

May 17, 2001

Mr. Jeff Babb
Logansport State Hospital
1098 South Highway 25
Logansport, IN 46947

Re: **017-14164**
Minor Source Modification to
Part 70 Operating Permit No.: **T 017-7405-00004**

Dear Mr. Babb:

Logansport State Hospital was issued Part 70 Operating Permit T 017-7405-00004 on December 21, 1998 for the mental hospital. An application to modify the source was received on March 21, 2001. Pursuant to 326 IAC 2-7-10.5 the following emission unit is approved for construction at the source:

- (a) One (1) natural gas-fired low NO_x boiler, identified as B-3, with a maximum capacity of 42.05 million British thermal units per hour, and exhausting to stack SB-3.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Management (OAQ).
2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

The proposed operating conditions applicable to these emission units are attached to this source modification approval. However, this Minor Source Modification gives approval to construct, only. These proposed operating conditions shall be incorporated into the Part 70 Operating Permit as a Significant Permit Modification in accordance with 326 IAC 2-7-12(d)(1). The Significant Permit Modification (SPM 017-14199-00004) will give approval to operate the new emission unit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter contact CarrieAnn Ortolani, c/o OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, at 631-691-3395 or in Indiana at 1-800-451-6027 (ext 631-691-3395).

Sincerely,

Original signed by Paul Dubenetzky

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments

CAO/MES

cc: File - Cass County
U.S. EPA, Region V
Cass County Health Department
Air Compliance Section Inspector - Ryan Hillman
Compliance Data Section - Karen Nowak
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

PART 70 OPERATING PERMIT OFFICE OF AIR QUALITY*

**Logansport State Hospital
1098 South Highway 25
Logansport, Indiana 46947**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 and 326 IAC 2-1-3.2 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

| | |
|---|--|
| Operation Permit No.: T 017-7405-00004 | |
| Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Quality* | Issuance Date: December 21, 1998 Expiration Date: December 21, 2003 |

| | |
|---|---|
| First Minor Source Modification No.: 017-14164-00004 | Pages affected: 3, 5, 27, 28, 29, 30 and 36 |
| Original signed by Paul Dubenetzky Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality* | Issuance Date: May 17, 2001 |

*As of January 1, 2001, the name of the Office of Air Management (OAM) has been changed to the Office of Air Quality (OAQ). All references to Office of Air Management (OAM) should be read as Office of Air Quality

(OAQ).

C.9 Performance Testing [326 IAC 3-6]

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

- C.10 Compliance Schedule [326 IAC 2-7-6(3)]
- C.11 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]
- C.12 Monitoring Methods [326 IAC 3]
- C.13 Asbestos Abatement Projects [326 IAC 14-10][326 IAC 18][40 CFR 61.140]

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

- C.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
- C.15 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68.215]
- C.16 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-7-5(3)]
- C.17 Actions Related to Noncompliance Demonstrated by a Stack Test

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- C.18 Emission Statement [326 IAC 2-7-5(3)(C)(iii)] [326 IAC 2-6] [326 IAC 2-7-19]
- C.19 Monitoring Data Availability [326 IAC 2-7-6(1)][326 IAC 2-7-5(3)]
- C.20 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]
- C.21 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

Stratospheric Ozone Protection

- C.22 Compliance with 40 CFR 82 and 326 IAC 22-1

D.1 FACILITY OPERATION CONDITIONS: - Natural Gas-Fired Boilers 27

Emission Limitations and Standards [326 IAC 2-7-5(1)]

- D.1.1 Particulate Matter (PM) [326 IAC 6-2-3]

Compliance Determination Requirements

- D.1.2 Testing Requirements [326 IAC 2-7-6(1),(6)]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

- D.1.3 Natural Gas Fired Boiler Certification

D.2 FACILITY OPERATION CONDITIONS: - Natural Gas-Fired Low NO_x Boiler 28

Emission Limitations and Standards [326 IAC 2-7-5(1)]

