



*Mitchell E. Daniels, Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
(800) 451-6027  
www.IN.gov/idem

TO: Interested Parties / Applicant  
DATE: August 15, 2005  
RE: Eli Lilly and Company / 157-20732-00006  
FROM: Paul Dubenetzky  
Chief, Permits Branch  
Office of Air Quality

### **Notice of Decision: Approval – Effective Immediately**

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-17-3-4 and 326 IAC 2, this permit modification is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-7-3 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of a Title V operating permit or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency  
401 M Street  
Washington, D.C. 20406

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We make Indiana a cleaner, healthier place to live.*

Mitchell E. Daniels, Jr.  
Governor

Thomas W. Easterly  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
(800) 451-6027  
www.IN.gov/idem

August 15, 2005

Mr. Stephen A. Roosz  
Eli Lilly and Company, Tippecanoe Laboratories  
1650 Lilly Road  
Lafayette, IN 47907-9201

Re: 157-20732-00006  
Second Significant Permit Modification to  
Part 70 Permit No.: T157-6879-00006

Dear Mr. Roosz

Eli Lilly and Company, Tippecanoe Laboratories was issued a Part 70 operation permit on February 27, 2004 for a stationary bulk pharmaceutical manufacturing plant located at 1650 Lilly Road, Lafayette, IN 47907. Two (2) letters requesting changes to this permit were received by the Office of Air Quality (OAQ) on February 10, 2005 and March 3, 2005, respectively. The permit is being revised through a significant permit modification, pursuant to 326 IAC 2-7-12(d)(1), since the changes to the permit do not qualify as a minor permit modification or as an administrative amendment and would change the compliance monitoring requirements. Pursuant to the provisions of 326 IAC 2-7-12 a significant permit modification to this permit is hereby approved as described in the attached Technical Support Document. The following modifications were made to the permit:

- (a) As requested by the source, the first modification changes how data substitutions are made during calibrations of the Continuous Emission Monitors (CEMS) on the T49 incinerator. The change substitutes the last valid emission rate value (pounds per minute) during the calibrations of the T49 CEMS instead of the last valid concentration. This emission rate value would be calculated using the last valid flow rate.
- (b) As requested by the source, the second modification consists of additional permit language in conditions D.1.10 and D.1.17 specifying the procedures and monitoring requirements that apply if the source conducts performance tests for a coal-fired boiler while burning a mixture of natural gas and coal (co-fired conditions).
- (c) IDEM, OAQ determined that it was necessary to add conditions to Section D addressing 40 CFR 63, Subpart DDDDD, the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, effective September 13, 2004, since Boilers 1, 2, 3, 4, and 5 are subject to this subpart.
- (d) IDEM, OAQ determined that it was necessary to add a condition to Section B addressing credible evidence. Indiana was required to incorporate credible evidence provisions into state rules consistent with the SIP call published by U.S. EPA in 1997 (62 FR 8314). Indiana has incorporated the credible evidence provision in 326 IAC 1-1-6. This rule is effective March 16, 2005; therefore, the condition reflecting this rule was incorporated into the permit.

All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

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, please contact Nathan C. Bell, 100 North Senate Avenue, Indianapolis, Indiana, 46204, at 317-234-3350 or at 1-800-451-6027 (ext 43350).

Sincerely,

Origin signed by

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Quality

ncb

Attachments: Technical Support Document and revised permit pages

cc: File - Tippecanoe County  
U.S. EPA, Region V  
Tippecanoe County Health Department  
Air Compliance Section Inspectors - Ray Schick and Wanda Stanfield  
Compliance Data Section  
Administrative and Development



Mitchell E. Daniels, Jr.  
 Governor

Thomas W. Easterly  
 Commissioner

100 North Senate Avenue  
 Indianapolis, Indiana 46204  
 (317) 232-8603  
 (800) 451-6027  
 www.IN.gov/idem

**PART 70 OPERATING PERMIT AND  
 PREVENTION OF SIGNIFICANT DETERIORATION (PSD)  
 FLEXIBLE PERMIT**

**OFFICE OF AIR QUALITY**

**Eli Lilly and Company  
 Tippecanoe Laboratories Facility  
 1650 Lilly Road  
 Lafayette, Indiana 47909**

(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.

**The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.**

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 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. This permit also addresses certain new source review requirements for existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-2 and 326 IAC 2-7-10.5, applicable to those conditions.

Operation Permit No.: T157-6879-00006	
Issued by: Original signed by Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: February 27, 2004  Expiration Date: February 27, 2009
First Significant Permit Modification No: 157-20216-00006, issued on January 19, 2005 First Administrative Amendment No: 157-20003-00006, issued on April 1, 2005 Second Administrative Amendment No: 157-21143-00006, issued on May 11, 2005	
Second Significant Permit Modification No: 157-20732-00006	Pages Affected: 2, 4, 24, 35-40, 40a, 40b, 181, 183, 185
Issued by: Origin signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: August 15, 2005

## TABLE OF CONTENTS

<b>A</b>	<b>SOURCE SUMMARY</b> .....	<b>4</b>
A.1	General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(15)][326 IAC 2-7-1(22)]	
A.2	Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]	
A.3	Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]	
A.4	Part 70 Permit Applicability [326 IAC 2-7-2]	
<b>B</b>	<b>GENERAL CONDITIONS</b> .....	<b>11</b>
B.1	Definitions [326 IAC 2-7-1]	
B.2	Permit Term [326 IAC 2-7-5(2)] [326 IAC 2-1.1-9.5]	
B.3	Enforceability [326 IAC 2-7-7]	
B.4	Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]	
B.5	Severability [326 IAC 2-7-5(5)]	
B.6	Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]	
B.7	Duty to Provide Information [326 IAC 2-7-5(6)(E)]	
B.8	Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]	
B.9	Annual Compliance Certification [326 IAC 2-7-6(5)]	
B.10	Preventive Maintenance Plan [326 IAC 2-7-5(1), (3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]	
B.11	Emergency Provisions [326 IAC 2-7-16]	
B.12	Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]	
B.13	Prior Permits Superseded [326 IAC 2-1.1-9.5]	
B.14	Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]	
B.15	Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]	
B.16	Permit Renewal [326 IAC 2-7-4]	
B.17	Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]	
B.18	Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)] [326 IAC 2-7-12 (b)(2)]	
B.19	Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]	
B.20	Source Modification Requirement [326 IAC 2-7-10.5]	
B.21	Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2][IC 13-30-3-1]	
B.22	Transfer of Ownership or Operational Control [326 IAC 2-7-11]	
B.23	Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]	
B.24	Advanced Source Modification Approval [326 IAC 2-7-5(16)] [326 IAC 2-7-10.5]	
B.25	Credible Evidence [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [62 FR 8314] [326 IAC 1-1-6]	
<b>C</b>	<b>SOURCE OPERATION CONDITIONS</b> .....	<b>25</b>
	<b>Emission Limitations and Standards [326 IAC 2-7-5(1)]</b>	
C.1	Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) pounds per hour [40 CFR 52 Subpart P][326 IAC 6-3-2]	
C.2	Opacity [326 IAC 5-1]	
C.3	Open Burning [326 IAC 4-1] [IC 13-17-9]	
C.4	Fugitive Dust Emissions [326 IAC 6-4]	
C.5	Operation of Equipment [326 IAC 2-7-6(6)]	
C.6	Stack Height [326 IAC 1-7]	
C.7	Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]	
	<b>Testing Requirements [326 IAC 2-7-6(1)]</b>	
C.8	Performance Testing [326 IAC 3-6]	
	<b>Compliance Requirements [326 IAC 2-1.1-11]</b>	

## SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). 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)] [326 IAC 2-7-1(22)]

---

The Permittee owns and operates a stationary pharmaceutical manufacturing plant.

