



City of Evansville
Environmental Protection Agency
Suite 100, C. K. Newsome Community Center,
100 East Walnut Street
Evansville, IN 47713
Phone (812) 435-6145 * Fax (812) 435-6155
Website - <http://evansvillegov.net/evans/epa>

Mayor Russell G. Lloyd Jr.

October 13, 2003

Miles Mann
University of Southern Indiana
8600 University Blvd.
Evansville, IN 47712

Re: Registered Operation Status
163-15572-00147

Dear Mr. Mann:

The annual throughput forms from the University of Southern Indiana, have been reviewed and potential to emit calculations have been performed. Based on the data submitted, the calculations and the provisions in MCE 3.30.221, which incorporates by reference 326 IAC 2-5.5, it has been determined that the following operation of natural gas boilers used primarily for space heating, located at 8600 University Blvd., Evansville, Indiana, is classified as Registered and consists of the following:

Three (3) 12 mmBtu/hr natural gas boilers with serial #s L342, L-373, and L-408

The following conditions shall be applicable:

1. **Opacity Limitations** - pursuant to MCE 3.30. 209(B)(1)(326 IAC 5-1-2) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
2. **Emission Reporting** - pursuant to MCE 3.30.220 (326 IAC 2-6) this source is subject to 326 IAC 2-6, because it has the potential to emit more than ten (10) tons per year of oxides of nitrogen (NO_x) and carbon monoxide (CO). Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the twelve month time period starting December 1 and ending November 30 as defined in 326 IAC 2-6-2(8) (Emission Statement Operating Year).
3. **Particulate emissions limitations for facilities of indirect heating** - pursuant to MCE 3.30. 210 (326 IAC 6-2-4) and specified in 326 IAC 6-2-1(d), particulate emissions from indirect heating facilities constructed after September 21, 1983, shall in no case exceed 0.43 pounds of particulate matter per million British thermal units heat input.

An authorized individual shall provide an Annual Emissions Statement and Annual Notice to IDEM - Office of Air Quality and Evansville Environmental Protection Agency that the source is in operation and in compliance with this registration pursuant to MCE 3.30.221, which incorporates by reference 326 IAC 2-5.5-4(a)(3). The Annual Emission Statement and Annual Notice shall be submitted to:

Evansville EPA
C. K. Newsome Community Center **AND**
Suite 100
100 East Walnut Street

IDEM
Office of Air Quality
Compliance Data Section
100 Senate Avenue North Evansville, IN 47713
P.O. Box 6015
Indianapolis, IN 46206-6015

no later than April 15 of each year, with the Annual Notice being submitted in the format attached.

This Registration is the first state air approval issued to this source. The source may operate according to MCE 3.30.221, which incorporates by reference 326 IAC 2-5.5.

An application or notification shall be submitted in accordance with MCE 3.30.221, which incorporates by reference 326 IAC 2, to the Evansville EPA if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by:
Alma Mifflin
Permitting Specialist
Evansville EPA

cc: File – Evansville EPA
 IDEM OAQ

Registration Annual Notification

This form should be used to comply with the notification requirements under *326 IAC 2-5.1-2(f)(3)*
or *326 IAC 2-5.5-4(a)(3)*

Company Name:	University of Southern Indiana
Address:	8600 University Blvd.
City:	Evansville, IN 47712
Authorized individual:	Miles Mann
Phone #:	812-464-1808
Registration #:	163-15572-00147

I hereby certify that USI is still in operation and is in compliance with the requirements of Registration 163-15572-00147.

Name (typed):	Miles Mann
Title:	
Signature:	
Date:	

**Evansville Environmental Protection Agency
and
Indiana Department of Environmental Management
Office of Air Quality**

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: University of Southern Indiana
Source Location: 8600 University Blvd., Evansville, IN 47712
County: Vanderburgh
SIC Code: 8221
Operation Permit No.: 163-15572-00147
Permit Reviewer: Alma Mifflin

The Evansville EPA has reviewed previous years' emissions calculations from University of Southern Indiana relating to the operation of natural gas boilers used primarily for space heating. USI previously held City of Evansville Municipal operating permits and upon review of emissions calculations was found to need a state registration.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

Three (3) 12 mmBtu/hr Natural gas fired boilers with serial numbers: L-342, L-373, and L-408

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

City of Evansville EPA CO #s 0418 & 0419 first issued in 1985.

All conditions from previous approvals were incorporated into this Registration.

