the Permittee provided that the information required to be kept in a log is readily accessible.

CONDITION 5.3: GENERAL REQUIREMENTS FOR RECORDKEEPING FOR DEVIATIONS

a. Except as specified in a particular provision of this permit or in a subsequent CAAPP Permit for the plant, records for deviations from applicable requirements shall include at least the following information: the date, time and estimated duration of the deviation; a description of the deviation; the manner in which the deviation was identified, if not readily apparent; the probable cause for deviation, if known, including a description of any equipment malfunction or breakdown associated with the deviation; information on the magnitude of the deviation, including actual emissions or performance in terms of the applicable standard if measured or

readily estimated; confirmation that standard procedures were followed or a description of any event-specific corrective actions taken; and a description of any preventative measures taken to prevent future occurrences, if appropriate.

CONDITION 5.4: GENERAL REQUIREMENTS FOR REPORTING OF DEVIATIONS

a. The Permittee shall include the following information in records and reports for deviations:

   i. Identity of the deviation, with date, time, duration and description.

   ii. Describe the effect of the deviation on compliance, with an estimate of the excess emissions that accompanied the deviation, if any.

   iii. Describe the probable cause of the deviation and any corrective actions or preventive measures taken.

b. i. Unless otherwise specified in a particular condition of this permit, if deviation(s) from requirements of this permit occurs during a reporting period, a compliance report shall be submitted no later than 45 days after the end of the reporting period. This report shall also provide a listing of all deviations for which immediate or 30-day reporting was required, but need not include copies of the previously submitted information.

   ii. If there are no deviations during a reporting period, the Permittee shall still submit a compliance report, which report shall state that no deviations occurred during the reporting period.

c. i. For the purpose of determining whether a deviation must be reported prior to a periodic compliance report, a deviation shall be considered to continue even if operation an emission unit is interrupted if the deviation is still present when operation of the unit is resumed.

   ii. When this permit requires immediate notification, such notification shall be provided by telephone and followed by facsimile or e-mail transmittal of a narrative report.

d. Upon issuance of a CAAPP permit for the plant, the provisions of the CAAPP permit with respect to reporting of deviations will supersede the requirements of this permit.

ATTACHMENTS

Attachment 1: Summary of the Permitted Emissions of the Plant (Tons per Year)

Pollutant	Gasification Block		Steam Super-heaters & Auxiliary Boiler	Startup Burners	Sulfuric Acid Plants	Cooling Tower	Storage Tanks[c]	Material Handling & Storage	Roadways	Leaking Components	Engines	Total
	Normal[a]	Other[b]										
SO_2	96.6	73.1	3.8	0.1	342.4	---	---		---	---	0.2	516.2
NO_x	23.4	5.3	106.7	9.9	38.6	---	---	---	---	---	14.2	198.1
CO	532.5	18.8	121.9	5.0	75.7	---	---	---	---	---	3.1	757.0
VOM	8.01	1.20	15.4	1.0	2.4	---	1.3	---	---	2.5	1.2	33.0
PM	3.8	0.52	31.4	0.5	0.33	6.2	---	14.3	2.0	---	0.3	59.35
Sulfuric Acid Mist	0.05	1.46	---	---	14.4	---	---	---	---	---	---	15.91
Total Reduced Sulfur	0.43	1.90	---	---	2.4	---	---	---	---	---	---	4.73
Fluorides	0.10	---	---	---	---	---	---	---	---	---	---	0.10
Methanol	7.2	0.10	---	---	---	---	0.79	---	---	1.79	---	9.88
Other Indiv. HAPs[d]	1.14	0.06	4.4	0.1	0.44	---	---	---	---	---	0.60	6.74
Total HAPs	8.34	0.16	4.4	0.1	0.44	---	0.79	---	---	1.79	0.60	16.62

Notes:

a. “Normal” addresses stack emissions of the Gasification Block, including both the AGR Units and the flares, during periods other than startup, shutdown and malfunction.

b. “Other” addresses stack emissions during startup, shutdown and malfunction of the Gasification Block.

c. “Storage Tanks” addresses storage tanks for alcohol and for other organic materials (e.g., diesel fuel).

d. “Other individual HAPs” addresses individual HAPs other than methanol.

ATTACHMENT 2: STANDARD PERMIT CONDITIONS

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) authorizes the Illinois Environmental Protection Agency to impose conditions on permits which it issues.

The following conditions are applicable unless superseded by special condition(s).

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.

2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act and Regulations adopted by the Illinois Pollution Control Board.

3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, has been submitted to the Illinois EPA and a supplemental written permit issued.

4. The Permittee shall allow any duly authorized agent of the Illinois EPA, upon the presentation of credentials, at reasonable times:

    a. To enter the Permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit;

    b. To have access to and to copy any records required to be kept under the terms and conditions of this permit;

    c. To inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit;

    d. To obtain and remove samples of any discharge or emissions of pollutants; and

    e. To enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:

   a. Shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;

   b. Does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;

   c. Does not release the Permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;

   d. Does not take into consideration or attest to the structural stability of any units or parts of the project; and

   e. In no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.

6a. Unless a joint construction/operation permit has been issued, a permit for operation shall be obtained from the Illinois EPA before the equipment covered by this permit is placed into operation.

b. For purposes of shakedown and testing, unless otherwise specified by a special permit condition, the equipment covered under this permit may be operated for a period not to exceed thirty (30) days.

7. The Illinois EPA may file a complaint with the Board for modification, suspension or revocation of a permit,

   a. Upon discovery that the permit application contained misrepresentations, misinformation or false statement or that all relevant facts were not disclosed; or

   b. Upon finding that any standard or special conditions have been violated; or

   c. Upon any violations of the Environmental Protection Act or any regulation effective thereunder as a result of the construction or development authorized by this permit.

July, 1985, Revised, May, 1999

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