- D.2.1 Particulate Matter (PM and PM₁₀) [326 IAC 6-2-4] [326 IAC 2-2]
- D.2.2 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]
- D.2.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

Compliance Monitoring Requirements

- D.2.4 Visible Emission Notations

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19]

- D.2.5 Record Keeping Requirements
- D.2.6 Natural Gas Fired Boiler Certification

SECTION A

SOURCE SUMMARY

his permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a stationary mental hospital.

| | |
|-----------------------|---|
| Responsible Official: | Jeffrey H. Smith |
| Source Address: | 1098 South Highway 25, Logansport, Indiana 46947-9699 Mailing |
| Address: | 1098 South Highway 25, Logansport, Indiana 46947-9699 |
| SIC Code: | 8063 |
| County Location: | Cass |
| County Status: | Attainment for all criteria pollutants |
| Source Status: | Part 70 Permit Program Major Source under PSD |

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) natural gas fired boiler, rated at 30 million British thermal units (MMBtu) per hour, exhausting at one (1) stack, identified as SB-1.
- (b) One (1) natural gas fired boiler, rated at 44.6 MMBtu per hour, exhausting at one (1) stack, identified as SB-2.
- (c) One (1) natural gas-fired low NO_x boiler, identified as B-3, with a maximum capacity of 42.05 million British thermal units per hour, and exhausting to stack SB-3.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22).
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

- (a) One (1) natural gas fired boiler, rated at 30 million British thermal units (MMBtu) per hour, exhausting at one (1) stack, identified as SB-1.
- (b) One (1) natural gas fired boiler, rated at 44.6 MMBtu per hour, exhausting at one (1) stack, identified as SB-2.

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Matter Limitation (PM) [326 IAC 6-2-3]

Pursuant to 326 IAC 6-2-3 (Emission limitations for Sources of Indirect Heating), the PM emissions from the 30 MMBtu per hour heat input natural gas fired boiler shall be limited to 0.8 pounds per MMBtu heat input. The PM emissions from the 44.6 MMBtu per hour heat input natural gas fired boiler shall be limited to 0.6 pounds per MMBtu heat input.

Compliance Determination Requirement

D.1.2 Testing Requirements [326 IAC 2-7-6(1), (6)]

The Permittee is not required to test these facilities by this permit. However, IDEM may require compliance testing at any time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the limit specified in Condition D.1.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.3 Natural Gas Fired Boiler Certification

The natural gas boiler certification shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the six (6) month period being reported.

SECTION D.2

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

- (c) One (1) natural gas-fired low NO_x boiler, identified as B-3, with a maximum capacity of 42.05 million British thermal units per hour, and exhausting to stack SB-3.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.2.1 Particulate Matter Limitation (PM and PM₁₀) [326 IAC 6-2-4] [326 IAC 2-2]

- (a) Pursuant to 326 IAC 6-2-4, the PM emissions from the one (1) natural gas-fired boiler, identified as B-3, shall not exceed 0.32 pound per million British thermal units.

These limitations were computed using the following equation:

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used. (Q = 116.65 MMBtu/hr)

- (b) The potential to emit PM shall be less than 5.71 pounds per hour and the potential to emit PM₁₀ shall be less than 3.42 pounds per hour. Thus, the potential to emit PM will be less than 25 tons per year and the potential to emit PM₁₀ will be less than 15 tons per year. Therefore, the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, are not applicable.

D.2.2 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

The provisions of 40 CFR 60 Subpart A - General Provisions, which are incorporated as 326 IAC 12-1, apply to the facility described in this section except when otherwise specified in 40 CFR 60 Subpart Dc.

D.2.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility.

