Thomas R. Ward
Mead Johnson & Company
2400 West Lloyd Expressway
Evansville, Indiana 47721

Re: CP-163-10280
Modification to CP-163-9713-00015

Dear Mr. Ward:

Mead Johnson & Company was issued a Construction Permit on August 24, 1998, for the Central Steam Utility Plant (CSUP) located at the Evansville, Indiana, source. On October 26, 1998, Mead Johnson & Company submitted an application requesting a change in the designed firing rates of the boilers Nos. 8, 9, and 10 (designated emission units CSUP-1, 2, and 3) and a decrease in output capacity of the emergency electric generator (designated emission unit CSUP-4). The Office of Air Management (OAM) has determined that the following unit descriptions and operation conditions of the permit (CP-163-9713-00015) shall be modified as follows:

1. The emission unit descriptions in Item A.2 on Page 4 of the permit shall be revised to reflect the new maximum heat input rates of the boilers and the reduced size of the emergency generator as follows:

A.2 Emission Units and Pollution Control Equipment Summary
This stationary source consists of the following emission units and pollution control devices:

(a) One (1) natural gas fired boiler with low NOx burner and flue gas recirculation system identified as CSUP-1, maximum capacity rated at ~~97.9~~ **98.6** million British thermal units per hour fired with natural gas, rated at ~~93.40~~ **93.9** million British thermal units per hour fired with No. 2 distillate fuel oil, maximum capacity rated at 80,000 lbs saturated steam per hour at ~~300~~ **400** psig operating pressure and 400 to 450^0 F, exhausting at one (1) stack identified as CSUP-S_1;

(b) One (1) natural gas fired boiler with low NOx burner and flue gas recirculation system identified as CSUP-2, maximum capacity rated at ~~97.9~~ **98.6** million British thermal units per hour fired with natural gas, rated at ~~93.40~~ **93.9** million British thermal units per hour fired with No. 2 distillate fuel oil, maximum capacity rated at 80,000 lbs saturated steam per hour at ~~300~~ **400** psig operating pressure and 400 to 450^0 F, exhausting at one (1) stack identified as CSUP-S_2;

(c) One (1) natural gas fired boiler with low NOx burner and flue gas recirculation system identified as CSUP-3, maximum capacity rated at ~~97.9~~ **98.6** million British thermal units per hour fired with natural gas, rated at ~~93.40~~ **93.9** million British thermal units per hour fired with No. 2 distillate fuel oil, maximum capacity rated at 80,000 lbs saturated steam per hour at ~~300~~ **400** psig operating pressure and 400 to 450^0 F, exhausting at one (1) stack identified as CSUP-S_3;

(d) One (1) diesel fuel oil fired emergency electric generator identified as CSUP-4, rated at ~~14.90~~ **7.20** million British thermal units (mmBtu/hr) or capable of maximum ~~1,600~~ **750** KW output, exhausting at one (1) stack identified as CSUP-S_4;

2. The emission units descriptions in Section D.1, at the top of Page 16 of the permit, Items (a) through (d) shall be revised to be consistent with the changes outlined in Item 1, above.

3. Item (a) of Condition D.1.1 (Sulfur Dioxide (SO_2)) on Page 16 of the permit shall be revised as follows to reflect the changed maximum heat input capacity of the boilers when firing No. 2 fuel oil:

D.1.1 (a) The SO_2 emissions from the ~~93.40~~ **93.9** mm Btu per hour oil-fueled boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall not exceed five tenths (0.5) pounds per million Btu heat input; or

4. Condition D.1.3 (Particulate Matter Limitation) on Page 17 of the permit shall be revised as follows to reflect the changed maximum heat input capacities of the boilers:

D.1.3 Particulate Matter Limitation [326 IAC 6-2-4]
The particulate matter (PM) emissions from three (3) boilers rated at ~~97.9~~ **98.6** MMBTU/hr burning natural gas or rated ~~93.40~~ **93.9** mmBtu/hr burning NO. 2 distillate fuel oil identified as CSUP-1, CSUP-2 and CSUP-3 using natural gas or No.2 fuel distillate oil shall be limited to 0.22 pounds per MMBTU heat input.

