

**NOTICE OF 30-DAY PERIOD
FOR PUBLIC COMMENT**

Proposed Approval of a Federal Enforceable State Operating Permit
**Significant Permit Modification
and Enhanced New Source Review**

for **Mead Johnson & Company**
in Posey County

**FESOP No.: F129-5036-00021
SMF129-8570**

Notice is hereby given that the above-mentioned company, located at State Highway 62 East, Mt. Vernon, Indiana 47620 has made application to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) for Enhanced New Source Review and for a Significant Permit Modification to its Federally Enforceable State Operating Permit (FESOP) that was issued on December 11, 1996, for the addition of a 31.5 million British thermal units per hour heat input natural gas/No. 2 distillate oil fired boiler. Based on 8,760 hours of operation per year, the sulfur dioxide and nitrogen oxides allowable emissions before control are 69.0 and 20.0 tons per year, respectively. Under the modified FESOP the limited allowable emissions of sulfur dioxide will increase from the current FESOP limit of 90.2 to 90.4 tons per year, and limited allowable emissions of nitrogen oxides will not change from the current FESOP limit of 98.9 tons per year.

Notice is hereby given that there will be a period of thirty (30) days from the date of publication of this notice during which any interested person may comment on why this proposed permit should or should not be issued. Appropriate comments should be related to any air quality issues, interpretation of the state and federal rules, calculations made, technical issues, or the effect that the operation of this source would have on any aggrieved individuals.

A copy of the proposed permit modification is available for examination at the Alexandrian Public Library, 115 W. 5th Street, Mt. Vernon, Indiana 47620-1869. All statements, along with supporting documentation, should be submitted in writing to the IDEM, OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015. If adverse comments concerning the air pollution impact of this proposed source are received, together with a request for a public hearing, such a hearing may be held to give further consideration to this application.

Persons not wishing to comment at this time, but wishing to receive notice of future proceedings conducted related to this action, must submit a written request to the OAM, at the above address. All interested parties of record will receive a notice of the decision on this matter and will then have fifteen (15) days after receipt of the Notice of Decision to file a petition for administrative review. Procedures for filing such a petition will be enclosed with the Notice.

Questions should be directed to Michael Hirtler, c/o OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or by phone at 973-575-2555 extension 3229 or 1-800-451-6027.

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

EVP/MH

**FEDERALLY ENFORCEABLE STATE
OPERATING PERMIT (FESOP)
and ENHANCED NEW SOURCE REVIEW
OFFICE OF AIR MANAGEMENT**

**Mead Johnson & Company
St. Highway 62 East
Mt. Vernon, Indiana 47620**

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 and contains the conditions and provisions specified in 326 IAC 2-8 and 40 CFR Part 70.6 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments) and IC 13-15 and IC 13-17 (prior to July 1, 1996, IC 13-1-1-4 and IC 13-7-10).

Operation Permit No.: F129-5036-00021	
Original issued by Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date: December 11, 1996
First Minor Permit Modification: SMF129-8570	Pages Affected: 3, 4, 5, 16, 17, 22, 23, 26a-26d, 30, 31a
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

TABLE OF CONTENTS		
Section	Description	Page No.
C	SOURCE OPERATION CONDITIONS	17
D.1	FACILITY OPERATION CONDITIONS	22
	Two (2) natural gas fired boilers (No. 2 fuel oil as alternative)	
D.2	FACILITY OPERATION CONDITIONS	24
	Two (2) diesel fueled generators	
D.3	FACILITY OPERATION CONDITIONS	25
	One (1) incinerator	
D.4	FACILITY OPERATION CONDITIONS	26a
	One (1) natural gas fired boiler (No. 2 fuel oil as alternative)	
	FORMS	
	Certification Form	27
	Deviation Form	28
	Reporting Forms	29,30,31,31a
	Total Number of Permit Pages	31
	Total Number of Forms	6
	Technical Support Document	10
	Emissions Calculations	10
	Technical Support Document for First Significant Permit Modification	9
	Emissions Calculations for First Significant Permit Modification	5

SECTION A SOURCE SUMMARY

A.1 General Information

The Permittee owns and operates a pharmaceutical packaging and research and development company.

Responsible Official: John Wellemeyer
Source Address: State Highway 62 East, Mt. Vernon, Indiana, 47620
Mailing Address: 2400 West Lloyd Expressway, Evansville, Indiana 47721
SIC Code: 2834
County Location: Posey County
County Status: Attainment for all criteria pollutants
Source Status: Federally Enforceable State Operating Permit (FESOP)