Responsible Official:	Mr. Lawrence J. McShane, General Manager
Source Address:	1650 Lilly Road, Lafayette, Indiana, 47909
Mailing Address:	1650 Lilly Road, Lafayette, Indiana, 47909
Source Phone Number:	(765) 477-4226
SIC Code:	2833, 2879
County Location:	Tippecanoe County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program; Major Source under PSD; Major Source, Section 112 of the Clean Air Act; 1 of 28 Source Categories

### 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) D.1 Utilities Operations: The utilities operations consist of three coal/natural gas-fired boilers equipped with an ash handling system and supported by a coal pile and coal conveyor system, and two natural gas boilers with fuel oil backup supplied by one fuel oil tank. The boilers provide steam to process operations in bulk pharmaceutical manufacturing and fermented products. The detailed equipment list is located in Section D.1 of this permit.
- (b) D.2 Utilities Support Operations: The utility support facilities include the lime system for the potable water system (T9/T23), glycol tanks for heating and cooling of BPM tanks and chillers, generators and compressors. The detailed equipment list is located in Section D.2 of this permit.
- (c) D.3 Fermented Products - Fermentation Operations: The fermentation processes include the dry material storage area (T46), the raw material prep area (T1), the fermentation production areas (T2, T2A, T2B, T2C) and product storage area (T63). The detailed equipment list is located in Section D.3 of this permit.
- (d) D.4 Fermented Products - Purification Operations: The whole broth products from fermentation are stored in Building T63 and then continuously fed to the purification equipment as capacity allows. The purification department consists of extraction and elution processes (T3, T40, and T94), solvent recovery (T4), raw and recovered material storage (T147), and product storage (T39). The detailed equipment list is located in Section D.4 of this permit.

- (a) The requirements to obtain a source modification approval under 326 IAC 2-7-10.5 or a permit modification under 326 IAC 2-7-12 are satisfied by this permit for the proposed emission units, control equipment or insignificant activities in Sections A.2 and A.3.
- (b) Pursuant to 326 IAC 2-1.1-9 any permit authorizing construction may be revoked if construction of the emission unit has not commenced within eighteen (18) months from the date of issuance of the permit, or if during the construction, work is suspended for a continuous period of one (1) year or more.

B.25 Credible Evidence [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

**SECTION D.1 UTILITIES OPERATION CONDITIONS**

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

The information describing the processes contained in the following facility description boxes is descriptive information and does not constitute enforceable conditions:

(a) The following emission units are subject to applicable requirements described in this D section:

Emission* Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
<i>Building T6:</i>					
BLR001	Coal/Natural Gas Boiler	S-T6-BLR001	92	MMBtu/hr	Multiclone001
BLR002	Coal/Natural Gas Boiler	S-T6-BLR002	92	MMBtu/hr	Multiclone002
BLR003	Coal/Natural Gas Boiler	S-T6-BLR003	92	MMBtu/hr	Multiclone003
BLR004	Natural Gas/Fuel Oil Boiler	S-T6-BLR004	142	MMBtu/hr	None
BLR005	Natural Gas/Fuel Oil Boiler	S-T6-BLR005	97	MMBtu/hr	None
CONASH	Ash Handling System	PV-T6-CONASH	1805	lbs/hr	Baghouse

\* In this permit, boilers BLR001, BLR002, BLR003, BLR004, and BLR005 are referred to as Boilers 1, 2, 3, 4, and 5, respectively.

(b) The following emission units are not subject to applicable requirements described in this D section and are listed only for informational purposes:

Emission Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
<i>Outside Building T6:</i>					
OILTK001*	Fuel Oil Storage Tank	PV-T6-OILTK001	250,000	gallons	None
COAL	Coal Pile	N/A	N/A	N/A	N/A
CNV001-CNV005	Covered Coal Conveyor System	N/A	N/A	N/A	N/A

\* Emission units marked with a single asterisk are insignificant activities as defined in 326 IAC 2-7-1(21). Specifically, the fuel oil storage tank is an insignificant activity pursuant to 326 IAC 2-7-1(21)(A)-(C).

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

**D.1.1 Particulate Matter (PM) Limitations [326 IAC 6-2-3, 326 IAC 6-3, and PC (79) 1510 Issued March 22, 1982 (Revised by this permit)]**

- (a) Pursuant to 326 IAC 6-2-3(b) (Particulate Matter Emission Limitations for Sources of Indirect Heating), particulate emissions from each coal/natural gas-fired boiler (Boilers 1, 2, and 3) shall not exceed 0.56 pounds per million British thermal units (MMBtu) heat input.
- (b) Pursuant to 326 IAC 6-2-3(c) (Particulate Matter Emission Limitations for Sources of Indirect Heating), particulate emissions from Boiler 4 shall not exceed 0.39 pounds per MMBtu heat input.
- (c) Pursuant to 326 IAC 6-2-3(c) (Particulate Matter Emission Limitations for Sources of Indirect Heating), particulate emissions from Boiler 5 shall not exceed 0.31 pounds per MMBtu heat input.

- (d) Pursuant to 326 IAC 6-3-2 and 40 CFR 52 Subpart P, particulate matter emissions from the ash handling system shall not exceed 3.83 pounds per hour based on a maximum throughput of 0.902 tons of ash per hour.

D.1.2 Sulfur Dioxide (SO<sub>2</sub>) Limitations [326 IAC 2-2, 326 IAC 7-1.1-2, and PC (79) 1510 Issued March 22, 1982 (Revised by this permit)]

---

- (a) Pursuant to 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations), the SO<sub>2</sub> emissions from each of the coal/natural gas-fired boilers (Boilers 1, 2 and 3) shall not exceed 6.0 pounds per MMBtu heat input.
- (b) Pursuant to 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations), the SO<sub>2</sub> emissions from Boiler 4 shall be limited to 0.5 pounds per MMBtu heat input, when burning No. 2 fuel oil. Pursuant to 326 IAC 7-2-1, compliance with this standard is based on a calendar month average. This emission limit correlates to a maximum fuel oil sulfur content of 0.49 percent by weight.
- (c) Pursuant to 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations), the SO<sub>2</sub> emissions from Boiler 5 shall not exceed 0.5 pounds per MMBtu heat input, when burning No. 2 fuel oil. This emission limit correlates to a maximum fuel oil sulfur content of 0.49 percent by weight.
- (d) The SO<sub>2</sub> emissions from Boiler 5 shall not equal or exceed 40 tons per year to avoid the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration). This emission limit correlates to a maximum fuel oil usage of 1,120,000 gallons per 12 consecutive month period based on a maximum sulfur content of 0.49 percent.

D.1.3 Nitrogen Oxides (NO<sub>x</sub>) Limitations [326 IAC 2-2] [PC (79) 1510 Issued March 22, 1982 (Revised by this permit)]

---

The NO<sub>x</sub> emissions from Boiler 5 shall not equal or exceed 40 tons per year to avoid the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration). This emission limit correlates to a maximum natural gas usage of 780 MMCF per 12 consecutive month period. To account for fuel oil usage, the following equivalency shall be used:

1 MMCF of Natural Gas = 5000 gallons of Fuel Oil

D.1.4 Temporary Alternative Opacity Limitations [326 IAC 5-1-3]

---

Pursuant to 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), the following conditions apply as an alternative to the opacity limitations in Section C – Opacity:

- (a) When building a new fire in a boiler, or shutting down a boiler, opacity may exceed the applicable limit established in 326 IAC 5-1-2 and stated in Section C - Opacity. However, opacity levels shall not exceed sixty percent (60%) for any six (6)-minute averaging period. Opacity in excess of the applicable limit established in 326 IAC 5-1-2 shall not continue for more than two (2) six (6)-minute averaging periods in any twenty-four (24) hour period.
- (b) When removing ashes from the fuel bed or furnace in a boiler or blowing tubes, opacity may exceed the applicable limit established in 326 IAC 5-1-2 and stated in Section C - Opacity. However, opacity levels shall not exceed sixty percent (60%) for any six (6)-minute averaging period and opacity in excess of the applicable limit shall not continue for more than one (1) six (6)-minute averaging periods in any sixty (60) minute period. The averaging periods shall not be permitted for more than three (3) six (6)-minute averaging periods in a twelve (12) hour period.

**D.1.5 Preventive Maintenance Plans/Start-up Shutdown, and Malfunction Plans [326 IAC 2-7-5(13)]  
[40 CFR Part 63, Subpart DDDDD]**

---

- (a) Until September 12, 2007 or until startup of new boilers, whichever is first, a Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the coal/natural gas-fired boilers and associated multiclone control devices.
- (b) After September 12, 2007 or upon startup of new boilers, whichever is first, a Start-Up Shutdown, and Malfunction Plan is required for each boiler as required by 40 CFR 63 Part DDDDD, and in accordance with Section B – Preventative Maintenance Plan, of this permit.

Additional Emission Limitations and Standards are included in Conditions D.1.20 and D.1.21.