5. Items (a), (b) and (c) of Condition D.1.4 (PSD Minor Limit) on Page 17 of the permit shall be revised as follows to reflect the changes to the maximum heat input capacities of the boilers and to modify the fuel oil usage limitation for the emergency generator to be consistent with 500 operating hours for the unit's reduced size:

D.1.4 (a) NOx emissions from the ~~97.9~~ **98.6** MMBTU/hr boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall be limited to 0.08 pounds per MMBTU (lb./mmBtu) while burning natural gas only and;

(b) NOx emissions from the ~~93.40~~ **93.9** MMBTU/hr boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall be limited to 0.08 pounds per MMBTU (lb./mmBtu) while burning No. 2 distillate fuel oil only and;

(c) The input diesel fuel oil of the electrical generator identified as CSUP-4 shall be limited to ~~48,780~~ **25,643** gallons per year, rolled on a monthly basis. This production limitation is equivalent to NO_X emissions of ~~14.30~~ **4.4** tons per year, rolled on a monthly basis.

6. The source information on the quarterly report form included as Page 25 of the permit has been revised to reflect the reduced fuel oil usage limit for the emergency generator as follows:

Source Name:	Mead Johnson & Company
Source Address:	2400 West Lloyd Expressway, Evansville, Indiana 47721
Mailing Address:	2400 West Lloyd Expressway, Evansville, Indiana 47721
Construction Permit No.:	163-9713-00015
Facility:	Electrical Generator (CSUP-4)
Parameter:	NOx Emissions
Limit:	~~48,780~~ **25,643** gallons diesel fuels/ year, rolled on a monthly basis.

All other conditions of the permit (CP-163-9713-00015) shall remain unchanged and in effect. Please attach a copy of this modification to the front of the original construction 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 Janusz Johnson, OAM at the above address; or by phone at 317-232-8325 or 1800-451-6027 (dial “0" and ask for ext. 2-8325).

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

JKJ
Attachments: modified permit pages (5 pages)

cc: File - Vanderburgh County
Evansville EPA
Air Compliance Section Inspector - Dave Holder
Compliance Data Section - Jerri Curless
Administrative and Development - Janet Mobley
Technical Support and Modeling - Nancy Landau

CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT

and

EVANSVILLE ENVIRONMENTAL PROTECTION AGENCY

Mead Johnson & Company
2400 West Lloyd Expressway
Evansville, Indiana 47721

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP-163-9713-00015	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date: August 24, 1998

Permit Modification No.: CP-163-10280	Pages Affected: 4, 16, 17 and 25
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) and Evansville EPA, and presented in the permit application.

A.1 General Information

The Permittee owns and operates stationary pharmaceutical formulation and nutritional products operations that manufacture a pharmaceutical and nutritional products.

Responsible Official:	Thomas R. Ward
Source Address:	2400 West Lloyd Expressway, Evansville, Indiana 47721
Mailing Address:	2400 West Lloyd Expressway, Evansville, Indiana 47721
SIC Code:	2834 & 2099
County Location:	Vanderburgh
County Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source, under PSD Rules; Major Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary

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

(a) One (1) natural gas fired boiler with low NOx burner and flue gas recirculation system identified as CSUP-1, maximum capacity rated at 98.6 million British thermal units per hour fired with natural gas, rated at 93.9 million British thermal units per hour fired with No. 2 distillate fuel oil, maximum capacity rated at 80,000 lbs saturated steam per hour at 400 psig operating pressure and 400 to 450^0 F, exhausting at one (1) stack identified as CSUP-S_1;

(b) One (1) natural gas fired boiler with low NOx burner and flue gas recirculation system identified as CSUP-2, maximum capacity rated at 98.6 million British thermal units per hour fired with natural gas, rated at 93.9 million British thermal units per hour fired with No. 2 distillate fuel oil, maximum capacity rated at 80,000 lbs saturated steam per hour at 400 psig operating pressure and 400 to 450^0 F, exhausting at one (1) stack identified as CSUP-S_2;