Stack Summary

STACK ID	HEIGHT (FEET)	DIAMETER (FEET)	FLOW RATE (ACFM)
L- 342	25	2	15,000
L-373	25	2	15,000
L-408	25	2	15,000

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Director that the operation permit be approved. This recommendation is based on the following facts and conditions:

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

Emission Calculations

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

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit 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, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year) - 3 boilers
PM	0
PM-10	0.3
SO ₂	0.1
VOC	0.9
CO	13.2
NO _x	15.8

HAP	Potential To Emit (tons/year) – 3 boilers
Benzene	.00033
Dichlorobenzene	.00019
Formaldehyde	.012
Hexane	.28
Toluene	.00053
Lead	.000078
Cadmium	.00017
Chromium	.00022
Manganese	.00006
Nickel	.00033

- (a) The Potential to Emit (as defined in 326 IAC 2-7-1(29)) of oxides of nitrogen (NOx) is equal to or greater than 10 tons per year and less than 25 tons per year (see Appendix A, page 1). Therefore, the source is subject to the provisions of 326 IAC 2-5.1-2.
- (b) The Potential to Emit (as defined in 326 IAC 2-7-1(29)) of any single hazardous air pollutant (HAP) is less than ten (10) tons per year, and any combination of HAPs is less than twenty-five tons per year (see Appendix A, page 2). Therefore, the source is not subject to the provisions of 326 IAC 2-5.1-2.
- (c) Fugitive Emissions (as defined in 326 IAC 2-3-2), since this type of operation is not one of the twenty-seven (27) listed source categories under 326 IAC 2-3-2, and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2002 EEPA emission data.

Pollutant	Actual Emissions (tons/year)
PM-10	0.08
SO ₂	0.03
VOC	0.24
CO	3.65
NO _x	4.35

County Attainment Status

The source is located in Vanderburgh County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Vanderburgh County has been designated as attainment for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.
- (b) Vanderburgh County has been classified as attainment for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source's total emissions indicated in this Registration 163-15572-00147, is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source. This status has been verified by the EEPA inspector assigned to the source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60 or Subpart D or Da) applicable to this source. NSPS are not applicable because the source is not capable of combusting more than 250 million Btu/hour heat input of fossil fuels. Each boiler has a maximum capacity of 12 million Btu/hr.
- (b) New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60.48c (Subpart Dc)) Reporting and record keeping requirements is not applicable because the source commenced operation prior to June 9, 1989.
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting): This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than ten (10) tons per year of oxides of nitrogen (NO_x). Pursuant to this rule, the

owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by April 15 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year). The Annual Emissions Statement shall be submitted to:

The Evansville Environmental Protection Agency
C.K. Newsome Community Center – Ste. 100
100 East Walnut Street
Evansville, IN 47713

And Indiana Department of Environmental Management
Office of Air Quality
P.O. Box 6015
Indianapolis, IN 46206-6015

326 IAC 5-1 (Opacity Limitations):

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

Pursuant to 326 IAC 2-4.1 (HAPs Major Sources; New Source Toxics Control), the source does not have the potential to emit ten (10) tons per year of a single HAP or twenty-five (25) tons per year of any combination of HAPs. Thus, 326 IAC 2-4.1 does not apply to this source.

Pursuant to 326 IAC 6-1 (Particulate Rules), this source does not have the potential to emit Particulate Matter (PM) in excess of one hundred (100) tons per year or have actual PM emissions greater than ten (10) tons per year. Therefore, 326 IAC 6-1 does not apply to this source.

Pursuant to 326 IAC 6-2-4 (Particulate emissions limitations for facilities of indirect heating specified in 326 IAC 6-2-1(d)), particulate emissions from indirect heating facilities constructed after September 21, 1983, shall in no case exceed 0.6 pounds of particulate matter per million British thermal units heat input. Using the following equation:

$Pt = 1.09/Q^{0.26}$, where Pt equals pounds of particulate matter emitted per million Btu (lb/mmBtu) heat input, and Q equals total source maximum operating capacity rating in million Btu per hour (mmBtu/hr) heat input.

Methodology: $Pt = 1.09/36^{0.26}$

36 = total maximum operating capacity of three (3) 12mm Btu/hr boilers

Pt = 0.43 pounds of particulate matter per million Btu heat input, therefore the source is in compliance with 326 IAC 6-2-4.

Conclusion

The operation of natural gas boilers used primarily for space heating shall be subject to the conditions of the attached Registration 163-15572-00147.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
3 Small Industrial Boilers @ 12MM Btu/hr
Company Name: University of Southern Indiana
Address City IN Zip: 8600 University Blvd., Evansville, IN 47712
Permit Number: 163-15572-00147
Plt ID: 147
Reviewer: A. Mifflin
Date: 09/23/2003

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

36.0

315.4

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	0.0	1.9	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.3	0.1	15.8	0.9	13.2

*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 to Reviewer: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to See page 5 for HAPs emissions calculations.

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

**3 Small Industrial Boilers @ 12MM Btu/hr
 HAPs Emissions**

**Company Name: University of Southern Indiana
 Address City IN Zip: 8600 University Blvd., Evansville, IN 47712
 Permit Number: 163-15572-00147
 Plt ID: 147
 Reviewer: A. Mifflin
 Date: 09/23/2003**

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.311E-04	1.892E-04	1.183E-02	2.838E-01	5.361E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	7.884E-05	1.734E-04	2.208E-04	5.992E-05	3.311E-04

Methodology is the same as page 1 except calculations are based on 3 small industrial boilers, each 12mmBtu/hr.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.