**Testing and Monitoring Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-7-5(1)]**

**D.1.6 Testing Requirements [326 IAC 2-7-6(1), (6)] [40 CFR Part 63, Subpart DDDDD]**

---

- (a) The Permittee shall perform particulate matter performance tests for Boilers 1, 2 and 3 utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM or other methods as approved by the Commissioner. These tests shall be repeated every third calendar year from the calendar year of the most recently completed compliance stack test. The requirements for conducting performance tests are described in Section C – Performance Testing.
- (b) No emissions testing is required for the boilers for compliance with particulate matter for boilers 4, and 5, or sulfur dioxide or nitrogen oxides emission limits established in Conditions D.1.1, D.1.2 and D.1.3, respectively, at this time. However, IDEM may require performance testing when necessary to determine compliance. The requirements for conducting performance tests are described in Section C – Performance Testing.
- (c) All performance testing and/or fuel analyses shall be performed as required by 40 CFR 63 Part DDDDD.

**D.1.7 Coal Sampling and Analysis for SO<sub>2</sub> [326 IAC 3-7 and 326 IAC 7-2]**

---

The Permittee shall collect coal sampling and analysis data on a calendar month average in accordance with one of the following methods specified in 326 IAC 3 for each of the coal/natural gas-fired boilers (Boilers 1, 2 and 3):

- (a) Coal sampling and analysis shall be performed using one of the following procedures:
  - (1) Sampling and analyzing the coal according to the Permittee's Coal Sampling and Assay Plan, submitted pursuant to 326 IAC 3-7-5(a). The following minimum sampling and analysis requirements shall be met:
    - (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 two (2) times per day and at least one (1) time per twelve (12) hour period unless no coal is bunkered during the preceding twelve (12) hour period. This permit condition satisfies the requirements of 326 IAC 3-7-2(b)(3)(B);

- (C) Minimum sample size shall be five hundred (500) grams;
  - (D) Samples shall be composited and analyzed at the end of each calendar month;
  - (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 3-7-2(b).
- (b) Upon written notification to IDEM by a facility owner or operator, continuous emission monitoring data collected and reported pursuant to 326 IAC 3-5-1 may be used as the means for determining compliance with the emission limitations in 326 IAC 7-1.1-2. Upon such notification, the other requirements of 326 IAC 7-2 shall not apply. [326 IAC 7-2-1(g)]

#### D.1.8 Fuel Oil Sampling and Analysis for SO<sub>2</sub> [326 IAC 7-2]

---

The Permittee shall utilize one of the following methods for Boilers 4 and 5 when burning fuel oil:

- (a) Provide vendor analysis of quantity, heat content and sulfur content of fuel delivered, if accompanied by a certification;
- (b) Analyze the oil sample to determine the sulfur content of the oil via the procedures in 326 IAC 3-7-4.
  - (1) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
  - (2) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or
- (c) Conduct 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(d)]

#### D.1.9 Natural Gas and Fuel Oil Consumption Monitor [326 IAC 2-2]

---

The Permittee shall monitor the natural gas and fuel oil usage for Boiler No. 5 on a monthly basis.

#### D.1.10 Alternative Operating Scenarios

---

- (a) The Permittee may elect to perform the tests in D.1.6(a) while burning a mixture of natural gas and coal (co-fire). The Permittee shall inform IDEM in writing whenever the Co-Fire operating scenario is used, in which case the following monitoring requirements and limits apply.
  - (1) The Permittee shall install and operate a gas flow meter and a steam flow rate flowmeter on each boiler where the co-fire option is used. A Preventative Maintenance Plan, in accordance with Section B – Preventative Maintenance Plan, is required for the monitors.
  - (2) The 24-hour daily average gas ratio (R) shall be greater than or equal to the value determined in the most recent performance test. The gas ratio shall be calculated by:

$$R = \text{Average } (N_1/S_1 + N_2/S_2 + \dots + N_i/S_i)$$

Where  $N_i$  = natural gas flow rate, in acfm, for each 15 minute period  
 $S_i$  = steam flow rate from boiler, in lb/hr, for each 15 minute period

- (3) If the 24-hour daily gas ratio falls below the gas ratio established pursuant to the performance test, or if the gas-burners fail to operate in a normal manner, the permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.
- (b) If the Permittee has conducted a performance test under co-fired conditions to establish a minimum gas ratio, but subsequently wants to operate a boiler without natural gas co-fired or at a gas ratio that is lower than the ratio established at the performance test, then the Permittee must demonstrate that particulate matter emissions are less than the emission limits in D.1.1(a) pursuant to a performance test as described in D.1.6(a) under the desired operating conditions. The Permittee may not begin to operate under the new conditions until the performance test results are submitted to IDEM, OAQ.

#### D.1.11 Visible Emission Notations

---

- (a) Visible emission notations of the stack exhausts of Boilers 1, 2 and 3 shall be performed two times per day during normal daylight operations when exhausting to the atmosphere. A minimum 6-hour period shall separate the two daily readings for each boiler. 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 shutdown 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 the boilers 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.1.12 Coal Characteristics and Consumption Records

---

The Permittee shall record the information described in items (a) through (d) below on a calendar month basis for Boilers 1, 2, and 3.

- (a) The amount (expressed in tons) of coal burned;
- (b) The average sulfur content (expressed in percentage) of coal burned;
- (c) The average heat content (expressed in Btu per pound) of the coal burned; and
- (d) The average sulfur dioxide emission rate (expressed in pounds per MMBtu).

#### D.1.13 Fuel Oil Characteristics and Consumption Records

---

The Permittee shall record the information described in item (a) through (d) below on a calendar month basis for Boiler 4, and Boiler 5:

- (a) The amount (expressed in thousands of gallons (Mgal)) of No. 2 fuel oil burned in Boilers 4 and 5;
- (b) The average sulfur content (expressed in percentage by weight) of the No. 2 fuel oil burned in Boilers 4 and 5;
- (c) The average higher heating value (expressed in Btu per gallon) of the No. 2 fuel oil burned in Boilers 4 and 5; and
- (d) The average sulfur dioxide emission rate (expressed in pounds per MMBtu) of the No. 2 fuel oil for Boilers 4 and 5.

#### D.1.14 Natural Gas Consumption Records

---

The Permittee shall maintain natural gas consumption records for Boiler 5 on a calendar month basis in accordance with Condition D.1.9.

#### D.1.15 Standard Operating Procedures

---

Pursuant to 326 IAC 3-7-5(a), the Permittee shall maintain and implement a standard operating procedure (SOP) for coal sampling, handling, analysis, quality control, quality assurance, and data reporting of the information collected pursuant to 326 IAC 3-7-2. In addition, any revision to the SOP shall be submitted to IDEM, OAM.

#### D.1.16 Visible Emissions Notations

---

The Permittee shall record the visible emissions notations of the coal/natural gas-fired boilers stack exhaust in accordance with Condition D.1.11.

#### D.1.17 Record Keeping Requirements

---

- (a) Records and data required by D.1.10 shall be maintained for boilers operating under the co-fire scenario.
- (b) After September 12, 2007 or upon startup on new boilers, whichever is first, the applicable record keeping requirements of 40 CFR 63 Part DDDDD shall apply.

#### D.1.18 Reporting Requirements

---

- (a) The Permittee shall submit quarterly summary reports of the monthly coal characteristic and consumption records required by Condition D.1.12 for Boilers 1, 2 and 3.
- (b) The Permittee shall submit quarterly summary reports of the monthly fuel oil characteristic and consumption records required by Condition D.1.13 for Boilers 4 and 5.
- (c) The Permittee shall submit quarterly summary reports of the monthly natural gas and fuel oil consumption records required by Condition D.1.14 for Boiler 5.
- (d) All reports shall be submitted to the address listed in Section C – General Reporting Requirements, of this permit, using the reporting form located at the end of this permit, or

its equivalent, within thirty (30) days after the end of the quarter being reported. The report does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

Additional Record Keeping and Reporting Requirements are included in Conditions D.1.22 and D.1.23.

### **Modifications and Construction Requirements [326 IAC 2-7-10.5, 326 IAC 2-7-12 and 326 IAC 2-2]**

#### **D.1.19 Modifications and Construction: Advance Approval of Permit Conditions Requirements**

---

The emission units described in this D section are not subject to the advance approval permit conditions.

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

#### **D.1.20 National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters [40 CFR Part 63, Subpart DDDDD]**

---

- (a) After September 12, 2007 or upon startup of new boilers, whichever is first, the Permittee shall comply with the emission limitations and standards of 40 CFR 63, Subpart DDDDD.
- (b) Since the applicable requirements associated with the compliance options for the affected sources are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition, except as otherwise provided in this condition.