(c) One (1) natural gas fired boiler with low NOx burner and flue gas recirculation system identified as CSUP-3, maximum capacity rated at 98.6 million British thermal units per hour fired with natural gas, rated at 93.9 million British thermal units per hour fired with No. 2 distillate fuel oil, maximum capacity rated at 80,000 lbs saturated steam per hour at 400 psig operating pressure and 400 to 450^0 F, exhausting at one (1) stack identified as CSUP-S_3;

(d) One (1) diesel fuel oil fired emergency electric generator identified as CSUP-4, rated at 7.20 million British thermal units (mmBtu/hr) or capable of maximum 750 KW output, exhausting at one (1) stack identified as CSUP-S_4;

(e) One (1) fixed roof tank with a maximum design capacity of 10,000 gallons identified as

SECTION D.1 FACILITY OPERATION CONDITIONS

(a) One (1) natural gas fired boiler with low NOx burner and flue gas recirculation system identified as CSUP-1, maximum capacity rated at 98.6 million British thermal units per hour fired with natural gas, rated at 93.9 million British thermal units per hour fired with No. 2 distillate fuel oil, maximum capacity rated at 80,000 lbs saturated steam per hour at 400 psig operating pressure and 400 to 450^0 F, exhausting at one (1) stack identified as CSUP-S_1;

(b) One (1) natural gas fired boiler with low NOx burner and flue gas recirculation system identified as CSUP-2, maximum capacity rated at 98.6 million British thermal units per hour fired with natural gas, rated at 93.9 million British thermal units per hour fired with No. 2 distillate fuel oil, maximum capacity rated at 80,000 lbs saturated steam per hour at 400 psig operating pressure and 400 to 450^0 F, exhausting at one (1) stack identified as CSUP-S_2;

(c) One (1) natural gas fired boiler with low NOx burner and flue gas recirculation system identified as CSUP-3, maximum capacity rated at 98.6 million British thermal units per hour fired with natural gas, rated at 93.9 million British thermal units per hour fired with No. 2 distillate fuel oil, maximum capacity rated at 80,000 lbs saturated steam per hour at 400 psig operating pressure and 400 to 450^0 F, exhausting at one (1) stack identified as CSUP-S_3;

(d) One (1) diesel fuel oil fired emergency electric generator identified as CSUP-4, rated at 7.20 million British thermal units (mmBtu/hr) or capable of maximum 750 KW output, exhausting at one (1) stack identified as CSUP-S_4;

(e) One (1) fixed roof tank with a maximum design capacity of 10,000 gallons identified as CSUP-F1, will be used to store petroleum products with a maximum vapor pressure of 0.009 psia at 68^0 F.

Emission Limitations and Standards [326 IAC 12] [40 CFR 60.42c] [40 CFR 60.43c] [326 IAC 2-1-5]

D.1.1 Sulfur Dioxide (SO_2) [326 IAC 7-1.1-1] [326 IAC 12] [40 CFR 60.42c][326 IAC 2-1-5]

Pursuant to 326 IAC 2-1-5 (State Construction and Operating Permits: Emission Limitations):

(a) The SO_2 emissions from the 93.9 mm Btu per hour oil-fueled boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall not exceed five tenths (0.5) pounds per million Btu heat input; or

(b) The sulfur content of the fuel oil at Boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall not exceed five-tenths percent (0.5%) by weight.

(c) The SO_2 emission limits, fuel oil sulfur content limits, apply at all times, including periods of startup, shutdown, and malfunction.

Subsection (a), (b) and (c) will satisfy the requirements of 326 IAC 7-1.1-1 and 326 IAC 12, 40 CFR 60.42c.

D.1.2 Opacity Limitations (when burning No. 2 distillate fuel oil) [326 IAC 12] [40 CFR 60.43c(c) & (d)]

(a) The owner or operator of the boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall not cause to be discharged into atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(b) Opacity limits in (a) apply at all times of No. 2 distillate oil firing, except during periods of start-up, shut down and malfunction.