A.2 Emission Units and Pollution Control Summary

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

- (1) Two (2) natural gas fired boilers, with the capability of using No. 2 fuel oil as an alternative fuel source. These boilers have a maximum capacity of 30.64 million British thermal units each and are identified as S-1 and S-2. They do not possess pollution control devices. They exhaust to stacks corresponding to the same identification, S-1 and S-2.
- (2) Two (2) diesel fuel generators. Generator S-3 has a heat output of 1300 kW, a heat input capacity of 4.4 million British thermal units per hour and has no air pollution control equipment. Generator S-7 has a heat output of 280 hp, a heat input of 0.7 million British thermal units per hour and has no air pollution control equipment. The generators exhaust to stacks corresponding to the same identification, S-3 and S-7.
- (3) One (1) natural gas incinerator, 1.0 million British thermal units, with a maximum capacity of 250 pounds per hour. This emissions unit is identified as S-4. This incinerator emits Hazardous Air Pollutants (HAPs). It does not possess air pollution control equipment. The incinerator exhausts to a stack identified as S-4.
- (4) One (1) natural gas fired boiler, with the capability of firing No. 2 distillate oil as an alternative fuel. The boiler is identified as emission unit S-8 and it has a maximum heat input rate of 31.5 million (MM) British thermal units (Btu) per hour. The boiler does not possess a pollution control device, and it exhausts to one (1) stack identified as S-8.

A.3 Insignificant Activities

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(20):

- (1) Two (2) 20,000 gallon underground storage tanks containing No. 2 fuel oil.
- (2) One (1) 1,130 gallon aboveground storage tank containing gasoline.
- (3) One (1) 1,130 gallon aboveground storage tank containing diesel fuel.
- (4) One (1) 300 gallon aboveground storage tank containing diesel fuel.
- (5) One (1) 250 gallon aboveground storage tank containing diesel fuel.
- (6) Cold solvent cleaning station (2 square feet)
- (7) Cold solvent cleaning station (3.75 square feet)

- (8) Light vehicle traffic on paved roads
- (9) Powder mixing cabinets
- (10) Pharmaceutical packaging lines with rotoclone
- (11) Research and development operations
- (12) Natural gas fired boiler - 150 hp (exemption received but never placed into operation)

These insignificant activities do not generate nitrogen oxide (NOx) or hazardous air pollutant emissions (HAPs) and therefore, are not included in the nitrogen oxide and hazardous air pollutant emission limits established in this permit.

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) for a Federally Enforceable State Operating Permit (FESOP).

- (c) The Permittee shall pay the annual fee within thirty (30) calendar days of receipt of a billing by IDEM, OAM or in a time period that is consistent with the payment schedule issued by IDEM, OAM.
- (d) If the Permittee does not receive a bill from IDEM, OAM, thirty (30) calendar days before due date, the Permittee shall call the following telephone numbers: 1-800-451-6027 or 317-233-0179 (ask for OAM, Data Support Section), to determine the appropriate permit fee. The applicable fee is due April 1 of each year.

B.26 Affidavit

That the attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration and Development Section, verifying that boiler S-8 was constructed as proposed in the application. The Permittee shall receive an Operation Validation Letter from the Chief of the Permit Administration and Development Section and attach it to this document.

B.27 Enhanced New Source Review [326 IAC 2]

The requirements of the construction permit rules in 326 IAC 2 are satisfied by this permit for any previously unpermitted facilities and such facilities to be constructed within eighteen (18) months after the date of issuance of this permit, as listed in Sections A.2 and A.3.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emissions Limitations [326 IAC 2-8-4(1)]

C.1 Overall Source Limit [326 IAC 2-8]

Pursuant to 326 IAC 2-8, emissions of any regulated pollutant from the entire source shall not exceed 99 tons per 365 day period. Emissions of hazardous air pollutants (HAP) from the entire source shall not exceed 9 tons per 365 day period for any individual HAP or 24 tons per 365 day period of any combination of HAPs. Emissions shall include those from all emission points at the source including those that are insignificant as defined in 326 IAC 2-7-1(20). The source shall be allowed to add insignificant activities not already listed in this permit, as long as the total emissions from the source do not exceed the above specified limits. In the event that any condition or combination of conditions in Section D of this permit differs from the above, the most restrictive limit will prevail.

C.2 Opacity

Pursuant to 326 IAC 5-1-2 (Visible Emissions Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemption), visible emissions shall meet the following, unless otherwise stated in this permit:

- (a) Visible emissions shall not exceed an average of 40 percent opacity in 24 consecutive readings,
- (b) Visible emissions shall not exceed 60 percent opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

C.3 Open Burning

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

C.4 Fugitive Dust Emissions

The Permittee shall be in violation of 326 IAC 6-4 if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated.

C.5 Operation of Equipment [326 IAC 2-8-5(a)(4)]

- (a) All equipment that potentially might emit pollutants into the ambient air shall be properly operated and maintained.
- (b) Unless otherwise stated in this permit, all air pollution control equipment listed in this permit shall be operated at all times that the emission unit(s) vented to the control equipment is in operation.
- (c) The permittee shall perform all necessary maintenance and make all necessary attempts to keep all air pollution control equipment in proper operating condition at all times.

SECTION D.1

FACILITY OPERATION CONDITIONS

Two (2) natural gas-fired boilers with the capability of using No. 2 fuel oil as a fuel alternative. They each have a maximum capacity of 30.64 million British thermal units of heat input. They are identified as S-1 and S-2 and exhaust to corresponding stacks also identified as S-1 and S-2. They possess no control equipment.