#### **D.1.21 General Provisions Relating to NESHAP [326 IAC 20-1][40 CFR Part 63, Subpart A] [40 CFR Part 63, Subpart DDDDD]**

---

- (a) Pursuant to 40 CFR 63.7565, the provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the affected source for the large solid fuel subcategory (Boilers 1, 2, and 3) and the affected source large gaseous fuel subcategory (Boilers 4 and 5), except when otherwise specified in 40 CFR 63 Subpart DDDDD. The Permittee must comply with 40 CFR 63 Subpart A as stated in 40 CFR 63.7565.
- (b) Since the applicable requirements associated with the compliance options for the affected sources are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition, except as otherwise provided in this condition.

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

#### **D.1.22 National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters - Notification Requirements [40 CFR 63, Subpart DDDDD]**

---

- (a) After September 12, 2007 or upon startup of new boilers, whichever is first, the applicable notification and reporting requirements of 40 CFR 63 Part DDDDD shall apply.
- (b) All notifications and reports shall be submitted to the address listed in Section C – General Reporting Requirements, of this permit. The notifications do require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

D.1.23 Requirement to Submit a Significant Permit Modification Application [326 IAC 2-7-12]  
[326 IAC 2-7-5] [40 CFR Part 63, Subpart DDDDD]

---

The Permittee shall submit an application for a significant permit modification to IDEM, OAQ to include information regarding which compliance option or options will be chosen in the Part 70 permit for the affected source for the large solid fuel subcategory (Boilers 1, 2, and 3).

- (a) The significant permit modification application shall be consistent with 326 IAC 2-7-12, including information sufficient for IDEM, OAQ to incorporate into the Part 70 permit the applicable requirements of 40 CFR 63, Subpart DDDDD, a description of the affected source and activities subject to the standard, and a description of how the Permittee will meet the applicable requirements of the standard.
- (b) The significant permit modification application shall be submitted no later than nine months prior to September 12, 2007.
- (c) The significant permit modification application shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
Indianapolis, Indiana 46204

- (3) **Mass emission calculation:** The Permittee shall calculate CO emissions, in tons, each calendar month by using the CEMS data and flow rate data.
- (4) **Minimum data collection requirements:**
- (A) For the RTOs, the Permittee shall monitor and record CO concentrations as required in Section D.14.
  - (B) For the T49 liquid waste incinerator, the Permittee shall monitor and record CO concentrations as required in Section D.12.
  - (C) For the T149 solids-liquid waste incinerator, the Permittee shall monitor and record CO concentrations as required in Section D.13.
- (5) **Data substitution:**
- (A) During periods of CEMS calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute CO concentration measurement obtained prior to the calibration in lieu of actual readings from the CO CEMS for the RTO and T149 CEMS, and the last valid one-minute CO emission rate measurement obtained prior to the calibration in lieu of actual readings from the CO CEMS for the T49 CEMS.
  - (B) During periods of flow meter calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute exhaust gas flow rate measurement obtained prior to the calibration in lieu of actual readings from the flow meter.
  - (C) During periods of CEMS maintenance, malfunction, repair, or other periods of invalid CO data collection, the Permittee shall substitute the following data in lieu of actual readings from the CO CEMS:
    - (i) When combusting only natural gas, the following CO mass emission rates shall be substituted:
      - (1) RTO CO mass emission rate = 0.05 lb/min
      - (2) T49 CO mass emission rate = 0.10 lb/min
      - (3) T149 CO mass emission rate = 0.07 lb/min
    - (ii) When incinerating a waste stream, the following CO concentrations shall be substituted:
      - (1) RTO CO concentration = 73 ppmv
      - (2) T49 CO concentration = 100 ppmv
      - (3) T149 CO concentration = 100 ppmv
  - (D) During periods of flow meter maintenance, malfunction, repair, or other periods of invalid exhaust gas flow rate data collection, the Permittee shall substitute the following data in lieu of actual readings from the flow meter:
    - (i) When combusting only natural gas, the following CO mass emission rates shall be substituted:
      - (1) RTO CO mass emission rate = 0.05 lb/min
      - (2) T49 CO mass emission rate = 0.10 lb/min
      - (3) T149 CO mass emission rate = 0.07 lb/min

- (4) **Emissions during RTO bypass periods:** When determining compliance with the fluoride emission limit, the Permittee shall include any known fluoride emissions from BPM production buildings not emitted through the RTO due to diversions at the fume transport system. The Permittee may use engineering calculation methods based on ideal gas law equations, stoichiometry, and mass balance, to estimate these emissions.
- (b) The following requirements apply to the T49 liquid waste incinerator and the T149 solids-liquid waste incinerator:
  - (1) **Uncontrolled hydrogen fluoride emissions:** When burning liquid wastes, the Permittee shall determine the mass of fluorine atoms burned in the incinerators by sampling the liquid waste and analyzing the sample for fluorine content, no less frequently than once per quarter. All fluorine atoms shall be considered emitted as hydrogen fluoride (HF). When burning solid wastes in the T149 solids-liquid waste incinerator, the Permittee shall determine monthly HF emissions by multiplying an emission factor of 0.149 pounds/ton solid waste burned by the monthly solid waste throughput.
  - (2) **HF control efficiency:** The Permittee shall base fluoride emissions on an incinerator scrubber control efficiency of 98.0% or a control efficiency determined from an approved stack test. If the compliance monitoring data is not available or indicates the scrubbers are not achieving this control efficiency, the Permittee shall use a control efficiency of zero percent (0%).
  - (3) **Emission calculation:** The Permittee shall calculate fluoride emissions, in tons, for each calendar month by multiplying the amount of uncontrolled HF emissions by the HF control efficiency.

#### F.1.5 Nitrogen oxides (NO<sub>x</sub>) emission limit determination

---

The Permittee shall determine actual annual emissions by employing the following techniques:

- (a) The following requirements apply to the RTOs, the T49 liquid waste incinerator, and the T149 solids-liquid waste incinerator:
  - (1) **NO<sub>x</sub> measurement:** The Permittee shall measure NO<sub>x</sub> concentration in the exhaust of with a NO<sub>x</sub> continuous emission monitoring system (CEMS) in accordance with the requirements of 40 CFR Part 60, Appendix B and 326 IAC 3.
  - (2) **Flow rate measurement:** The Permittee shall measure the actual exhaust gas flow rate from the RTOs and T149 solids-liquid waste incinerator, and measure the combustion and atomized air flow rate into the T49 liquid waste incinerator with a system.
  - (3) **Emission calculation:** The Permittee shall calculate NO<sub>x</sub> emissions, in tons, each calendar month by using the CEMS data and flow rate data.
  - (4) **Data substitution:**
    - (A) During periods of CEMS calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute NO<sub>x</sub> concentration measurement obtained prior to the calibration in lieu of actual readings from the NO<sub>x</sub> CEMS for the RTO and T149 CEMS, and the last valid one-minute NO<sub>x</sub> emission rate measurement obtained prior to the calibration in lieu of actual readings from the NO<sub>x</sub> CEMS for the T49 CEMS.

- (b) The following requirements apply to the T79 Fume Incinerators:
- (1) **NOx emission calculation for natural gas usage:** The Permittee shall determine the amount of natural gas burned by the T79 Fume Incinerators each calendar month. The Permittee shall calculate NOx emissions from natural gas combustion, in tons, each calendar month by multiplying the monthly natural gas usage by an emission factor of 50 lbs/mmscf and converting the resulting emissions to tons.
  - (2) **NOx emission calculation for combustion of nitrogen-containing solvents:** The Permittee shall determine the mass of nitrogen atoms emitted to the T79 fume incinerators [as components of solvents containing nitrogen] by the BPM Support operations by using engineering calculations based on ideal gas law equations, stoichiometry, or mass balance. Six (6%) of the nitrogen atoms shall be considered emitted as nitrogen oxides after combustion in the T79 fume incinerators.
  - (3) **Data substitution:** During periods of time when the Permittee is unable to determine natural gas usage because of auditing, calibration, maintenance, malfunction, repair, or other periods when the natural gas meters for the T79 fume incinerators are not collecting valid data, the Permittee shall determine NOx emissions based on a natural gas consumption rate of 0.0075 mmscf/hour [based on the nominal heat input rate of 7.626 MMBtu/hr per incinerator].