D.1.3 Particulate Matter Limitation [326 IAC 6-2-4]

The particulate matter (PM) emissions from three (3) boilers rated at 98.6 MMBTU/hr burning natural gas or rated 93.9 mmBtu/hr burning NO. 2 distillate fuel oil identified as CSUP-1, CSUP-2 and CSUP-3 using natural gas or No.2 fuel distillate oil shall be limited to 0.22 pounds per MMBTU heat input.

D.1.4 PSD Minor Limit [326 IAC 2-2][40 CFR 52.21]

(a) NOx emissions from the 98.6 MMBTU/hr boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall be limited to 0.08 pounds per MMBTU (lb./mmBtu) while burning natural gas only and;

(b) NOx emissions from the 93.9 MMBTU/hr boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall be limited to 0.08 pounds per MMBTU (lb./mmBtu) while burning No. 2 distillate fuel oil only and;

(c) The input diesel fuel oil of the electrical generator identified as CSUP-4 shall be limited to 25,643 gallons per year, rolled on a monthly basis. This production limitation is equivalent to NO_X emissions of 4.4 tons per year, rolled on a monthly basis.

(d) One (1) natural gas fired boiler # 7 identified as No. 6-5 (CP-163-8495-00015) shall not be constructed and operated at the source;

(e) the following schedule of the removal of the existing boilers; and startup of the proposed new boilers and an electrical generator shall take place:

(i) Three (3) coal-fired boilers (ID. No. 3, 4 and 5), One (1)natural gas fired boiler (ID. No. 6) and boiler auxiliaries shall be permanently removed from the service, after the proposed boilers (ID. CSUP-1, CSUP-2 and CSUP-3) become fully operational.

(ii) The source shall be allowed a transitional period for the installation of the three new boilers identified as CSUP-1, CSUP-2 and CSUP-3. This period will allow for the operation of the new boilers (CSUP-1, 2 and 3) and the old boilers (3,4, 5 and 6) during the checkout period. The operation of the old boilers (ID. No. 3, 4, 5 and 6) will be such that the summation of the capacity used on the old boilers (ID. No. 3, 4, 5 and 6) plus the capacity used on the new boilers (CSUP-1, 2 and 3) will not exceed the total capacity of the new boilers (CSUP-1, 2 and 3), during this transitional period.

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

and

EVANSVILLE EPA

Quarterly Report

Source Name: Mead Johnson & Company
Source Address: 2400 West Lloyd Expressway, Evansville, Indiana 47721
Mailing Address: 2400 West Lloyd Expressway, Evansville, Indiana 47721
Construction Permit No.: 163-9713-00015
Facility: Electrical Generator (CSUP-4)
Parameter: NOx Emissions
Limit: 25,643 gallons diesel fuels/ year, rolled on a monthly basis.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

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

Technical Support Document (TSD) for Permit Modification

Source Background and Description

Source Name:	Mead Johnson & Company
Source Location:	2400 West Lloyd Expressway, Evansville, Indiana 47721
County:	Vanderburgh
Construction Permit No.:	CP-163-10280-00015
SIC Code:	2834, 2099
Permit Reviewer:	Janusz Johnson

The Office of Air Management (OAM) has reviewed an application from Mead Johnson & Company relating to a change in the designed firing rates of the boilers Nos. 8, 9, and 10 (designated emission units CSUP-1, 2, and 3) and a decrease in output capacity of the emergency electric generator (designated emission unit CSUP-4). The changes to the boilers are due to an increased steam operating pressure requirement and will increase the maximum heat input rating of each boiler from 97.9 million Btu per hour (MMBtu/hr) when firing natural gas and 93.4 MMBtu/hr when firing No. 2 fuel oil to 98.6 MMBtu/hr and 93.9 MMBtu/hr, respectively. The emergency electric generator has been reduced in size from a 1,600 kW output capacity to a 750 kW capacity.

Stack Summary

There are no new emission points associated with these changes.

Recommendation

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

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

A complete application for the purposes of this review was received on October 26, 1998.

Emissions Calculations

The calculations for the three (3) boilers have been revised as Appendix A and the emergency electric generator calculations have been revised as Appendix B. See these Appendices (Emissions Calculation Spreadsheets) for detailed calculations (3 pages).

