Iowa Department of Natural Resources
Air Quality Construction Permit

Permit Holder

Firm: IPL – M.L. Kapp Generating Station

Contact:

Michael Li
Senior Environmental Specialist

(319) 786-4635

200 First Street SE
Cedar Rapids, IA 52732

Responsible Party:

John Watts
Plant Manager

Permitted Equipment

Emission Unit(s): Natural Gas Boiler #2 (EU KB2; Maximum Rated Capacity: 1,932 MMBtu/hr)

Control Equipment: Overfire Air (CE-OFA)

Emission Point: EP B2

Equipment Location: 2001 Beaver Channel Parkway
Clinton, IA 52732

Plant Number: 23-01-014

Issuance of this permit shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of the State Implementation Plan (SIP), and any other requirements of local, state, and federal law.

Permit No.	Proj. No.	Description	Date	Stack Testing
78-A-157-P9	15-385	Remove ESP & Low NOx Burners, Limit Annual Capacity, Remove Coal Fuel Capability, Reduce Potential HAP Emissions Below Major Source Thresholds	1/19/16	No

Under the Direction of the Director of
the Department of Natural Resources

[DZ] |CPFP|2301014|01192016|15385|78A157P9|

PERMIT CONDITIONS

1. Departmental Review

This permit is issued based on information submitted by the applicant. Any misinformation, false statements or misrepresentations by the applicant or by the applicant's representative(s) shall cause this permit to be void. In addition, the applicant may be subject to criminal penalties according to Iowa Code Section 455B.146A.

This permit is issued under the authority of 567 Iowa Administrative Code (IAC) 22.3. The proposed equipment has been evaluated for conformance with Iowa Code Chapter 455B; 567 IAC Chapters 20 – 35; and 40 Code of Federal Regulations (CFR) Parts 51, 52, 60, 61, and 63 and has the potential to comply.

No review has been undertaken on the engineering aspects of the equipment or control equipment other than the potential of that equipment for reducing air contaminant emissions. The Department assumes no liability, directly or indirectly, for any loss due to damage to persons or property caused by, resulting from, or arising out of the design, installation, maintenance or operation of the proposed equipment.

2. Owner and Operator Responsibility

This permit is for the construction and operation of specific emission unit(s), control equipment, and emission point as described in this permit and in the application for this permit. The permit holder, owner, and operator of the facility shall assure that the installation of the equipment listed in this permit conforms to the design in the application (i.e. type, maximum rated capacity, etc.). No person shall construct, install, reconstruct or alter this emission unit(s), control equipment, or emission point without the required amended permit.

Any owner or operator of the specified emission unit(s), control equipment, or emission point, including any person who becomes an owner or operator subsequent to the date on which this permit is issued, is responsible for assuring that the installation, operation, and maintenance of the equipment listed in this permit is in compliance with the provisions of this permit and all other applicable requirements.

The owner or operator of any emission unit or control equipment shall maintain and operate the equipment and control equipment at all times in a manner consistent with good practice for minimizing emissions, as required by paragraph 567 IAC 24.2(1) *"Maintenance and Repair"*.

3. Transferability

As limited by 567 IAC 22.3(3)"f", this permit is not transferable from one location to another or from one piece of equipment to another, unless the equipment is portable. When portable equipment for which a permit has been issued is to be transferred from one location to another, the Department shall be notified in writing at least seven (7) days prior to transferring to the new location unless the equipment will be located in an area which is classified as nonattainment for the National Ambient Air Quality Standards (NAAQS) or is a maintenance area for the NAAQS in which case notification shall be given fourteen (14) days prior to the relocation of equipment[1] (See Permit Condition 8.A.2). The owner or operator will be notified at least ten (10) days prior to the scheduled relocation if the relocation will cause a violation of the (NAAQS). In such case, a supplemental permit shall be required prior to the initiation of construction of additional control equipment or modifications to equipment needed to meet the standards.

[1] A list of nonattainment areas and maintenance areas for the NAAQS can be obtained from the Department.

4. Construction

A. General Requirements

It is the owner's responsibility to ensure that construction conforms to the final plans and specifications as submitted, and that adequate operation and maintenance is provided to ensure that no condition of air pollution is created.

4. Construction (Continued)

In permit amendments, all provisions of the original permit remain in full force and effect unless they are specifically changed by the permit amendment. If a proposed project is not timely completed, the owner or operator shall seek a permit amendment in order to revert back to the most recent previous version of the permit. The previous, unchanged permit provisions are included in the amendment for your convenience only and are unappealable.