#### F.1.6 Sulfur dioxide (SO<sub>2</sub>) emission limit determination

---

The Permittee shall determine actual annual emissions by employing the following techniques:

- (a) The following requirements apply to RTOs, the T49 liquid waste incinerator, and the T149 solids-liquid waste incinerator:
- (1) **SO<sub>2</sub> measurement:** The Permittee shall measure SO<sub>2</sub> concentration in the exhaust of RTO, and incinerators with a SO<sub>2</sub> continuous emission monitoring system (CEMS) that meets the requirements of 40 CFR Part 60, Appendix B and 326 IAC 3.
  - (2) **Flow rate measurement:** The Permittee shall measure the actual exhaust gas flow rate from the RTOs and the T149 solids-liquid waste incinerator, and measure the combustion and atomized air flow rate into the T49 liquid waste incinerator.
  - (3) **Emission calculation:** The Permittee shall calculate SO<sub>2</sub> emissions, in tons, each calendar month by using the CEMS data and flow rate data.
  - (4) **Data substitution:**
    - (A) During periods of CEMS calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute SO<sub>2</sub> concentration measurement obtained prior to the calibration in lieu of actual readings from the SO<sub>2</sub> CEMS for the RTO and T149 CEMS, and the last valid one-minute SO<sub>2</sub> emission rate measurement obtained prior to the calibration in lieu of actual readings from the SO<sub>2</sub> CEMS for the T49 CEMS.
    - (B) During periods of flow meter calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute exhaust gas flow rate measurement obtained prior to the calibration in lieu of actual readings from the flow meter.

# Indiana Department of Environmental Management Office of Air Quality

## Technical Support Document (TSD) for a Part 70 Significant Permit Modification

### Source Background and Description

<b>Source Name:</b>	<b>Eli Lilly and Company – Tippecanoe Laboratories</b>
<b>Source Location:</b>	<b>1650 Lilly Road, Lafayette, IN, 47909</b>
<b>County:</b>	<b>Tippecanoe</b>
<b>SIC Code:</b>	<b>2833 and 2834</b>
<b>Operation Permit No.:</b>	<b>T157-6879-00006</b>
<b>Operation Permit Issuance Date:</b>	<b>February 27, 2004</b>
<b>Significant Permit Modification No.:</b>	<b>157-20732-00006</b>
<b>Permit Reviewer:</b>	<b>Nathan C. Bell</b>

The Office of Air Quality (OAQ) has reviewed a permit modification application from Eli Lilly and Company requesting changes to the permit. The source requested a change to data substitution requirements during calibrations of the Continuous Emission Monitors (CEMS) on the T49 incinerator and additional language specifying the procedures and monitoring requirements that apply if the source conducts performance tests for a coal-fired boiler while burning a mixture of natural gas and coal (co-fired conditions). In addition, OAQ determined that it was necessary to add a condition to Section B addressing credible evidence and conditions to Section D.1 addressing 40 CFR 63, Subpart DDDDD.

Note: In this TSD, references made to Boilers 1, 2, 3, 4, and 5, are referring to the boilers with unit IDs of BLR001, BLR002, BLR003, BLR004, and BLR005, respectively.

### New Emission Units and Pollution Control Equipment

There are no new emission units or pollution control equipment receiving New Source Review Approval at this source during this review process.

### Permitted Emission Units and Pollution Control Equipment

This permit modification relates to the following emission units and pollution control devices that are permitted under Utility Operations in Sections D.1 of the Part 70 permit:

- (a) Three (3) coal-fired boilers, identified as Boilers 1, 2, and 3, constructed in 1953, each rated at 92 MMBtu per hour, controlled by multiclones, equipped with an ash handling system, and supported by a coal pile and a coal conveyor system. The boilers provide steam to process operations in bulk pharmaceutical manufacturing and fermented products.
- (b) Two (2) natural gas/fuel oil boilers, identified as Boilers 4 and 5, constructed in 1973 and 1982, and rated at 142 MMBtu per hour and 97 MMBtu per hour, respectively. The boilers provide steam to process operations in bulk pharmaceutical manufacturing and fermented products.

### History

Eli Lilly and Company, Tippecanoe Laboratories was issued a Part 70 operation permit on February 27, 2004 for a stationary bulk pharmaceutical manufacturing plant located at 1650 Lilly Road, Lafayette, IN 47907.

**Enforcement Issue**

There are no enforcement actions pending.

**Existing Approvals**

The source was issued a Part 70 Operating Permit T157-6879-00006 on February 27, 2004. The source has since received the following:

- (a) First Significant Permit Modification No: 157-20216-00006, issued on January 19, 2005
- (b) First Administrative Amendment No: 157-20003-00006, issued on April 1, 2005
- (c) Second Administrative Amendment No: 157-21143-00006, issued on May 11, 2005

**Recommendation**

The staff recommends to the Commissioner that the Part 70 Significant Permit 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.

Two applications for the purposes of this review were received on February 10, 2005 and March 3, 2005, respectively. Additional information was received from the source on May 10, 2005 and May 19, 2005.

**Emission Calculations**

See Appendix A of this document for detailed emissions calculations (pages 1 to 3).

**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 or emission 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.

This table reflects the potential to emit (PTE) before controls for the modification. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Emission Scenario for Boilers 1, 2, and 3	Uncontrolled Potential to Emit (PTE) (tons/year)						
	PM	PM-10	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAPs
Existing operations with coal combustion only	847	312	7222	396	2.6	317	90
Operations assuming natural gas combustion only	2.3	9.2	0.7	121	6.6	102	2.3
Co-fired operations for this modification (maximum of above)	847	312	7222	396	6.6	317	90
Net Emission Increase for this modification (from coal only to maximum co-fired)	---	---	---	---	4.0	---	---

### Justification for Modification

The Part 70 Permit is being revised through a Significant Permit Modification. This modification is being performed pursuant to 326 IAC 2-7-12(d)(1): “Significant modification procedures shall be used for applications requesting Part 70 permit modifications that do not qualify as minor permit modifications or as administrative amendments. Every significant change in existing monitoring Part 70 permit terms or conditions and every relaxation of reporting or record keeping permit terms or conditions shall be considered significant.”

Since the changes requested in this modification do not qualify as a minor permit modification or as an administrative amendment and would change the compliance monitoring requirements, this modification will be significant.

### County Attainment Status

The source is located in Tippecanoe County.

Pollutant	Status
PM10	Attainment or Unclassifiable
PM2.5	Attainment or Unclassifiable
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment or Unclassifiable
1-Hour Ozone	Attainment or Unclassifiable
8-Hour Ozone	Attainment or Unclassifiable
CO	Attainment or Unclassifiable
Lead	Attainment or Unclassifiable

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standard. Tippecanoe County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions and NOx 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) Tippecanoe County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability – Entire Source section.
- (c) Tippecanoe County has been classified as attainment or unclassifiable for all the 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.
- (d) Fugitive Emissions  
This source is considered a Chemical Process Plant source category as listed under 326 IAC 2-2, since it manufactures chemical products to be used for ultimate consumption under the Standard Industrial Classification (IC) Codes of 2833 and 2834. Therefore, the fugitive emissions are counted toward determination of PSD applicability.

**Source Status**

Existing Source PSD or Emission Offset 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	>100
PM-10	>100
SO2	>100
VOC	>100
CO	>100
NOx	>100
Single HAP	>10
Total HAPs	>25

- (a) This existing source is a major PSD stationary source because an attainment regulated pollutant is emitted at a rate of 100 tons per year or greater and it is in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements are applicable.

**Potential to Emit After Issuance for the Modification**

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 permit modification.

Modification	VOC Emissions (tons/year)
Net emission increase to Boilers 1, 2, and 3 under co-fired operations	4.0
Major PSD Modification Significant Threshold Level	40

- (a) This modification to an existing major PSD stationary source is not major, because the net emission increase of the modification is less than the PSD significant threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply to this modification.

**Federal Rule Applicability**

- (a) Boilers 1, 2, 3, 4, and 5 are subject to the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD. After September 12, 2007 or upon startup of new boilers, whichever is first, the Permittee shall comply with the emission limitations and standards of 40 CFR 63, Subpart DDDDD. Boilers 1, 2, and 3 comprise one existing affected source for the large solid fuel subcategory, because they meet the criteria in the definition in 40 CFR 63.7575 for the large solid fuel subcategory. Boilers 4 and 5 comprise one existing affected source for the large gaseous fuel subcategory, because they meet the criteria in the definition in 40 CFR 63.7575 for the large gaseous fuel subcategory. A copy of the signed, final rule is available at <http://www.epa.gov/ttn/atw/boiler/boilerpg.html>.