Logansport State Hospital
Logansport, Indiana
Permit Reviewer: Karen Purtell

First Minor Source Modification 017-14164
Modified by: CAO/MES

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Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.4 Record Keeping Requirements

- (a) The Permittee shall maintain monthly records of the amount and type of fuel burned in the one (1) natural gas-fired boiler, identified as B-3, pursuant to 40 CFR 60.48c, Subpart Dc.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.5 Natural Gas Fired Boiler Certification

The natural gas boiler certification shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the six (6) month period being reported.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

**PART 70 OPERATING PERMIT
SEMI-ANNUAL NATURAL GAS-FIRED BOILER CERTIFICATION**

Source Name: Logansport State Hospital
Source Address: 1098 South Highway 25, Logansport, Indiana 46947-9699
Mailing Address: 1098 South Highway 25, Logansport, Indiana 46947-9699
Part 70 Permit No.: T017-7405-00004

| |
|---------------------------|
| 9 Natural Gas Only |
| From: _____ To: _____ |

| |
|---|
| I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. |
| Signature: _____ |
| Printed Name: _____ |
| Title/Position: _____ |
| Phone: _____ |
| Date: _____ |

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Part 70 Minor Source Modification

Source Background and Description

| | |
|--|---|
| Source Name: | Logansport State Hospital |
| Source Location: | 1098 South Highway 25, Logansport, Indiana 46947 |
| County: | Cass |
| SIC Code: | 8063 |
| Operation Permit No.: | T 017-7405-00004 |
| Operation Permit Issuance Date: | December 21, 1998 |
| Minor Source Modification No.: | 017-14164-00004 |
| Permit Reviewer: | CarrieAnn Ortolani |

The Office of Air Quality (OAM) has reviewed a modification application from Logansport State Hospital relating to the construction of the following emission units and pollution control devices:

One (1) natural gas-fired low NO_x boiler, identified as B-3, with a maximum capacity of 42.05 million British thermal units per hour, and exhausting to stack SB-3.

Logansport State Hospital has also removed the following emission unit, which will be removed from the Part 70 Operating Permit:

One (1) coal-fired boiler, rated at 75 MMBtu per hour, exhausting at one (1) stack, identified as SB-4.

History

On March 21, 2001, Logansport State Hospital submitted an application to the OAQ requesting to add a natural gas-fired low NO_x boiler to their existing mental hospital. They have also removed a coal-fired boiler, which will be removed from the Part 70 Operating Permit. Logansport State Hospital was issued a Part 70 permit on December 21, 1998.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

| Stack ID | Operation | Height (feet) | Diameter (feet) | Flow Rate (acfm) | Temperature (EF) |
|----------|-----------|------------------|--------------------|---------------------|---------------------|
| SB-3 | Boiler | 50.0 | 3.0 | unknown | unknown |

Recommendation

The staff recommends to the Commissioner that the Part 70 Minor Source Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on March 21, 2001.

Emission Calculations

See pages 1 and 2 of 2 of Appendix A of this document for detailed emissions calculations.

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA.”

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit. This potential to emit is the potential to emit of the natural gas-fired, low NO_x boiler.

| Pollutant | Potential To Emit (tons/year) |
|------------------|--|
| PM | 0.350 |
| PM ₁₀ | 1.40 |
| SO ₂ | 0.111 |
| VOC | 1.01 |
| CO | 15.5 |
| NO _x | 9.21 |

| HAPs | Potential To Emit (tons/year) |
|-----------------|--|
| Benzene | 0.0004 |
| Dichlorobenzene | 0.0002 |
| Formaldehyde | 0.014 |
| Hexane | 0.331 |
| Toluene | 0.0006 |
| Lead | 0.0001 |
| Cadmium | 0.0002 |
| Chromium | 0.0003 |
| Manganese | 0.0001 |

| | |
|--------|--------|
| Nickel | 0.0004 |
| TOTAL | 0.348 |

Justification for Modification

The Part 70 Operating Permit is being modified through a Part 70 Minor Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5(d)(6), "A modification that is subject to a reasonably available control technology (RACT), a new source performance standard (NSPS), or a national emission standard for hazardous air pollutants (NESHAP) and the RACT, NSPS, or NESHAP is the most stringent applicable requirement, except for those modifications that would be subject to the provisions of 40 CFR 63, Subpart B (61 FR 68384) December 27, 1996, Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources." This Minor Source Modification will give the source approval to construct the proposed emission unit. The proposed operating conditions shall be incorporated into the Part 70 Operating Permit as a Significant Permit Modification (SPM 017-14199-00004) in accordance with 326 IAC 2-7-12(d)(1). The Significant Permit Modification will give the source approval to operate the proposed emission unit.