Emissions Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 Particulate Matter (PM)

Pursuant to 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating), the particulate matter emissions from the boilers shall be limited to 0.8 pounds per million British thermal units of heat input. The boilers are in compliance with this rule based on supporting calculations.

D.1.2 Sulfur Dioxide (SO_x)

a) Pursuant to 326 IAC 7-1.1-1 (Sulfur Dioxide Limitations), the sulfur dioxide emissions from the boilers, which are fuel combustion facilities with a potential to emit 25 tons per year or 10 pounds per hour of sulfur dioxide, shall be limited to 0.5 pounds per million British thermal units heat input for distillate oil combustion. The boilers are in compliance with this rule based on supporting calculations.

(b) Pursuant to 326 IAC 2-8 (FESOP), the sulfur content of the No. 2 fuel oil shall not exceed 0.3 percent.

D.1.2a Nitrogen Oxides (NO_x)

Pursuant to 326 IAC 2-8-4, the input of natural gas fuel and natural gas fuel equivalent to the two (2) 30.64 million British thermal units per hour boilers, plus the 31.5 million British thermal units per hour boiler listed under Section D.4, shall be limited as follows:

(a) Total input shall not exceed 45.71 million cubic feet of natural gas on a fixed monthly basis. This limitation is equivalent to total NO_x emissions of 3.2 tons per month.

(b) For the purposes of determining compliance, the natural gas fuel equivalent as No. 2 fuel oil is calculated based on 7,000 gallons of No. 2 fuel oil per per million (1,000,000) cubic feet of natural gas burned.

(c) This fuel usage limitation will satisfy the requirements of 326 IAC 2-8-4. Therefore, the requirements of 326 IAC 2-7 do not apply. This limitation will also satisfy the requirements of 326 IAC 2-2 and 326 IAC 2-3.

D.1.3 Preventive Maintenance [326 IAC 2-8-1(9)]

A Preventive Maintenance Plan, in accordance with Condition B.13 of this permit, is required for this facility.

Compliance Monitoring [326 IAC 2-8-5(a)(1)]

D.1.4 Fuel Oil Sampling and Analysis

Fuel oil samples shall be collected from the fuel tank immediately after the fuel tank is filled and before any fuel oil is combusted. The Permittee shall analyze the fuel oil sample to determine the sulfur content of the fuel oil in accordance with 326 IAC 3-3-4. If a partially empty fuel tank is refilled, a new sample and analysis is required upon filling. Vendor analysis of each load delivered is acceptable, in lieu of the above, if accompanied by a certification.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3) and 326 IAC 7-2-1]

D.1.5 Monthly Reporting

Pursuant to 326 IAC 7-2-1, for the two (2) 30.64 million British thermal units per hour boilers, plus the 31.5 million British thermal units per hour boiler listed under Section D.4, the Permittee shall record on a monthly basis and submit reports quarterly to the address listed in Section C - General Reporting Requirements, the following information:

- 1) The total amount of natural gas and natural gas equivalent used per month;
- 2) The sulfur content of the No. 2 distillate fuel oil;
- 3) The heat content of the fuel;
- 4) Fuel oil supplier certifications containing, as a minimum, the following:
 - a) The name of the oil supplier; and
 - b) A statement from the oil supplier that certifies the sulfur content and heat content of the fuel oil.
- 5) A certification, signed by the owner or operator, that the records of the fuel oil supplier certifications represent all of the fuel combusted during the period;
- 6) The SO₂ emissions in pounds per million Btu for each facility and the total SO₂ emissions in tons per month; and

The Permittee shall record and submit this information using the enclosed form, or its equivalent, within thirty (30) days after the end of the calendar quarter being reported.

SECTION D.4 FACILITY CONDITIONS

One (1) natural gas fired boiler, with the capability of firing No. 2 distillate oil as an alternative fuel. The boiler is identified as emission unit S-8 and it has a maximum heat input rate of 31.5 million (MM) British thermal units (Btu) per hour. The boiler does not possess a pollution control device, and it exhausts to one (1) stack identified as S-8.

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

Construction Conditions [326 IAC 2-1-3.2]

General Construction Conditions

D.4.1 This permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

D.4.2 Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

Effective Date of the Permit

D.4.3 Pursuant to 326 IAC 2-1-9(b) (Revocation of Permits), IDEM, OAM may revoke this section of the approved permit if construction is not commenced within eighteen (18) months after receipt of this permit or if construction is suspended for a continuous period of one (1) year or more.

D.4.4 All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

First Time Operation Permit

D.4.5 This Section of this Permit shall also become the first-time operation permit for the facilities under this section of this permit, pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:

(a) The attached affidavit of construction shall be submitted to:

Indiana Department of Environmental Management
Permit Administration & Development Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

verifying that the facilities were constructed as proposed in the application. The facilities covered in this section of this permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.

(b) If construction is completed in phases; i.e., the entire construction is not done

continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

- (c) The permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this permit.