Total Potential and Allowable Emissions

There is no significant change to the Potential and Allowable Emissions associated with the original project as a result of the revised emission unit sizes. The revised Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity) based on the new equipment is as follows:

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	24.0	17.8
Particulate Matter (PM_{10})	14.0	10.0
Sulfur Dioxide (SO_2)	376.0	376.0
Volatile Organic Compounds (VOC)	7.3	7.3
Carbon Monoxide (CO)	111.0	109.6
Nitrogen Oxides (NO_X)	108.0	108.0
Single Hazardous Air Pollutant (HAP)	0.0	0.0
Combination of HAPs	0.0	0.0

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable) has changed based on the revisions of the emission units. The following is the revised netting for the project:

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO_2 (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO_X (ton/yr)
Proposed Modification	17.8	10.0	376.0	7.3	109.6	108.0
Contemporaneous Increases	----	----	0.03	----	2.60	4.30
Contemporaneous Decreases	----	-----	- 613.90	----	- 64.80	- 82.0
Net Emissions	17.8	10.0	- 237.9	7.3	47.4	30.3
PSD or Offset Significant Level	25	15	40	40	100	40

(a) The Contemporaneous decreases were calculated in the Appendix F of the original permit, CP-163-9713-00015. A copy of this breakdown is included as Appendix C of this TSD.

(b) Based on the changes made to the boilers and emergency generator, this modification to an existing major stationary source is not major because the emissions increases are less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T-163-7142-00015) application on November 12, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Federal Rule Applicability

There is no change to the applicability of 40 CFR Part 60.40c through 60.48c, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units as a result of the changes to the boiler Nos. 8, 9, and 10.

State Rule Applicability

326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating)
The natural gas fired boilers (Unit ID No. 8, 9 and 10) are subject 326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating). Because the maximum heat input capacities of the boilers have changed, the particulate matter (PM) emissions limitations for these boilers must be recalculated. Pursuant to 326 IAC 6-2-4, the particulate matter (PM) emissions from each boiler shall be limited to 0.22 pounds per million BTU heat input (see page 2 of the revised Appendix A calculations). The slight change in maximum heat input rate for the boilers has not affected the limited level of emissions determined from the applicability of 326 IAC 6-2-4.

Allowable PM emissions = (0.22 lb./MMBTU)*(97.9 MMBTU/hr)*(8760 hr/yr)*(1 ton/2000 lbs) = 94.30 tons/year

Based on this calculation, the limited potential emissions (0.01 lb PM/MMBTU) are less than the allowable emissions, therefore, this boiler complies with the rule.

Air Toxic Emissions

There is no change in the air toxic emissions associated with the changes to the boilers or emergency generator.

Conclusion

The modification of the emission units of the central steam utility plant (CSUP) will be subject to the conditions of the attached proposed **Permit Modification No. CP-163-10280-00015.**

Appendix A: Potential Emissions Calculations
Natural Gas & Fuel Oil No. 2 Combustion Only
10 < MM BTU/HR <100
Small Industrial Boiler

Boilers #8, 9, & 10 (CUSP1,2,&3), EACH
[EMISSIONS SHOWN ARE FOR ONLY ONE OF THE BOILERS AND SHOULD BE MULTIPLIED BY 3 TO REPRESENT TOTAL EMISSIONS]

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-10280
Plt ID: 163-00015
Reviewer: Janusz Johnson
Date: December 18, 1998

Heat Input Capacity MMBtu/hr with n.g.	Heat Input Capacity MMBtu/hr with no. 2 oil	Potential Throughput MMCF/yr	Potential Throughput kgals/year	S = Weight % Sulfur
98.6	93.9	863.7	5875.5	0.3

Heat Input Capacity includes:
one (1) boiler capable of burning natural gas or No. 2 distillate fuel oil.