This permit or amendment shall become void if any one of the following conditions occurs:
(1) the construction or implementation of the proposed project, as it affects the emission point permitted herein, is not initiated within eighteen (18) months after the permit issuance date; or
(2) the construction or implementation of the proposed project, as it affects the emission point permitted herein, is not completed within thirty-six (36) months after the permit issuance date; or
(3) the construction or implementation of the proposed project, as it affects the emission point permitted herein, is not completed within a time period specified elsewhere in this permit.

B. Changes to Plans and Specifications

The owner or operator shall amend this permit or amendment prior to startup of the equipment if:
(1) Any changes are made to the final plans and specifications submitted for the proposed project; or
(2) This permit becomes void.

Changes to the final plans and specification shall include changes to plans and specifications for permitted equipment and control equipment and the specified operation thereof.

C. Amended Permits

The owner or operator may continue to act under the provisions of the previous permit for the affected emission unit(s) and emission point, together with any previous amendment to the permit, until one of the following conditions occurs:
(1) The proposed project authorized by this amendment is completed as it affects the emission unit(s) and emission point permitted herein; or
(2) This current amendment becomes void.

5. Credible Evidence

As stated in 567 IAC 21.5 and also in 40 CFR Part §60.11(g), where applicable, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any provisions specified in this permit or any provisions of 567 IAC Chapters 20 through 35.

6. Excess Emissions

Per 567 IAC 24.1(1), excess emissions during a period of startup, shutdown, or cleaning of control equipment are not a violation of the emission standard if it is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions except when another regulation applicable to the unit or process provides otherwise. Cleaning of control equipment, which does not require the shutdown of process equipment, shall be limited to one (1) six-minute period per one (1) hour period.

An incident of excess emissions other than the above is a violation and may be subject to criminal penalties according to Iowa Code 455B.146A. If excess emissions are occurring, either the control equipment causing the excess shall be repaired in an expeditious manner, or the process generating the emissions shall be shutdown within a reasonable period of time, as specified in 567 IAC 24.1.

An incident of excess emissions shall be orally reported by telephone, electronic mail or in person to the appropriate field office within eight (8) hours of, or at the start of, the first working day following the onset of the incident (See Permit Condition 8.B.1). A written report of an incident of excess emissions shall be submitted as a follow-up to all required initial reports within seven (7) days of the onset of the upset condition (See Permit Condition 8.B.2).

7. Permit Violations

Knowingly committing a violation of this permit may carry a criminal penalty of up to $10,000 per day fine and two (2) years in jail according to Iowa Code Section 455B.146A.

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8. Notification, Reporting, and Recordkeeping

A. The owner or operator shall furnish the Department the following written notifications:
   (1) Per 567 IAC 22.3(3)"b":
      (a) The date construction, installation, or alteration is initiated postmarked within thirty (30) days following initiation of construction, installation, or alteration;
      (b) The actual date of startup, postmarked within fifteen (15) days following the start of operation;
   (2) Per 567 IAC 22.3(3)"f", when portable equipment for which a permit has been issued is to be transferred from one location to another, the Department shall be notified:
      (a) at least fourteen (14) days before equipment relocation if the equipment will be located in a nonattainment area for the National Ambient Air Quality Standards (NAAQS) or a maintenance area for the NAAQS;
      (b) at least seven (7) days before equipment relocation.
   (3) Per 567 IAC 22.3(8), a new owner shall notify the Department of the transfer of equipment ownership within thirty (30) days of the occurrence. The notification shall be mailed to:

      Air Quality Bureau
      Iowa Department of Natural Resources
      7900 Hickman Road, Suite 1
      Windsor Heights, IA 50324

      and include the following information:
      - The date of ownership change,
      - The name, address, and telephone number of the responsible official, the contact person, and the owner of the equipment both before and after the ownership change; and
      - The construction permit number(s) of the equipment changing ownership.
   (4) Unless specified per a federal regulation, notification of each compliance test required by Permit Condition 12 shall be done not less than thirty (30) days before the required test or performance evaluation of a continuous emission monitor [567 IAC 25.1(7)]. The notification shall include:
      - the time,
      - the place,
      - the name of the person who will conduct the tests,
      - and other information as required by the Department;

      If the owner or operator does not provide timely notice to the Department, the Department shall not consider the test results or performance evaluation results to be a valid demonstration of compliance with the applicable rules or permit conditions. Upon written request, the Department may allow a notification period of less than thirty (30) days.