Operation Conditions

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.4.6 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1] [326 IAC 12-1]

Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations) and 40 CFR 60, Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units):

- (a) The SO₂ emissions from the 31.5 MMBtu per hour boiler shall not exceed five tenths (0.5) pounds per million Btu heat input when firing No. 2 distillate oil; or
- (b) The sulfur content of the fuel oil shall not exceed three-tenths percent (0.3%) by weight when firing No. 2 distillate oil [326 IAC 2-8-4]. This limitation will also satisfy the requirements of 40 CFR 60, Subpart Dc [40 CFR 60.42c(d)].

Pursuant to 40 CFR 60 Subpart Dc, the distillate fuel oil sulfur content limit applies at all times, including periods of startup, shutdown, and malfunction.

D.4.7 Opacity

Pursuant to 40 CFR 60, Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units):

- (a) The opacity from the 31.5 MMBtu per hour boiler exhaust shall not exceed 20 percent as a 6-minute average of 24 consecutive readings as determined by 40 CFR 60.45c; and
- (b) The opacity from the 31.5 MMBtu per hour boiler exhaust shall not exceed 27 percent during one 6-minute period per hour.

Pursuant to 40 CFR 60 Subpart Dc, the opacity limits apply at all times of No. 2 distillate oil firing, except for start-up, shut-down and malfunction periods

D.4.8 Particulate Matter (PM)

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), the particulate matter emissions from the boiler shall be limited to 0.34 pounds per million British thermal units of heat input. The boiler is in compliance with this rule based on supporting calculations.

D.4.9 Nitrogen Oxides (NO_x)

Pursuant to 326 IAC 2-8-4, the input of natural gas fuel and natural gas fuel equivalent to the

31.5 million British thermal units per hour boiler, plus the two (2) 30.64 million British thermal units per hour boilers listed under Section D.1, shall be limited as follows:

- (a) Total input shall not exceed 45.71 million cubic feet of natural gas on a fixed monthly basis. This limitation is equivalent to total NO_x emissions of 3.2 tons per month.
- (b) For the purposes of determining compliance, the natural gas fuel equivalent as No. 2 fuel oil is calculated based on 7,000 gallons of No. 2 fuel oil per per million (1,000,000) cubic feet of natural gas burned.
- (c) This fuel usage limitation will satisfy the requirements of 326 IAC 2-8-4. Therefore, the requirements of 326 IAC 2-7 do not apply. This limitation will also satisfy the requirements of 326 IAC 2-2 and 326 IAC 2-3.

D.4.10 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.4.11 Testing Requirements [326 IAC 2-8-5(1)] [326 IAC 12-1]

Pursuant to 40 CFR 60, Subpart Dc, and 40 CFR 60.8, the Permittee shall demonstrate compliance with Conditions D.4.6 and D.4.7 for No. 2 distillate fuel oil firing as follows:

- (a) Sulfur Dioxide Emissions and Sulfur Content:
The Permittee shall demonstrate initial and continuing compliance utilizing one of the following options:
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a certification; or
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.

A determination of noncompliance pursuant to either of the methods specified in (A) or (B) above shall not be refuted by evidence of compliance pursuant to the other method.

- (b) Opacity:
The Permittee shall demonstrate initial compliance for opacity during No. 2 distillate fuel oil firing at the boiler S-8 exhaust stack. Testing shall be performed in accordance with 326 IAC 3-2.1 using methods acceptable to the Commissioner. The stack test shall be performed within 60 days after achieving maximum firing rate, but no later than 180 days after initial start-up.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.4.12 Daily Visible Emission Notations

Any time boiler S-8 is being fired with No. 2 distillate fuel oil, daily visible emission notations of the boiler's stack exhaust shall be performed during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting startup or shut down time. 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. A trained employee is an employee who has worked at the plant at least one month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-16] [326 IAC 12-1]

D.4.13 Operational Parameters

The Permittee shall maintain daily records at the stationary source of the visible emission observations whenever boiler S-8 is firing No.2 distillate oil fuel.

D.4.14 Record Keeping and Reporting

- (a) To document compliance with Conditions D.4.6 and D.1.2a, the Permittee shall comply with the requirements of Operation Condition D.1.5.
- (b) The Permittee shall retain records of all recorded/monitored data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

D.4.15 Reporting

In addition to the above, the Permittee shall certify on the form provided that natural gas was fired in the boiler at all times during the report period. Alternatively, the Permittee shall report the number of days during which alternate fuel was burned during the report period.

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

FESOP Quarterly Report

Source Name: Mead Johnson & Company
 Source Address: State Highway 62 East, Mt. Vernon, Indiana 47620
 FESOP No.: F129-5036-00021 and SMF-129-8570
 Facility: Natural Gas Fired Boilers S-1, S-2, and S-8
 Parameter: sulfur dioxide (SO₂) and nitrogen oxides (NO_x)
 Limits: 0.5 pounds SO₂ per MMBTU heat input per boiler and No. 2 distillate oil fuel sulfur content of 0.3% (weight); 3.2 tons NO_x per month total
 Usage Limits: (a) Total input of 45.71 million cubic feet natural gas and natural gas equivalent; and
 (b) The natural gas fuel equivalent as No. 2 distillate fuel oil is calculated based on 7,000 gallons of No. 2 fuel oil per per million (MM) cubic feet (cf) of natural gas burned.