Pursuant to 40 CFR 63.7545 and 40 CFR 63.7506, the Permittee was required to submit an Initial Notification that applies to the affected sources for the large solid fuel subcategory (Boilers 1, 2, and 3) and the large gaseous fuel subcategory (Boilers 4 and 5) containing the information specified in 40 CFR 63.9(b)(2) not later than 120 days after November 12, 2004. The source submitted the Initial Notification for Boilers 1, 2, 3, 4, and 5 on February 23, 2005.

This rule has a future compliance date; therefore, the specific details of the rule and how the Permittee will demonstrate compliance for the affected source for the large solid fuel subcategory (Boilers 1, 2, and 3) are not provided in the permit. The Permittee shall submit an application for a significant permit modification nine months prior to the compliance date for the MACT that will specify the option or options for the emission limitations and standards and methods for determining compliance chosen by the Permittee. At that time, IDEM, OAQ will include the specific details of the rule and how the Permittee will demonstrate compliance.

The provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the affected sources, except when otherwise specified in 40 CFR 63 Subpart DDDDD. The Permittee must comply with 40 CFR 63 Subpart A as stated in 40 CFR 63.7565.

- (b) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in the permit for this source.
- (c) Boilers 1, 2, 3, 4, and 5 are not subject to the requirements of 326 IAC 12 or 40 CFR 60, Subpart D (60.40 through 60.46), Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971, because each of the fossil-fuel-fired (including natural gas, petroleum, and coal) steam generating units at this source has a heat input rate less than 250 million Btu per hour (MMBtu/hr). [40 CFR 60.40(a)(1)]
- (d) Boilers 1, 2, 3, 4, and 5 are not subject to the requirements of 326 IAC 12 or 40 CFR 60, Subpart Da (60.40a through 60.49a), Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978, because each of the fossil-fuel-fired (including natural gas, petroleum, and coal either alone or in combination with any other fuel) steam generating units at this source has a heat input rate less than 250 million Btu per hour (MMBtu/hr) and this source does not produce steam for the purpose of generating and supplying electrical power to any utility power distribution system for sale. [40 CFR 60.40a(a)(1)]
- (e) Boilers 1, 2, 3, 4, and 5 are not subject to the requirements of 326 IAC 12 or 40 CFR 60, Subpart Db (60.40b through 60.49b), Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, because none of the boilers at plant site were constructed, reconstructed, or modified after June 19, 1984. [40 CFR 60.40b(a)]
- (f) Boilers 1, 2, 3, 4, and 5 are not subject to the requirements of 326 IAC 12 or 40 CFR 60, Subpart Dc (60.40c through 60.48c), Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, because none of the boilers at this source were constructed, reconstructed, or modified after June 9, 1989. [40 CFR 60.40c(a)]
- (g) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this modification.

## State Rule Applicability

### 326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This existing source permitted under Part 70 Permit No. T157-6879-00006 (issued on February 27, 2004), is a major PSD stationary source because it is one of the 28 listed source categories (i.e. Chemical Process Plant) under 326 IAC 2-2, and an attainment regulated pollutant is emitted at a rate of 100 tons per year or greater. This modification to an existing major PSD stationary source is not major because the net emissions increase of the modification for each pollutant, is less than the applicable PSD significant threshold levels (see Potential to Emit for Modification after Issuance for the Modification Table on page 4). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply to this modification.

### 326 IAC 2-4.1-1 (New Source Toxics Control)

Pursuant to 326 IAC 2-4.1-1 (New Source Toxics Control), any source that constructs or reconstructs a major source of HAPs, as defined by 40 CFR 63.41, after July 27, 1997, must control emissions from that source using technologies consistent with the Maximum Achievable Control Technology (MACT). This rule does not apply to this modification, because this modification is not considered a reconstruction as defined by 40 CFR 63.41.

### 326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it is located in Tippecanoe County and is required to have an operating permit under 326 IAC 2-7, Part 70 Permit Program. Pursuant to this rule, the Permittee shall submit an emission statement certified pursuant to the requirements of 326 IAC 2-6. This statement must be received in accordance with the compliance schedule specified in 326 IAC 2-6-3 and must comply with the minimum requirements specified in 326 IAC 2-6-4. The submittal should cover the period identified in 326 IAC 2-6.

### 326 IAC 3-7-2(b) (Coal Sampling and Analysis Procedures)

Because the SO<sub>2</sub> emissions from the coal-fired boilers (Boilers 1, 2, and 3) are related to the sulfur content in the coal, the Permittee is required to sample and analyze the coal in accordance with the sampling and analysis procedure outlined in 326 IAC 3-7-5. This rule is used to demonstrate compliance with the SO<sub>2</sub> limit under 326 IAC 7-1.1-2.

### 326 IAC 3-7-4 (Fuel Oil Sampling and Analysis Procedures)

Before fuel oil can be burned in Boilers 4 and 5, the fuel oil analysis of the sulfur content must be compliant with the SO<sub>2</sub> limitations established in 326 IAC 7-1.1-2.

### 326 IAC 4-2-2 (Incinerators)

Boilers 1, 2, 3, 4, and 5 are not incinerators, as defined by 326 IAC 1-2-34, since they do not burn waste substances. Therefore, these boilers are not subject to 326 IAC 4-2-2.

### 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 forty percent (40%) 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 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.

These boilers are allowed temporary alternative opacity limits for startup/shut down of a boiler and when removing ashes or blowing tubes in a boiler pursuant to 326 IAC 5-1-3(a) and (b).

#### 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)

The Boilers 1, 2, 3, 4, and 5 are subject to the requirements of 326 IAC 6-2-3, since each of the units are sources of indirect heating, were constructed prior to September 21, 1983, and are located in Tippecanoe County. Pursuant to this rule:

The particulate emissions from each coal-fired boiler (Boilers 1, 2, and 3) shall not exceed 0.56 pounds per million British thermal units (MMBtu) heat input.

The particulate emissions from Boiler 4 shall not exceed 0.39 pounds per MMBtu heat input and Boiler 5 shall not exceed 0.31 pounds per MMBtu heat input.

#### 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-1(b)(1), each of the boilers are exempt from the requirements of 326 IAC 6-3, because they each are sources of indirect heating.

#### 326 IAC 7-1 (Sulfur dioxide emission limitations: applicability)

Boilers 1, 2, 3, 4, and 5 are subject to 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations) because each boiler has potential SO<sub>2</sub> emissions greater than twenty-five (25) tons per year.

The SO<sub>2</sub> emissions from Boilers 1, 2 and 3 shall be limited to 6.0 pounds per MMBtu heat input, when burning coal or when burning a mixture of coal and natural gas (co-fired conditions).

The SO<sub>2</sub> emissions from Boilers 4 and 5 shall be limited to 0.5 pounds per MMBtu heat input, when burning No. 2 fuel oil.

### Testing and Compliance Requirements

This modification will have the following testing and compliance requirements:

#### **Alternative Operating Scenario (Co-Fire)**

- (a) The Permittee may elect to perform performance tests while burning a mixture of natural gas and coal (co-fire). The Permittee shall inform IDEM in writing whenever the Co-Fire operating scenario is used, in which case the following monitoring requirements and limits apply.
  - (1) The Permittee shall install and operate a gas flow meter and a steam flow rate flowmeter on each boiler where the co-fire option is used. A Preventative Maintenance Plan, in accordance with Section B – Preventative Maintenance Plan, is required for the monitors.
  - (2) The 24-hour daily average gas ratio (R) shall be greater than or equal to the value determined in the most recent performance test. The gas ratio shall be calculated by:

$$R = \text{Average } (N_1/S_1 + N_2/S_2 + \dots + N_i/S_i)$$

Where  $N_i$  = natural gas flow rate, in acfm, for each 15 minute period  
 $S_i$  = steam flow rate from boiler, in lb/hr, for each 15 minute period

- (3) If the 24-hour daily gas ratio falls below the gas ratio established pursuant to the performance test, or if the gas-burners fail to operate in a normal manner, the permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.
- (b) If the Permittee has conducted a performance test under co-fired conditions to establish a minimum gas ratio, but subsequently wants to operate a boiler without natural gas co-fired or at a gas ratio that is lower than the ratio established at the performance test, then the Permittee must demonstrate particulate matter emissions are less than the emission limits in D.1.1(a) pursuant to a performance test as described in D.1.8(a) under the desired operating conditions. The Permittee may not begin to operate under the new conditions until the performance test results are submitted to IDEM, OAQ.