County Attainment Status

The source is located in Cass County.

| Pollutant | Status |
|------------------|------------|
| PM ₁₀ | attainment |
| SO ₂ | attainment |
| NO ₂ | attainment |
| Ozone | attainment |
| CO | attainment |
| Lead | attainment |

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Cass County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Cass County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

| Pollutant | Emissions (tons/year) |
|------------------|--------------------------|
| PM | 206.7 |
| PM ₁₀ | 80.3 |
| SO ₂ | 1325.3 |
| VOC | 1.8 |
| CO | 87.2 |
| NO _x | 140.5 |

- (a) This existing source, which is not one (1) of the twenty-eight (28) listed sources, is a major stationary source because the potential to emit SO₂ is two hundred fifty (250) tons per year or more.
- (b) These emissions are based upon the Potential to Emit table in the TSD to T017-7405-00004, issued on December 21, 1998.

Potential to Emit of Modification After Issuance

| Pollutant | PM (tons/yr) | PM ₁₀ (tons/yr) | SO ₂ (tons/yr) | VOC (tons/yr) | CO (tons/yr) | NO _x (tons/yr) |
|-----------------------|-----------------|-------------------------------|------------------------------|------------------|-----------------|------------------------------|
| Proposed Modification | less than 25 | less than 15 | 0.111 | 1.01 | 15.5 | 9.21 |
| PSD Significant Level | 25 | 15 | 40 | 40 | 100 | 40 |

This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Federal Rule Applicability

- (a) This significant modification does not involve a pollutant-specific emissions unit with the potential to emit after control in an amount equal to or greater than 100 tons per year. Therefore, the requirements of 40 CFR Part 64, Compliance Assurance Monitoring, are not applicable.
- (b) The one (1) proposed natural gas-fired boiler, identified as B-3, rated at 42.05 million British thermal units per hour is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60.40c, Subpart Dc because it was installed after the June 9, 1989 applicability date and is rated between 10 and 100 million British thermal units per hour. Since the boiler only operates on natural gas, there are no applicable standards under 40 CFR 60.42c. The source shall record the amount of fuel used pursuant to 40 CFR 60.48c(g).
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this proposed modification.

State Rule Applicability - Individual Facilities

326 IAC 2-2 (Prevention of Significant Deterioration)

The potential PM emissions from the new boiler are less than 25 tons per year and the potential PM₁₀ emissions are less than 15 tons per year. However, the limitations pursuant to 326 IAC 6-2-4, Particulate Emission Limitations for Sources of Indirect Heating, allow the PM to be 58.9 tons per year (0.32 lb/MMBtu x 42.05 MMBtu/hr x 8,760 hrs/yr / 2,000 lbs/ton = 58.9 tons/yr), which would also result in PM₁₀ emissions greater than 15 tons per year. Therefore, the potential to emit PM will be limited to less than 5.71 pounds per hour and the potential to emit PM₁₀ will be limited to less than 3.42 pounds per hour. Thus, the potential to emit PM will be limited to less than 25 tons per year and the potential to emit PM₁₀ will be limited to less than 15 tons per year. Since the potential PM emissions from this boiler are 0.350 tons per year and the potential PM₁₀ emissions are 1.40 tons per year, the boiler will comply with these limitations, and the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, are not applicable.