B. The owner or operator shall furnish the Department with the following reports:
   (1) Per 567 IAC 24.1(2), an incident of excess emissions as defined in 567 IAC 20.2 shall be reported within eight (8) hours or at the start of the first working day following the onset of the incident. The report may be made by electronic mail, in person or by telephone.
   (2) Per 567 IAC 24.1(3), a written report of an incident of excess emissions as defined in 567 IAC 20.2 shall be submitted as a follow-up to all required initial reports to the Department within seven (7) days of the onset of the upset condition.
   (3) Operation of this emission unit(s) or control equipment outside of those operating parameters specified in Permit Condition 14 in accordance to the schedule set forth in 567 IAC 24.1.
   (4) Per 567 IAC 25.1(6), the owner or operator of any facility required to install a continuous monitoring system or systems shall provide quarterly reports to the Director, no later than thirty (30) calendar days following the end of the calendar quarter, on forms provided by the Director.

8. Notification, Reporting, and Recordkeeping (Continued)

(5) Per 567 IAC 25.1(7), a written compliance demonstration report for each compliance testing event, whether successful or not, postmarked not later than six (6) weeks after the completion of the test period unless other regulations provide for other notification requirements. In that case, the more stringent reporting requirement shall be met;

C. All data, records, reports, documentation, construction plans, and calculations required under this permit shall be available at the plant during normal business hours for inspection and copying by federal, state, or local air pollution regulatory agencies and their authorized representatives, for a minimum of two (2) years from the date of recording unless otherwise required by another applicable law (i.e. NSPS, NESHAP, etc.)

D. The owner or operator shall send correspondence regarding this permit to the following address:

Construction Permit Supervisor
Air Quality Bureau
Iowa Department of Natural Resources
7900 Hickman Road, Suite 1
Windsor Heights, IA 50324
Telephone: (515) 725-9549
Fax: (515) 725-9501

E. The owner or operator shall send correspondence concerning stack testing to:

Stack Testing Coordinator
Air Quality Bureau
Iowa Department of Natural Resources
7900 Hickman Road, Suite 1
Windsor Heights, IA 50324
Telephone: (515) 725-9545
Fax: (515) 725-9502

F. The owner or operator shall send reports and notifications to:

Compliance Unit Supervisor Air Quality Bureau Iowa Department of Natural Resources 7900 Hickman Road, Suite 1 Windsor Heights, IA 50324 Telephone: (515) 725-9550 Fax: (515) 725-9502	IDNR Field Office #6 1023 W. Madison Washington, IA 52353 Telephone: (319) 653-2135 Fax: (319) 653-2856

9. Appeal Rights

All conditions within an original permit may be appealed, subject to the appeal rights set forth in 561 IAC Chapter 7. Amended conditions within a permit amendment may be appealed, subject to the appeal rights set forth in 561 IAC Chapter 7. In permit amendments, all provisions of the original permit remain in full force and effect unless they are specifically changed by the permit amendment. The previous, unchanged permit provisions are included in the amendment for your convenience only and are unappealable.

Per 561 IAC 7.4(1), the owner or operator shall file any written notice of appeal within thirty (30) days of receipt of the issued permit. The written notice of appeal shall be filed with the Director of the Department with a copy to the Legal Services Bureau Chief at the following addresses:

Director Iowa Department of Natural Resources 502 East 9th Street Des Moines, IA 50319	Bureau Chief Legal Services Bureau Iowa Department of Natural Resources 502 East 9th Street Des Moines, IA 50319

10a. Emission Limits

The following emission limits shall not be exceeded:

Pollutant	lb/hr[1]	tons/yr[2]	Additional Limits	Reference (567 IAC)
Particulate Matter (PM) – Federal	NA	NA	NA	NA
Particulate Matter (PM) – State	618.0	2707.0	0.32 lb/MMBtu	Requested limit
PM_{10}	NA	NA	NA	NA
$PM_{2.5}$	NA	NA	NA	NA
Opacity	NA	NA	40%	23.3(2)"d"
Sulfur Dioxide (SO_2)	8307.0	36387.0	4.3 lb/MMBtu[3]	Requested limit
Nitrogen Oxides (NO_x)	869.4	1439.0	0.45 lb/MMBtu[4]	Requested limit
Volatile Organic Compounds (VOC)	NA	NA	NA	NA
Carbon Monoxide (CO)	NA	NA	NA	NA
Lead (Pb)	NA	NA	NA	NA
Carbon Dioxide equivalents (CO_2e)	NA	NA	NA	NA
Hexane	NA	9.14[5]	NA	NA
(Total HAP)	NA	9.61[5]	NA	NA

[1] The emission limit is expressed as the average of three (3) runs.
[2] The emission limit is a twelve (12) month rolling total.
[3] The emission limit is a three (3) hour rolling average.
[4] The emission limit is a thirty (30) day rolling average.
[5] Established in Project Number 15-385 to limit potential HAP emissions below major source thresholds for the purposes of NESHAP applicability. The natural gas usage limit of 10,746.943 mmcf/yr (see conditions 14 and 15) will limit the potential HAP emissions of this unit.