**40 CFR Part 63, Subpart DDDDD**

- (a) All performance testing and/or fuel analyses shall be performed as required by 40 CFR 63 Part DDDDD.

No other existing testing and compliance requirements will change as a result of this modification. The following existing testing and compliance activities are required for the boilers:

- (a) Visible emission notations of the stack exhausts of the coal-fired boilers shall be performed once per shift (Lilly operates 2 shifts), or two times per day, during normal daylight operations when exhausting to the atmosphere.
- (b) Coal sampling and analysis shall be performed according to the Permittee's Coal Sampling and Assay Plan, submitted pursuant to 326 IAC 3-7-5(a), to demonstrate compliance with SO<sub>2</sub> limitations under 326 IAC 7-1.1-2.
- (c) Particulate stack tests for the coal fired boilers (Boilers 1, 2, and 3) shall be performed once every three years to demonstrate compliance with the particulate standards under 326 IAC 6-2-3. This three-year cycle is based on an agreement between Lilly and IDEM, established in 1988.
- (d) Fuel oil and natural gas usage for Boiler 5 must be monitored on a monthly basis to demonstrate compliance with the NO<sub>x</sub> and SO<sub>2</sub> limitations required by 326 IAC 2-2.
- (e) Analysis of the fuel oil must show compliance with the SO<sub>2</sub> limits established under 326 IAC 7-1.1-2 before the fuel oil can be burned in Boilers 4 and 5.
- (f) Preventive maintenance plan required for boilers and multiclones.

**Changes to the Part 70 Permit Due to This Modification:**

The following changes have been made to the permit, with deleted language as ~~strikeouts~~ and new language **bolded**:

**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) **D.1 Utilities Operations:** The utilities operations consist of three coal/**natural gas**-fired boilers equipped with an ash handling system and supported by a coal pile and coal conveyor system, and two natural gas boilers with fuel oil backup supplied by one fuel oil tank. The boilers provide steam to process operations in bulk pharmaceutical manufacturing and fermented products. The detailed equipment list is located in Section D.1 of this permit.

**B.25 Credible Evidence [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [62 FR 8314] [326 IAC 1-1-6]**

**For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.**

**SECTION D.1 UTILITIES OPERATION CONDITIONS**

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

The information describing the processes contained in the following facility description boxes is descriptive information and does not constitute enforceable conditions:

- (a) The following emission units are subject to applicable requirements described in this D section:

Emission* Unit ID	Emission Unit Description	Stack/Vent	Nominal Capacity	UOM	Control Device
<i>Building T6:</i>					
BLR001	Coal/ <b>Natural Gas</b> Boiler	S-T6-BLR001	92	MMBtu/hr	Multiclone001
BLR002	Coal/ <b>Natural Gas</b> Boiler	S-T6-BLR002	92	MMBtu/hr	Multiclone002
BLR003	Coal/ <b>Natural Gas</b> Boiler	S-T6-BLR003	92	MMBtu/hr	Multiclone003

\* In this permit, boilers BLR001, BLR002, BLR003, BLR004, and BLR005 are referred to as Boilers 1, 2, 3, 4, and 5, respectively.

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

**D.1.1 Particulate Matter (PM) Limitations [326 IAC 6-2-3, 326 IAC 6-3, and PC (79) 1510 Issued March 22, 1982 (Revised by this permit)]**

---

- (a) Pursuant to 326 IAC 6-2-3(b) (Particulate Matter Emission Limitations for Sources of Indirect Heating), particulate emissions from each coal/**natural gas**-fired boiler (Boilers 1, 2, and 3) shall not exceed 0.56 pounds per million British thermal units (MMBtu) heat input.

D.1.2 Sulfur Dioxide (SO<sub>2</sub>) Limitations [326 IAC 2-2, 326 IAC 7-1.1-2, and PC (79) 1510 Issued March 22, 1982 (Revised by this permit)]

---

- (a) Pursuant to 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations), the SO<sub>2</sub> emissions from each of the coal/**natural gas**-fired boilers (Boilers 1, 2 and 3) shall not exceed 6.0 pounds per MMBtu heat input.

D.1.5 Preventive Maintenance Plans/**Start-up Shutdown, and Malfunction Plans** [326 IAC 2-7-5(13)]  
**[40 CFR Part 63, Subpart DDDDD]**

---

- (a) **Until September 12, 2007 or until startup of new boilers, whichever is first, A-a** Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the coal/**natural gas**-fired boilers and associated multiclone control devices.
- (b) **After September 12, 2007 or upon startup of new boilers, whichever is first, a Start-Up Shutdown, and Malfunction Plan is required for each boiler as required by 40 CFR 63 Part DDDDD, and in accordance with Section B – Preventative Maintenance Plan, of this permit.**

**Additional Emission Limitations and Standards are included in Conditions D.1.20 and D.1.21.**

**Testing and Monitoring Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-7-5(1)]**

D.1.6 Testing Requirements [326 IAC 2-7-6(1), (6)] **[40 CFR Part 63, Subpart DDDDD]**

---

- (c) **All performance testing and/or fuel analyses shall be performed as required by 40 CFR 63 Part DDDDD.**

D.1.7 Coal Sampling and Analysis for SO<sub>2</sub> [326 IAC 3-7 and 326 IAC 7-2]

---

The Permittee shall collect ~~fuel~~**coal** sampling and analysis data on a calendar month average in accordance with one of the following methods specified in 326 IAC 3 for each of the coal/**natural gas**-fired boilers (Boilers 1, 2 and 3):

D.1.10 **Alternative Operating Scenarios** ~~Control Equipment Operation (Deleted)~~

---

~~Condition D.1.10 was deleted pursuant to Administrative Permit Amendment 157-20003-00006.~~

- (a) **The Permittee may elect to perform the tests in D.1.6(a) while burning a mixture of natural gas and coal (co-fire). The Permittee shall inform IDEM in writing whenever the Co-Fire operating scenario is used, in which case the following monitoring requirements and limits apply.**

- (1) **The Permittee shall install and operate a gas flow meter and a steam flow rate flowmeter on each boiler where the co-fire option is used. A Preventative Maintenance Plan, in accordance with Section B – Preventative Maintenance Plan, is required for the monitors.**
- (2) **The 24-hour daily average gas ratio (R) shall be greater than or equal to the value determined in the most recent performance test. The gas ratio shall be calculated by:**

$$R = \text{Average } (N_1/S_1 + N_2/S_2 + \dots + N_i/S_i)$$

Where  $N_i$  = natural gas flow rate, in acfm, for each 15 minute period  
 $S_i$  = steam flow rate from boiler, in lb/hr, for each 15 minute period

- (3) If the 24-hour daily gas ratio falls below the gas ratio established pursuant to the performance test, or if the gas-burners fail to operate in a normal manner, the permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.
- (b) If the Permittee has conducted a performance test under co-fired conditions to establish a minimum gas ratio, but subsequently wants to operate a boiler without natural gas co-fired or at a gas ratio that is lower than the ratio established at the performance test, then the Permittee must demonstrate that particulate matter emissions are less than the emission limits in D.1.1(a) pursuant to a performance test as described in D.1.6(a) under the desired operating conditions. The Permittee may not begin to operate under the new conditions until the performance test results are submitted to IDEM, OAQ.

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

##### D.1.16 Visible Emissions Notations

---

The Permittee shall record the visible emissions notations of the coal/**natural gas**-fired boilers stack exhaust ~~when combusting coal~~ in accordance with Condition D.1.11.

##### D.1.17 Record Keeping Requirements (Deleted)

---

~~Condition D.1.17 was deleted pursuant to Administrative Permit Amendment 157-20003-00006.~~

- (a) Records and data required by D.1.10 shall be maintained for boilers operating under the co-fire scenario.
- (b) After September 12, 2007 or upon startup on new boilers, whichever is first, the applicable record keeping requirements of 40 CFR 63 Part DDDDD shall apply.

Additional Record Keeping and Reporting Requirements are included in Conditions D.1.22 and D.1.23.