326 IAC 6-2-4 (Particulate Emissions Limitations for Sources of Indirect Heating)

The one (1) proposed natural gas-fired low NO_x boiler is being constructed after September 21, 1983. Therefore, the requirements of 326 IAC 6-2-4 are applicable. The one (1) boiler, known as B-3, with a maximum capacity of 42.05 million British thermal units per hour, must have PM emissions of no more than 0.32 pound per million British thermal units in order to comply with the particulate matter emission rate specified by the following equation given in 326 IAC 6-2-4. The total source heat input capacity is 74.6 million British thermal units per hour prior to the construction of this boiler. This capacity recently decreased from 149.6 million British thermal units per hour due to the removal of a coal-fired boiler. Therefore, the total source maximum operating capacity including the proposed natural gas fired boiler is 116.65 million British thermal units per hour. The coal-fired boiler is not included in the total source operating capacity when calculating the limit for this unit because it was removed prior to the construction of the proposed emission unit.

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used. (Q = 116.65 MMBtu/hr)

$$Pt = 1.09/(116.65)^{0.26} = 0.32 \text{ lb/MMBtu heat input}$$

Based on Appendix A, the potential PM emission rate from the one (1) proposed boiler limited to 0.32 pound PM per million British thermal units is:

$$0.350 \text{ tons/yr} \times (2000 \text{ lbs/ton} / 8760 \text{ hrs/yr}) = 0.080 \text{ lbs/hr}$$
$$(0.080 \text{ lbs/hr} / 42.05 \text{ MMBtu/hr}) = 0.002 \text{ lbs PM per MMBtu}$$

Therefore, the one (1) boiler will comply with this rule.

326 IAC 7-1 (Sulfur Dioxide Emission Limitations)

Since the potential to emit SO₂ from the boiler is less than 25 tons per year and 10 pounds per hour, the requirements of 326 IAC 7-1 are not applicable.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

The one (1) proposed boiler (B-3) has no applicable compliance monitoring conditions.

Proposed Changes

The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language appears in **bold**):

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) natural gas fired boiler, rated at 30 million British thermal units (MMBtu) per hour, exhausting at one (1) stack, identified as SB-1.
- (b) One (1) natural gas fired boiler, rated at 44.6 MMBtu per hour, exhausting at one (1) stack, identified as SB-2.
- ~~(c) One (1) coal-fired boiler, rated at 75 MMBtu per hour, exhausting at one (1) stack, identified as SB-4.~~
- (c) **One (1) natural gas-fired low NO_x boiler, identified as B-3, with a maximum capacity of 42.05 million British thermal units per hour, and exhausting to stack SB-3.**

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

One (1) coal-fired boiler, rated at 75 MMBtu per hour, exhausting at one (1) stack, identified as SB-4.

- (c) One (1) natural gas-fired low NO_x boiler, identified as B-3, with a maximum capacity of 42.05 million British thermal units per hour, and exhausting to stack SB-3.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

~~D.2.1 Particulate Matter (PM) [326 IAC 6-2-3]~~

~~Pursuant to 326 IAC 6-2-3 (Particulate Matter Emission Limitations for Sources of Indirect Heating), the PM emissions from the 75 MMBtu per hour heat input coal fired boiler shall be limited to 0.8 pounds per MMBtu heat input.~~

D.2.1 Particulate Matter Limitation (PM and PM₁₀) [326 IAC 6-2-4] [326 IAC 2-2]

- (a) Pursuant to 326 IAC 6-2-4, the PM emissions from the one (1) natural gas-fired boiler, identified as B-3, shall not exceed 0.32 pound per million British thermal units.

These limitations were computed using the following equation:

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the name-plate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used. (Q = 116.65 MMBtu/hr)

- (b) The potential to emit PM shall be less than 5.71 pounds per hour and the potential to emit PM₁₀ shall be less than 3.42 pounds per hour. Thus, the potential to emit PM will be less than 25 tons per year and the potential to emit PM₁₀ will be less than 15 tons per year. Therefore, the requirements of 326 IAC 2-2, Prevention of Significant Deterioration, are not applicable.