	Pollutant					
	PM	PM10	SO2	NOx*	VOC	CO
Emission Factor in lb/MMCF (natural gas combustion)	7.6	7.6	0.6		5.5	84.0
Emission Factor in lb/kgal (No. 2 fuel oil combustion)	2.0	1.0	142S		0.2	5.0
Emission Factor in lb/MMBtu (low NOx burners)				0.08		
Potential Emissions burning natural gas, tons/yr	3.3	3.3	0.3	34.5	2.4	36.3
Potential Emissions burning No. 2 fuel oil, tons/yr	5.9	2.9	125.1	32.9	0.6	14.7
Worst Case Potential Emissions, tons/yr	**5.9**	**3.3**	**125.1**	**34.5**	**2.4**	**36.3**

Note:
* NOx emission factor based on manufacturer's guarantee of 0.08 lb/MMbtu for low NOx burner.

Methodology:
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors for CO from natural gas combustion: Uncontrolled =845, Low NOx Burner = 84, Flue gas recirculation = 84
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors for natural gas combustion are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02 (02/1998 update)
Emissions from natural gas combustion (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu
Emission Factors for No. 2 fuel oil combustion are from AP 42, Tables 1.3-2 and 1.3-4 (SCC 1-02-005-01/02/03)
Emissions from No. 2 fuel oil combustion (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

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

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-10280
Plt ID: 163-00015
Reviewer: Janusz Johnson
Date: December 18, 1998

Heat Input Capacity MMBtu/hr	Heat Input Capacity MMBtu/hr with no. 2oil	Limited Throughput MMCF/yr	Limited Throughput kgals/year	S = Weight % Sulfur
98.6	93.9	863.7	5875.5	0.3

Heat Input Capacity includes:
one (1) boiler capable of burning natural gas or No. 2 distillate fuel oil.

	Pollutant					
	PM	PM10	SO2	NOx*	VOC	CO
Emission Factor in lb/MMCF (natural gas combustion)	7.6	7.6	0.6		5.5	84.0
Emission Factor in lb/kgal (No. 2 fuel oil combustion)	2.0	1.0	142S		0.2	5.0
Emission Factor in lb/MMBtu (low NOx burners)				0.08		
Emissions burning natural gas, tons/yr	3.3	3.3	0.3	34.5	2.4	36.3
Limited Emissions burning No. 2 fuel oil, tons/yr	5.9	2.9	125.1	0.0	0.6	14.7
Worst Case Emissions, tons/yr	**5.9**	**3.3**	**125.1**	**34.5**	**2.4**	**36.3**

Note:
* NOx emission factor based on manufacturer's guarantee of 0.08 lb/MMbtu for low NOx burner.
The No. 2 fuel oil usage is not limited. SO2 emissions are based on the fuel oil sulfur oil content of 0.30% by weight.
Natural gas usage is not limited.

Methodology:
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors for CO from natural gas combustion: Uncontrolled =84, Low NOx Burner = 84, Flue gas recirculation = 84
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors for natural gas combustion are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02 (2/1998 Update).
Emissions from natural gas combustion (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu
Emission Factors for No. 2 fuel oil combustion are from AP 42, Tables 1.3-2 and 1.3-4 (SCC 1-02-005-01/02/03)
Emissions from No. 2 fuel oil combustion (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

Compliance with 326 IAC 6-2-4

The following calculation determines the allowable PM emission limit pursuant to 326 IAC 6-2-4:

Pt = 1.09 / Q^0.26, where: Pt = allowable emission limit expressed as lb /MMBtu
Q = total source maximum heat input rate as MMBtu/hr (295.8 MMBtu/hr for boilers #8 through #10 and 80.5 the basement boiler (#6) and 95 MMBtu/hr for proposed boiler #7)

Pt = 1.09 / (471.3)^0.26 = 0.22 lb PM / MMBtu **(allowable)**
= 21.69 lb PM / hour (equivalent allowable emissions)
= 95.00 ton PM / year (equivalent allowable emissions)

The following calculation demonstrates compliance with the allowable PM emission limit pursuant to 326 IAC 6-2-4:

Potential Limited PM emission rate = 6.0 tons/yr / 4.38 lb/hr / tons/yr / 97.9 MMBtu/hr
= 0.01 lb PM / MMBtu **(will comply)**

Compliance with 326 IAC 7-1.1-2

The following calculations determine the maximum sulfur content of #2 distillate fuel allowed by 326 IAC 7-1-.1-2:

0.5 lb/MMBtu x 140,000 Btu/gal = 70 lb/1000 gal
70 lb/1000 gal/ 142 lb/1000 gal = 0.49 %

Sulfur content must be less than or equal to 0.49 % to comply with 326 IAC 7-1.1-2.
Facility will comply with 326 IAC 7-1.1-2 by using fuel oil with a limited 0.30% sulfur content.