Year: _____

Month	Sulfur Content of #2 Oil (%)	Heat Content of #2 Oil (Btu/gallon)	Natural Gas Usage (MMcf/month)	Natural Gas Equivalent Usage (MMcf/month)	Total Fuel Used (MMcf/month)	SO ₂ Emissions (lb/MMBtu)		
						Boiler S-1	Boiler S-2	Boiler S-8

9 No deviation occurred in this month.

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

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

State Form 47738 (5-96)

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

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
NATURAL GAS FIRED BOILER CERTIFICATION**

Source Name: Mead Johnson & Company
Source Address: State Highway 62 East, Mt. Vernon, Indiana 47620
Mailing Address: 2400 West Lloyd Expressway, Evansville, Indiana 47721-0001
FESOP No.: F129-5036-00021

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

Report period

Beginning: _____

Ending: _____

Boiler Affected

Alternate Fuel

Days burning alternate fuel

From

To

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

I certify under penalty of law that at all times, except as otherwise noted above, only natural gas was burned in the indicated boilers during the report period. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for First Significant Permit Modification of the Federally Enforceable State Operating Permit (FESOP) and Enhanced New Source Review (ENSR)

Source Background and Description

Source Name:	Mead Johnson & Company	
Source Location:	State Highway 62 East, Mt. Vernon, Indiana 47620	
County:	Posey	
FESOP No.:	F129-5036-00021	Issued: December 11, 1996
Revision No.:	SMF-129-8570	
SIC Code:	2834	
Permit Reviewer:	Michael Hirtler/EVP	

History

On May 5, 1997, Mead Johnson & Company filed an application with the Office of Air Management (OAM) relating to: a) the construction and operation of a natural gas/No. 2 distillate oil fired boiler rated at 31.5 million (MM) British thermal units (Btu) per hour, and b) a request to make certain changes to the FESOP issued December 11, 1996. The following changes were agreed to as the First Significant Modification to the FESOP for this pharmaceutical packaging and research and development source.

Changes Proposed

- (a) The construction and operation of the following new equipment to be added to the FESOP:
- one (1) natural gas fired boiler, with the capability of firing No. 2 distillate oil as an alternative fuel. The boiler is identified as emission unit S-8 and it has a maximum heat input rate of 31.5 MMBtu per hour. The boiler does not possess a pollution control device, and it exhausts to one (1) stack identified as S-8.
- (b) The following changes to the FESOP:
- (1) *Condition A.2, Page 4 of 31*
Add to the listing of emission units one (1) natural gas/No. 2 distillate oil fired boiler rated at 31.5 MMBtu per hour.
 - (2) *Condition B.27, Page 16 of 31*
Add a new condition to address Enhanced New Source Review (ENSR) as follows:

"The requirements of the construction permit rules in 326 IAC 2 are satisfied by this permit for any facilities to be constructed within eighteen (18) months after the date of issuance of this permit, as listed in Sections A.2."

- (3) *Condition C.2, Page 17 of 31*
Add the following words "unless otherwise stated in this permit" to the end of the second line.
- (4) *Condition D.1.2a, Page 22 of 31*
Add a new condition under **Emission Limitation and Standard** for Nitrogen Dioxide (NO_x) requiring that the combined input of natural gas and natural gas equivalent (as No. 2 fuel oil) to boilers S-1 and S-2, and new boiler S-8 listed at new Section D.4, be limited in total to 45.71 million cubic feet on a fixed monthly basis. This limitation is equivalent to a total of 3.2 tons of NO_x on a fixed monthly basis for the three facilities combined. This condition will maintain the source FESOP emission limits and not make 326 IAC 2-7 (Part 70 Permit Program) applicable to this source.
- (5) *Condition D.1.5, Page 23 of 31*
Revise the condition to include reference to new Section D.4 for boiler S-8 such that:
 - (A) The information recorded on a monthly basis shall be the total for boiler Nos. S-1, S-2 and S-8;
 - (B) The recorded data shall be submitted to the OAM as a single quarterly report for boiler Nos. S-1, S-2 and S-8 combined; and
 - (C) The reported and recorded information is consistent with the requirements for recording and reporting under new Section D.4 for boiler S-8.
- (6) *Section D.4, Page 26a of 31*
Add a new section to include:
 - (A) The General Construction Conditions, First Time Operation Permit Conditions, and Operation Conditions required for new natural gas fired boiler S-8; and
 - (B) Add a new reporting form pertaining to natural gas fired boiler certification.

Recommendation

The staff recommends to the Commissioner that the modification be approved.

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 May 5, 1997.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations (5 pages).