~~D.2.2 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1]~~

~~Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), the SO₂ emissions from the 75 MMBtu per hour coal fired boiler shall not exceed six (6.0) pounds per MMBtu heat input.~~

D.2.2 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR 60, Subpart A]

The provisions of 40 CFR 60 Subpart A - General Provisions, which are incorporated as 326 IAC 12-1, apply to the facility described in this section except when otherwise specified in 40 CFR 60 Subpart Dc.

D.2.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility.

~~D.2.4 Testing Requirements [326 IAC 2-7-6(1), (6)]~~

~~The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the limits specified in Conditions D.2.1 and D.2.2 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.~~

~~D.2.5 Sulfur Dioxide Emissions and Sulfur Content [326 IAC 2-7-5(3)(A)][326 IAC 2-7-6]~~

~~Pursuant to 326 IAC 7-2, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed six (6.0) pounds per MM Btu. Compliance shall be determined utilizing the following options:~~

- ~~(a) Providing vendor analysis of coal delivered, if accompanied by a certification from the fuel supplier as described under 40 CFR 60.48c(f)(3). The certification shall include:
 - ~~(1) The name of the coal supplier; and~~
 - ~~(2) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the coal was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected); and~~
 - ~~(3) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and~~
 - ~~(4) The methods used to determine the properties of the coal; and~~~~
- ~~(b) Sampling and analyzing the coal using one of the following procedures:
 - ~~(1) Minimum Coal Sampling Requirements and Analysis Methods:
 - ~~(A) The coal sample acquisition point shall be at a location where representative samples of the total coal flow to be combusted by the facility or facilities may be obtained. A single as-bunkered or as-burned sampling station may be used to represent the coal to be combusted by multiple facilities using the same stockpile feed system;~~
 - ~~(B) Coal shall be sampled at least one (1) time per day;~~
 - ~~(C) Minimum sample size shall be five hundred (500) grams;~~~~~~

~~(D) — Samples shall be composited and analyzed at the end of each calendar quarter;~~

~~(E) — Preparation of the coal sample, heat content analysis, and sulfur content analysis shall be determined pursuant to 326 IAC 3-7-2(c), (d), (e); or~~

~~(2) — Sample and analyze the coal pursuant to 326 IAC 3-7-3; or~~

~~(c) — Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the boiler, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, which is conducted with such frequency as to generate the amount of information required by (a) or (b) above. [326 IAC 7-2-1(b)]~~

~~A determination of noncompliance pursuant to any of the methods specified in (a), (b) or (c) above shall not be refuted by evidence of compliance pursuant to the other method.~~

~~D.2.6 — Visible Emissions Notations~~

~~(a) — Daily visible emission notations of the boiler stack exhaust shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.~~

~~(b) — For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.~~

~~(c) — In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.~~

~~(d) — A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.~~

~~(e) — The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.~~

~~Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]~~

~~D.2.7 4 Record Keeping Requirements~~

~~(a) — To document compliance with Conditions D.2.1 and D.2.2, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken monthly and shall be complete and sufficient to establish compliance with the PM and SO₂ emission limits established in D.2.1 and D.2.2.~~

~~(1) — Calendar dates covered in the compliance determination period; and~~

~~(2) — Actual coal usage since last compliance determination period; and~~

~~(3) — Sulfur content, heat content, and ash content; and~~

~~(4) — Sulfur dioxide emission rates; and~~

~~(5) Vendor analysis of coal and coal supplier certification.~~

~~(b) To document compliance with Condition D.2.6, the Permittee shall maintain records of visible emissions notations.~~

(a) The Permittee shall maintain monthly records of the amount and type of fuel burned in the one (1) natural gas-fired boiler, identified as B-3, pursuant to 40 CFR 60.48c, Subpart Dc.

~~(e)(b)~~ All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

~~D.2.8 Reporting Requirements~~

~~A quarterly summary of the information to document compliance with Condition D.2.1 and D.2.2 shall be submitted to the address listed in Section C - General Reporting Requirements, using the reporting forms located at that end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.~~

D.2.5 Natural Gas Fired Boiler Certification

The natural gas boiler certification shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the six (6) month period being reported.