10b. Emission Limits (BACT)

Pollutant	lb/hr[1]	tons/yr[2]	Additional Limits	Reference (567 IAC)
Carbon Monoxide (CO)	558	2446	0.289 lb/MMBtu[6]	BACT

[6] The emission limit is a thirty (30) day rolling average.

11. Emission Point Characteristics

This emission point shall conform to the specifications listed below:

Parameter	Value
Stack Height, (ft, from the ground)	245
Discharge Style	Vertical, unobstructed
Stack Opening (inches)	156
Exhaust Temperature (°F)	350
Exhaust Flowrate (scfm)	592,500

The temperature and flowrate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that either the temperature or flowrate above are different than the values stated, the owner or operator shall submit a request to the Department within thirty (30) days of the discovery to determine if a permit amendment is required or submit a permit application requesting to amend the permit.

12. Compliance Demonstration(s)

Pollutant	Compliance Demonstration	Compliance Methodology	Frequency
PM – Federal	No	NA	NA
PM – State	No	NA	NA
PM_{10}	No	NA	NA
$PM_{2.5}$	No	NA	NA
Opacity	No	NA	NA
SO_2	Yes	CEM	3-Hour Rolling Average
NO_x	Yes	CEM	30-Day Rolling Average
VOC	No	NA	NA
CO	Yes	CEM	30-Day Rolling Average
Pb	No	NA	NA
CO_2	No	NA	NA
CH_4	No	NA	NA
N_2O	No	NA	NA
Single HAP	Yes	Material Tracking	12-Month Rolling Total
Total HAP	Yes	Material Tracking	12-Month Rolling Total

If an initial compliance demonstration specified above is testing, the owner or the owner's authorized agent shall verify compliance with the emission limitations contained in Permit Condition 10 within sixty (60) days after achieving maximum production rate and no later than one hundred eighty (180) days after the initial startup date of the proposed equipment.

If subsequent testing is specified above, the owner or the owner's authorized agent shall verify compliance with the emission limitations contained in Permit Condition 10 according to the frequency and timeframe noted above.

If testing is required, the owner or the owner's authorized agent shall use the test method and run time listed in the table below unless another testing methodology is approved by the Department prior to testing.

Pollutant	Test Run Time	Test Method
PM – Federal	1 hour	40 CFR 60, Appendix A, Method 5
PM – State	1 hour	40 CFR 60, Appendix A, Method 5 40 CFR 51 Appendix M Method 202
PM_{10}	1 hour	40 CFR 51, Appendix M, 201A with 202
$PM_{2.5}$	1 hour	40 CFR 51, Appendix M, 201A with 202
Opacity	1 hour	40 CFR 60, Appendix A, Method 9
SO_2	1 hour	40 CFR 60, Appendix A, Method 6C
NO_x	1 hour	40 CFR 60, Appendix A, Method 7E
VOC	1 hour	40 CFR 60, Appendix A, Method 25A
CO	1 hour	40 CFR 60, Appendix A, Method 10
Pb	1 hour	40 CFR 60, Appendix A, Method 12
CO_2	1 hour	40 CFR 60, Appendix A, Method 3
CH_4	1 hour	40 CFR 60, Appendix A, Method 18
N_2O	1 hour	40 CFR 60, Appendix A, Method 320
HAP	1 hour	40 CFR 60, Appendix A, Method 18

Each emissions compliance test must be approved by the Department. Unless otherwise specified by the Department, each test shall consist of three (3) separate runs. The arithmetic mean of three (3) acceptable test runs shall apply for compliance, unless otherwise indicated by the Department.

12. Compliance Demonstration(s) (Continued)

Per 567 IAC 25.1(7)"a", at the Department's request, a pretest meeting shall be held not later than fifteen (15) days before the owner or operator conducts the compliance demonstration. A testing protocol shall be submitted to the Department no later than fifteen (15) days before the owner or operator conducts the compliance demonstration. Representatives from the Department shall attend this meeting, along with the owner and the testing firm, if any. It shall be the responsibility of the owner to coordinate and schedule the pretest meeting. A representative of the Department shall be allowed to witness the test(s). The Department shall reserve the right to impose additional, different, or more detailed testing requirements.