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

##### D.1.20 National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters [40 CFR Part 63, Subpart DDDDD]

---

- (a) After September 12, 2007 or upon startup of new boilers, whichever is first, the Permittee shall comply with the emission limitations and standards of 40 CFR 63, Subpart DDDDD.
- (b) Since the applicable requirements associated with the compliance options for the affected sources are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition, except as otherwise provided in this condition.

**D.1.21 General Provisions Relating to NESHAP [326 IAC 20-1][40 CFR Part 63, Subpart A] [40 CFR Part 63, Subpart DDDDD]**

---

- (a) Pursuant to 40 CFR 63.7565, the provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the affected source for the large solid fuel subcategory (Boilers 1, 2, and 3) and the affected source large gaseous fuel subcategory (Boilers 4 and 5), except when otherwise specified in 40 CFR 63 Subpart DDDDD. The Permittee must comply with 40 CFR 63 Subpart A as stated in 40 CFR 63.7565.
- (b) Since the applicable requirements associated with the compliance options for the affected sources are not included and specifically identified in this permit, the permit shield authorized by the B section of this permit in the condition titled Permit Shield, and set out in 326 IAC 2-7-15 does not apply to paragraph (a) of this condition, except as otherwise provided in this condition.

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

**D.1.22 National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters - Notification Requirements [40 CFR 63, Subpart DDDDD]**

---

- (a) After September 12, 2007 or upon startup of new boilers, whichever is first, the applicable notification and reporting requirements of 40 CFR 63 Part DDDDD shall apply.
- (b) All notifications and reports shall be submitted to the address listed in Section C – General Reporting Requirements, of this permit. The notifications do require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

**D.1.23 Requirement to Submit a Significant Permit Modification Application [326 IAC 2-7-12] [326 IAC 2-7-5] [40 CFR Part 63, Subpart DDDDD]**

---

The Permittee shall submit an application for a significant permit modification to IDEM, OAQ to include information regarding which compliance option or options will be chosen in the Part 70 permit for the affected source for the large solid fuel subcategory (Boilers 1, 2, and 3).

- (a) The significant permit modification application shall be consistent with 326 IAC 2-7-12, including information sufficient for IDEM, OAQ to incorporate into the Part 70 permit the applicable requirements of 40 CFR 63, Subpart DDDDD, a description of the affected source and activities subject to the standard, and a description of how the Permittee will meet the applicable requirements of the standard.
- (b) The significant permit modification application shall be submitted no later than nine months prior to September 12, 2007.
- (c) The significant permit modification application shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
Indianapolis, Indiana 46204

**F.1.3 Carbon monoxide (CO) emission limit determination**

---

The Permittee shall determine actual annual emissions by employing the following techniques:

- (a) The following requirements apply to the RTOs, the T49 liquid waste incinerator, and the T149 solids-liquid waste incinerator:
  - (5) Data substitution:
    - (A) During periods of CEMS calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute CO concentration measurement obtained prior to the calibration in lieu of actual readings from the CO CEMS **for the RTO and T149 CEMS, and the last valid one-minute CO emission rate measurement obtained prior to the calibration in lieu of actual readings from the CO CEMS for the T49 CEMS.**

#### F.1.5 Nitrogen oxides (NO<sub>x</sub>) emission limit determination

---

The Permittee shall determine actual annual emissions by employing the following techniques:

- (a) The following requirements apply to the RTOs, the T49 liquid waste incinerator, and the T149 solids-liquid waste incinerator:
  - (4) Data substitution:
    - (A) During periods of CEMS calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute NO<sub>x</sub> concentration measurement obtained prior to the calibration in lieu of actual readings from the NO<sub>x</sub> CEMS **for the RTO and T149 CEMS, and the last valid one-minute NO<sub>x</sub> emission rate measurement obtained prior to the calibration in lieu of actual readings from the NO<sub>x</sub> CEMS for the T49 CEMS.**

#### F.1.6 Sulfur dioxide (SO<sub>2</sub>) emission limit determination

---

The Permittee shall determine actual annual emissions by employing the following techniques:

- (a) The following requirements apply to RTOs, the T49 liquid waste incinerator, and the T149 solids-liquid waste incinerator:
  - (4) Data substitution:
    - (A) During periods of CEMS calibration, the Permittee shall substitute, in one-minute increments, the last valid one-minute SO<sub>2</sub> concentration measurement obtained prior to the calibration in lieu of actual readings from the SO<sub>2</sub> CEMS **for the RTO and T149 CEMS, and the last valid one-minute SO<sub>2</sub> emission rate measurement obtained prior to the calibration in lieu of actual readings from the SO<sub>2</sub> CEMS for the T49 CEMS.**

### Conclusion

The proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Permit Modification No. 157-20732-00006.

**Appendix A: Emissions Calculations**

**Natural Gas Combustion Only**

**MM BTU/HR <100**

**Small Industrial Boiler**

**Company Name: Eli Lilly and Company – Tippecanoe Laboratories**

**Address City IN Zip: 1650 Lilly Road, Lafayette, IN, 47909**

**Significant Permit Modification No: 157-20732**

**Pit ID: 157-00006**

**Reviewer: Nathan C. Bell**

**Date: May 31, 2005**

Emission Unit	Unit Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
Boiler 1	92	805.9
Boiler 2	92	805.9
Boiler 3	92	805.9
<b>Totals</b>	276	2417.8

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	2.3	9.2	0.7	120.9	6.6	101.5

\*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

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: Eli Lilly and Company – Tippecanoe Laboratories**

**Address City IN Zip: 1650 Lilly Road, Lafayette, IN, 47909**

**Significant Permit Modification No: 157-20732**

**Plt ID: 157-00006**

**Reviewer: Nathan C. Bell**

**Date: May 31, 2005**

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	2.539E-03	1.451E-03	9.067E-02	2.176E+00	4.110E-03

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
Potential Emission in tons/yr	6.044E-04	1.330E-03	1.692E-03	4.594E-04	2.539E-03

Methodology is the same as page 1.

<b>Total HAPs</b>	<b>2.28</b>	<b>tons/yr</b>
-------------------	-------------	----------------

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

**Appendix A: Emissions Calculations**  
**Coal combustion: Chain grate stokers**

**Company Name: Eli Lilly and Company – Tippecanoe Laboratories**  
**Address City IN Zip: 1650 Lilly Road, Lafayette, IN, 47909**  
**Significant Permit Modification No: 157-20732**  
**Plt ID: 157-00006**  
**Reviewer: Nathan C. Bell**  
**Date: May 31, 2005**

Emission Unit	Unit Heat Input Capacity MMBtu/hr	Potential Throughput tons/year
Boiler 1	92	35,193
Boiler 2	92	35,193
Boiler 3	92	35,193
<b>Totals</b>	276	105,579

Heat Content of Coal =  Btu/lb of Coal  
Weight % Sulfur in Fuel, S =  %

Emission Factor in lb/ton	Pollutant						
	PM*	PM10*	SO2	NOx	VOC	CO	Total HAPs
	16.0	6.04	136.8 (38S)	7.5	0.05	6.00	1.71
Potential Emission in tons/yr	846.7	318.8	7221.6	395.9	2.6	316.7	90.4
Potential Emission in lbs/MMBtu	0.700		5.974				

**Methodology**

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

VOC emission factor is from Table 1.1-19 (Total non-methane organic carbon).

Potential Throughput (tons/year) = Heat Input Capacity (MMBtu/hr) x 10<sup>6</sup> Btu/MMBtu / Heat Content of Coal (Btu/lb) / 2000 lb/ton x 8,760 hrs/yr

Emission Factors from AP-42, Chapter 1.1 for industrial overfeed stoker SCC 1-02-002-05/25 (Supplement E, 9/98)

Additional emission factors for commercial/institutional and electric generation boilers are available in AP-42, Chapter 1.1.

HAPs emission factors (EF) are available in AP-42, Chapter 1.1. Primary HAP EF include hydrogen chloride (EF = 1.2 lb/ton) and hydrogen fluoride (EF = 0.5 lb/ton)

For HAP emission factors see Tables 1.1-12, 1.1-13, 1.1-14, 1.1-15, and 1.1-18

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

Emissions (lbs/MMBtu) = 10<sup>6</sup> Btu/MMBtu / Heat Content of Coal (Btu/lb) / 2000 lb/ton x Emission Factor (lb/ton)