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition for new boiler S-8 only (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	46.3	2
Particulate Matter (PM10)	99	2
Sulfur Dioxide (SO ₂)	69	69
Volatile Organic Compounds (VOC)	99	20
Carbon Monoxide (CO)	99	5
Nitrogen Oxides (NO _x)	99	20
Single Hazardous Air Pollutant (HAP)	9	Negligible
Combination of HAPs	24	Negligible

- (a) Allowable emissions of PM and SO₂ are respectively determined from the applicability of rules 326 IAC 6-2-3 and 326 IAC 7-1.1-1 for the new facility. Allowable emissions of PM10, VOC, CO, NO_x, and HAPs (single and combined) are determined from the applicability of rule 326 IAC 2-8 for the source. See attached spreadsheets for detailed calculations.
- (b) The potential emissions before control are less than or equal to the allowable emissions, therefore, the potential emissions before control are used for the permitting determination.
- (c) Allowable emissions (as defined in the Indiana Rule) of SO₂ are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.
- (d) Pursuant to the IDEM's Policy on Air Toxic Rules, dated December 13, 1995, IDEM will not enforce the provisions of 326 IAC 2-1-1(b)(1)(H), as adopted by the Air Board on March 10, 1994. This means that modification of a major source of HAPs which will increase the allowable emissions of any one (1) HAP by 4 tons per year or any combination of HAPs by 10 tons per year will not be required to obtain a construction permit. The Policy is in effect immediately and will continue to be in effect until the effective date of amendments to Indiana's rule for new and modified sources of HAPs. This Policy may be extended or modified at IDEM's discretion.

However, this First Significant Modification to the FESOP is required because of the requirements of 326 IAC 2-1, Sections 1 and 3.

- (e) This First Significant Modification to the FESOP is being done simultaneously with Enhanced New Source Review such that the modified emission limits under the modified FESOP continue to satisfy the requirements of 326 IAC 2-8, and 326 IAC 2-7 (Part 70 Permit Program) does not apply to this source.

Proposed Modification

PTE from the proposed First Significant Modification to FESOP F129-5036-00021 (based on limited operation per Operation Condition Nos. D.1.3 and D.4.9):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)	Single HAP (ton/yr)	Combo HAPs (ton/yr)
Proposed Modification (Boiler S-8)	2.0	2.0	42.6	20.0	0.2	5.0	Negl.	Negl.
Existing FESOP Limits (F129-5036-00021, issued on December 11, 1996)	11.5	11.5	90.2	6.1	35.8	98.9	9.0	9.1
Total Limited PTE for Boilers S-1 & S-2 Under FESOP F129- 5036-00021	3.8	3.8	81.6	0.8	9.6	38.4	Negl.	Negl.
Total Limited PTE for Boilers S-1, S-2 & S-8 Under Modified FESOP SMF071-8570	3.8	3.8	81.8	0.8	9.6	38.4	Negl.	Negl.
Revised FESOP Limits	11.5	11.5	90.4	6.1	35.8	98.9	9.0	9.1
Title V Significant Levels	99	99	99	99	99	99	9	24
Note: This source will be able to keep its FESOP status.								

This First Significant Modification to the stationary source FESOP will **not** change the status of the stationary source because the emissions increase is still less than the FESOP significant levels. Therefore, the following requirements will not apply:

- (a) PSD, 326 IAC 2-2, and 40 CFR 52.21,
- (b) Emission Offset, 326 IAC 2-3, and
- (c) Part 70 Permit Program, 326 IAC 2-7.

Attached Table A summarizes the modified permit conditions and requirements.

Federal Rule Applicability

The following Federal Rule changes have been added to this source as a result of the First Significant Modification to the FESOP :

40 CFR Part 60, Subpart Dc

Natural gas fired boiler S-8 is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.40c through 60.48c, Subpart Dc). This rule requires:

- (a) SO₂ emissions be limited to 0.5 pounds per MMBtu of heat input during distillate oil firing or distillate oil sulfur content be limited to 0.5 percent by weight at all times including periods of start-up, shut-down and malfunction. The boiler is in compliance with this limitation based on supporting calculations (see Appendix A for supporting calculations);
- (b) opacity be limited to 20 percent as a 6-minute average, except for one 6-minute period per hour limited to 27 percent opacity, and except for start-up, shut-down and malfunction periods;
- (c) initial compliance testing for opacity and SO₂ when firing No. 2 distillate fuel oil;
- (d) SO₂ emissions monitoring, unless the affected facility is subject to the SO₂ emissions standard of §60.42c(h) (1), (2), or (3); and
- (e) record keeping and reporting as required by Subpart Dc, including quarterly reporting of fuel supplier certification information, fuel oil sulfur content by weight, and the calculated sulfur dioxide emission rate.

There are no NESHAPs (40 CFR Part 63) applicable to this facility.

State Rule Applicability

The following State Rule changes have been added to this source as a result of the First Significant Modification to the FESOP :

326 IAC 2-8-4 (FESOP)

Pursuant to this rule, the combined input of natural gas and natural gas equivalent (as No.2 distillate fuel oil) to the new 31.5 MMBtu per hour boiler S-8 and the two (2) existing 30.64 MMBtu per hour boilers S-1 and S-2 shall be limited in total to 45.71 million cubic feet on a fixed monthly basis. Also, the sulfur content of input No. 2 distillate fuel oil to boilers S-1, S-2 and S-8 shall not exceed 0.3 percent by weight. The fuel input limitation is equivalent to limiting and maintaining current total facility NO_x emissions at 38.4 tons per year and source NO_x emissions at 98.9 tons per year. The fuel input limitation coincidentally limits total facility SO₂ emissions to 81.8 tons per year, and source SO₂ emissions to 90.4 tons per year. The modified emission limits under the FESOP continue to satisfy the requirements of 326 IAC 2-8 and 326 IAC 2-7 (Part 70 Permit Program) does not apply to this source. The fuel usage limitations also satisfy the requirements of 326 IAC 2-2 and 326 IAC 2-3. See Appendix A for supporting calculations (five pages).