The owner shall be responsible for the installation and maintenance of test ports. The unit(s) being sampled shall be operated in a normal manner at its maximum continuous output as rated by the equipment manufacturer, or the rate specified by the owner as the maximum production rate at which this unit(s) will be operated. In cases where compliance is to be demonstrated at less than the maximum continuous output as rated by the manufacturer, and it is the owner's intent to limit the capacity to that rating, the owner may submit evidence to the Department that this unit(s) has been physically altered so that capacity cannot be exceeded, or the Department may require additional testing, continuous monitoring, reports of operating levels, or any other information deemed necessary by the Department to determine whether this unit(s) is in compliance.

13. New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability

This emission unit is of the source type subject to New Source Performance Standards (NSPS) Subpart Da - Standards of Performance for Electric Utility Steam Generating Units. However, this emission unit was constructed before the applicability date of 9/18/1978. Therefore, it is not subject to this subpart at this time.

This emission unit is not subject to any National Emission Standards for Hazardous Air Pollutants (NESHAP) at this time as there are no applicable subparts.

14. Operating Limits

Operating limits for this emission unit shall be:

A. This emission unit shall not burn more than 10,746,943,000 cubic feet (10,746.943 mmcf) of natural per rolling 12-month period.

15. Operating Condition Monitoring and Recordkeeping

Unless specified by a federal regulation, all records as required by this permit shall be kept on-site for a minimum of two (2) years and shall be available for inspection by the Department. Records shall be legible and maintained in an orderly manner. These records shall show the following:

A. On a monthly basis, the owner or operator shall record the amount of natural gas, in cubic feet, burned in EU KB2. Each month, the owner or operator shall calculate and record the rolling 12-month total amount of natural gas, in cubic feet, burned in EU KB2.
B. The owner or operator shall maintain a record of 30-day rolling average, in lbs/MMBtu, of NO_x and CO emissions.
C. The owner or operator shall maintain a record of 3-hour rolling average, in lbs/MMBtu, of SO_2 emissions.
D. The owner or operator shall maintain a record of 12-month rolling totals, in tons, of NO_x, SO_2 and CO emissions.

16. Continuous Emission Monitoring

Continuous emission monitoring is required for Sulfur Dioxide (SO_2) and Carbon Dioxide (CO_2) as requested by the facility. Continuous emission monitoring is required for Nitrogen Oxides (NO_X), Carbon Monoxide (CO), and airflow to ensure that the emission limits established in Conditions 10a and 10b are met. The monitoring shall be maintained in accordance with the most recent version of the Title V Operating Permit and 40 CFR Part 75.

17. Permit History

Permit No.	Proj. No.	Description	Date	Stack Testing
78-A-157	78-171	Original Permit	5/11/78	Yes
78-A-157-S1	93-281	Add Low NOX Burners	3/18/94	No
78-A-157-S2	02-145	Lower NOX Limit	6/12/02	No
78-A-157-S5	04-691	Remove VOC Limit	1/12/05	No
78-A-157-S6	05-170	Permit Correction	3/17/05	No
78-A-157-S7	05-626	Operating Monitoring Change	11/23/05	No
78-A-157P-S8	07-515	Add Overfire Air, Low NOX Burners	1/11/08	Yes

18. Description of Terms and Acronyms

The descriptions below are meant only as a brief explanation of terms contained within the permit and may not be the exact definition of the term or acronym as contained within the regulations.

acfm	Actual cubic feet per minute
Applicant	The owner, company official or authorized agent
Btu	British thermal unit
°C	Degrees Celsius
Condensable PM	Material that condenses and/or reacts upon cooling and dilution in the ambient air to form particulate matter immediately after discharge from the stack
Department	Iowa Department of Natural Resources
dia.	Diameter
°F	Degrees Fahrenheit
ft	Foot
g	grams
g/dscm	Grams per dry standard cubic meter
gr	Grains
gr/dscf	Grains per dry standard cubic foot
gr/scf	Grains per standard cubic foot
HAP	Hazardous Air Pollutant(s)
lb/hr	Pounds per hour
mg	Milligram
MM	Million
NA	Not Applicable
$PM_{2.5}$	Particulate Matter with an aerodynamic diameter equal to or less than 2.5 microns
PM_{10}	Particulate Matter with an aerodynamic diameter equal to or less than 10 microns
PM – Federal	Particulate Matter that does not include the condensable PM
PM – State	Particulate Matter that includes condensable PM
ppm_v	parts per million by volume
ppm_w	parts per million by weight
scfm	Standard cubic feet per minute
SHAP	Single hazardous air pollutant
THAP	Total hazardous air pollutants
tons/yr	Tons per year
yr	Year

END OF PERMIT