In order to agree with the requirements of D.2.5, Condition D.1.3 is revised as follows:

D.1.3 Reporting Requirements Natural Gas Fired Boiler Certification

The Permittee shall certify quarterly, on the form provided, that natural gas was fired in the boilers at all times during the report period. Alternatively, the Permittee shall report the number of days during which alternate fuel was burned during the report period. The natural gas boiler certification shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the six (6) month period being reported.

To illustrate the requirements of Conditions D.1.3 and D.2.5, the Natural Gas-Fired Boiler Certification is revised as follows:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

PART 70 OPERATING PERMIT
SEMI-ANNUAL NATURAL GAS-FIRED BOILER CERTIFICATION

Source Name: Logansport State Hospital
Source Address: 1098 South Highway 25, Logansport, Indiana 46947-9699
Mailing Address: 1098 South Highway 25, Logansport, Indiana 46947-9699
Part 70 Permit No.: T017-7405-00004

| |
|---------------------------|
| 9 Natural Gas Only |
| From: _____ To: _____ |

~~This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.~~

Report period
Beginning: _____
Ending: _____

| <u>Boiler Affected</u> | <u>Alternate Fuel</u> | <u>Days burning alternate fuel</u> |
|------------------------|-----------------------|------------------------------------|
| | | <u>From</u> _____ <u>To</u> _____ |
| | | |
| | | |

| |
|---|
| I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. |
| Signature: _____ |
| Printed Name: _____ |
| Title/Position: _____ |
| Phone: _____ |
| Date: _____ |

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

Conclusion

The construction of this proposed modification shall be subject to the conditions of the attached Part 70 Minor Source Modification No. 017-14164-00004.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler**

**Company Name: Logansport State Hospital
Address City IN Zip: 1098 South Highway 25, Logansport, Indiana 46947
Minor Source Modification No.: 017-14164
Plt ID: 017-00004
Reviewer: CarrieAnn Ortolani
Date: March 21, 2001**

| | |
|---------------------------------|---------------------------------|
| Heat Input Capacity MMBtu/hr | Potential Throughput MMCF/yr |
| 42.05 | 368.36 |

| | Pollutant | | | | | |
|-------------------------------|-----------|-------|-------|---------------------|------|------|
| | PM* | PM10* | SO2 | NOx | VOC | CO |
| Emission Factor in lb/MMCF | 1.9 | 7.6 | 0.6 | 50.0 **see below | 5.5 | 84.0 |
| Potential Emission in tons/yr | 0.350 | 1.40 | 0.111 | 9.21 | 1.01 | 15.5 |

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: Logansport State Hospital
Address City IN Zip: 1098 South Highway 25, Logansport, Indiana 46947
Minor Source Modification No.: 017-14164
Plt ID: 017-00004
Reviewer: CarrieAnn Ortolani
Date: March 21, 2001

HAPs - Organics

| | | | | | |
|-------------------------------|--------------------|----------------------------|-------------------------|-------------------|--------------------|
| Emission Factor in lb/MMcf | Benzene 2.1E-03 | Dichlorobenzene 1.2E-03 | Formaldehyde 7.5E-02 | Hexane 1.8E+00 | Toluene 3.4E-03 |
| Potential Emission in tons/yr | 3.87E-04 | 2.21E-04 | 1.38E-02 | 3.32E-01 | 6.26E-04 |

HAPs - Metals

| | | | | | | |
|-------------------------------|-----------------|--------------------|---------------------|----------------------|-------------------|-----------------------|
| Emission Factor in lb/MMcf | Lead 5.0E-04 | Cadmium 1.1E-03 | Chromium 1.4E-03 | Manganese 3.8E-04 | Nickel 2.1E-03 | Total HAPs |
| Potential Emission in tons/yr | 9.21E-05 | 2.03E-04 | 2.58E-04 | 7.00E-05 | 3.87E-04 | 0.348 |

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.