For compliance purposes with 326 IAC 2-8, the No. 2 distillate fuel oil has an assumed heating value of 138,000 Btu per gallon, and the natural gas equivalent is calculated based on 7,000 gallons of No. 2 distillate fuel oil burned per million cubic feet of natural gas burned.

326 IAC 5-1-2 (Opacity Regulations - Visible Emission Limitations)

This rule applies to visible emissions from a source or facility located in either attainment or nonattainment counties, except for those facilities otherwise regulated by a specific visible emissions limitation established in 326 IAC 11, 326 IAC 12, or 326 IAC 6. Since a specific visible emission limit has been established for this facility in 326 IAC 12, (40 CFR Part 60, Subpart Dc) during periods of distillate oil firing, the requirements of 326 IAC 5-1-2 do not apply when the facility is firing distillate oil. However, during periods of natural gas firing, the facility shall meet the following visible emission limitations pursuant to 326 IAC 5-1-2 (1):

- (a) visible emissions shall not exceed an average of forty percent (40%) opacity in twenty-four (24) consecutive readings; and
- (b) visible emissions shall not exceed sixty percent (60%) opacity for more than a cumulative total of fifteen (15) minutes in a six hour period.

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

The 31.5 MMBTU per hour natural gas fired boiler is subject 326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating). Pursuant to 326 IAC 6-2-4, the particulate matter (PM) emissions shall be limited to 0.34 pounds per million BTU heat input.

$$\text{Allowable PM emissions} = (0.34 \text{ lb/MMBTU}) * (31.5 \text{ MMBTU/hr}) * (8760 \text{ hr/yr}) * (1 \text{ ton}/2000 \text{ lbs}) = 46.91 \text{ tons/year}$$

Based on this calculation, limited potential emissions for the facility (0.01 pounds PM per MMBtu) are less than the allowable emissions; therefore, this boiler complies with the rule (see Appendix A for detailed calculations).

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The sulfur dioxide emissions from the 31.5 MMBtu per hour boiler S-8, when No. 2 distillate fuel oil is used, shall be limited to 0.5 pounds per MMBtu heat input. This equates to an allowable distillate fuel oil sulfur content limit of 0.49%. Therefore, the sulfur content of the distillate fuel must be less than or equal to 0.49% in order to comply with this rule (See Appendix A for detailed calculations). The facility will comply with this rule by limiting distillate oil sulfur content to 0.3% or less.

326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements)

This source is subject to 326 IAC 7-2-1 (Reporting Requirements) for the 31.5 MMBtu per hour boiler S-8. This rule requires the source to submit to the Office of Air Management upon request records of sulfur content, heat content, fuel consumption, and sulfur dioxide emission rates for the based on a calendar-month average. The source will comply with the reporting requirements of 326 IAC 7-2-1 for boiler S-8 by submitting on a calendar quarter basis the parameters recorded pursuant to this rule. These reporting requirements will be combined with similar existing requirements for boilers S-1 and S-2 to avoid duplicate reporting.

Compliance Monitoring

1. The 31.5 MMBtu per hour natural gas fired boiler identified as S-8, which has No.2 distillate oil back-up fuel firing capability, has applicable monitoring conditions as follows:
 - a) In conjunction with the two (2) existing 30.64 MMBtu per hour boilers identified as S-1 and S-2, the total consumption of natural gas and natural gas equivalent as No. 2 distillate oil, based on a maximum sulfur content of 0.3% (weight) in the oil, shall be 45.71 million cubic feet on a fixed monthly basis. For the purpose of compliance with 326 IAC 2-8-4, the natural gas equivalent is calculated based on 7,000 gallons of No. 2 fuel oil burned per million cubic feet of natural gas burned.
 - b) Perform initial compliance test for opacity during No. 2 distillate fuel oil firing at the boiler S-8 exhaust stack. Testing shall be performed in accordance with 326 IAC 3-2.1 using methods acceptable to the Commissioner. The stack test shall be performed within 60 days after achieving maximum firing rate, but no later than 180 days after initial start-up.
 - c) Daily visible emissions observations of boiler S-8 exhaust when firing No. 2 distillate fuel oil shall be performed by a trained employee, i.e., an employee who has worked at the plant at least one month and has been trained in the appearance and characteristics of normal visible emissions. The employee will record whether the emissions are normal or abnormal, and if the reading is abnormal, corrective action shall be taken in accordance with the Preventive Maintenance Plan.
 - d) The following information shall be recorded on a monthly basis, and quarterly reports shall be submitted to the OAM Compliance Section, for boiler S-8 and the two (2) existing 30.64 MMBtu per hour boilers identified as S-1 and S-2:
 - 1) The total amount of natural gas and natural gas equivalent used per month;
 - 2) The sulfur content of the No. 2 distillate fuel oil;
 - 3) The heat content of the fuel;
 - 4) Fuel oil supplier certifications containing, as a minimum, the following:
 - A) The name of the oil supplier; and
 - B) A statement from the oil supplier that certifies the sulfur content and heat content of the fuel oil.
 - 5) A certification, signed by the owner or operator, that the records of the fuel oil supplier certifications represent all of the fuel combusted during the period; and
 - 6) The SO₂ emissions in pounds per million Btu for boiler Nos. S-1, S-2 and S-8.