Appendix B: Emission Calculations
Diesel fuel oil fired combustion
1,109 BHP output, 7.18 mmBtu/hr Heat input
Emmergency Generator (ID# CSUP-4)

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-10280
Plt ID: 163-00015
Reviewer: Janusz Johnson
Date: December 18, 1998

Limited emissions based on 500 hours per year of operation equivalent to 25,643 gallons of fuel per year.

Heat Input Capaci MMBtu/hr	Output BHP
7.2	1109.0

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/hr	0.5	0.4	2.2	17.5	0.7	3.2
Potential Emission in tons/yr	0.1	0.1	0.5	4.4	0.2	0.8

Methodology
Emission Factors are provided by the source based on the Manufacturer design specifications.
Emission Factors are in lbs. per hour
Potential Emissions are based on the 500 hours per year of operation of the process.
Potential Emissions =(e.f. in lb./hr) * (500 hrs/year) * (1 ton / 2000 lbs.)

Appendix C: Emissions Calculations

Source Name: Mead Johnson & Company
Source Location: 2400 West Lloyd Expressway, Evansville, Indiana 47721
County: Vanderburgh
Permit Modification No.: CP-163-10280
SIC Code: 2834, 2099
Permit Reviewer: Janusz Johnson

(a) Contemporaneous Increases:

Facility	Emissions in tons per year						Comments
	PM	PM_{10}	SO_2	NO_x	CO	VOC	
Boiler # 6	0.30	0.30	0.03	4.30	2.60	0.12	Potential to emit (PTE)
Boiler # 7	5.80	5.80	36.0	33.30	25.40	1.20	CP# 163-8495-00015, issued 1997. Allowable emissions are equal to the potential emissions.
Total	0.27	0.27	0.03	4.30	2.60	0.12	

(b) Contemporaneous Decreases:

Facility	Emissions in tons per year						Comments
	PM	PM_{10}	SO_2	NO_x	CO	VOC	
Boilers 3, 4, 5	- 73.0	- 41.0	- 613.90	- 77.70	- 62.20	- 0.52	Emission reductions represent the average of actual emissions in 1996 & 1997.
Boiler Auxiliaries*	- 0.70	- 0.20	0	0	0	0	Emission reductions represent the average of actual emissions in 1996 & 1997.
Boiler # 6	- 0.30	- 0.30	- 0.03	- 4.30	- 2.60	- 0.12	
Total	- 74.0	- 41.50	- 613.93	- 82.0	- 64.80	- 0.64	

* - Ash, coal storage and handling operations are considered as boiler auxiliaries.

(c) According to the definition of net emission increase, a source can use actual emission data from existing units and credit all or a portion of the average emissions to a new facility in order to keep the net emission increase for the plant below levels constituting a major modification under PSD. Four (4) Boilers identified as (ID#. # 3, 4, 5 and 6) and other associated processes (coal auxiliaries) will be removed from service upon construction and operation of the new three (3) natural gas fired boilers (ID#. # 8, 9 and 10). The contemporaneous increases do not include the emissions from the proposed boiler (ID. # 7) because the prior permit (CP-163-8495-00015) will be voided with this modification. Therefore, the NOx, CO and SO_2 emissions will not be counted toward the contemporaneous increases.

(d) Construction Permit for a boiler # 6 was issued on October 29, 1992 and the boiler became in operation in November 11, 1993. Therefore, maximum NO_X emissions during the last five years (July 93 to July 98) are considered as potential to emit for boiler # 6.