These monitoring conditions are necessary because sulfur dioxide and nitrogen oxide emissions from the combustion of fuels must each be limited to below the Title V major source level of 100 tons per year; the facility must comply with 40 CFR Part 60.40c through 60.48c--Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units; the facility must comply with the fuel sulfur content limits of 326 IAC 7-1.1 and the reporting requirements of 326 IAC 7-2-1; and the source must demonstrate compliance with the FESOP limits established in 326 IAC 2-8-4.

Air Toxic Emissions

There are no changes in the air toxic emissions due to this modification.

Conclusion

The modification of this pharmaceutical packaging and research and development source will be subject to the conditions of the attached proposed **FESOP Significant Modification Permit No. SMF-129-8570-00021**.

Table A

Stack/Vent ID:	S-8			
Stack/Vent Dimensions:	Ht: 36 ft. Dia: 2.5 ft. Temp: 300 F Flow: 9000 acfm			
Emission Unit:	S-8 natural gas boiler			
Date of Construction:	1997			
Alternative Scenario:	No. 2 fuel oil			
Pollution Control Equipment:	none			
General Description of Requirement:	Particulate Matter	SO2	NOx	opacity
Numerical Emission Limit:	0.34 pounds of PM/MMBtu heat input	0.5 pounds of SO2/million Btu of heat input; 0.3% sulfur content by weight	3.2 tons per month*	20% (No. 2 oil), 40% (natural gas)
Regulation/Citation:	326 IAC 6-2-3	326 IAC 2-8-4, 7-1 & 7-2; 40 CFR Part 60, Subpart Dc	326 IAC 2-8-4	40 CFR Part 60, Subpart Dc
Compliance Demonstration:	NA	NA	NA	NA
PERFORMANCE TESTING				
Parameter/Pollutant to be Tested:	NA	sulfur content	NA	opacity
Testing Method/Analysis:		40 CFR Part 60, Appendix A, Method 19		40 CFR Part 60, Appendix A, Method 9
Testing Frequency/Schedule:		each fuel delivery		initial compliance test
Submittal of Test Results:		quarterly		45 days after testing
COMPLIANCE MONITORING				
Monitoring Description:	NA	records and reports	records and reports	visible emissions, when firing No. 2 oil
Monitoring Method:		vendor certification	vendor certification	trained employee
Monitoring Regulation/Citation:		326 IAC 3-3-4	326 IAC 3-3-4	326 IAC 2-8-5
Monitoring Frequency:		monthly	monthly	daily, when firing No. 2 oil
RECORD KEEPING				
Parameter/Pollutant to be Recorded:	NA	SO2	NOx	visible emissions, when firing No. 2 oil
Recording Frequency:		monthly	monthly	daily, when firing No. 2 oil
Submittal Schedule of Reports:		quarterly	quarterly	upon request
REPORTING REQUIREMENTS				
Information in Report:	NA	Fuel use, Sulfur content, Heat content, SO2 emissions	Fuel use, Heat content, NOx emissions	NA
Reporting Frequency/Submittal:		quarterly	quarterly	45 days after initial compliance test
Additional Comments:				

* Reflects combined limited emissions for boiler S-8, and boilers S-1 and S-2, based on the total consumption of natural gas and natural gas equivalent limited to 45.71 million cubic feet on a fixed monthly basis. For the purpose of compliance with 326 IAC 2-8-4, the natural gas equivalent is calculated based on 7,000 gallons of No. 2 fuel oil burned per million cubic feet of natural gas burned. This fuel usage limitation combined with a 0.3% fuel oil sulfur content limitation will concurrently limit source SO2 emissions to less than the FESOP allowable of 99 tons per year.

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document (TSD) for First Significant Permit Modification of the Federally Enforceable State Operating Permit (FESOP) and Enhanced New Source Review (ENSR)

Source Background and Description

Source Name:	Mead Johnson & Company		
Source Location:	State Highway 62 East, Mt. Vernon, Indiana 47620		
County:	Posey		
FESOP No.:	F129-5036-00021	Issued:	December 11, 1996
Revision No.:	SMF-129-8570		
SIC Code:	2834		
Permit Reviewer:	Michael Hirtler/EVP		

On August 13, 1997, the Office of Air Management (OAM) had a notice published in the Mount Vernon Democrat, in Mount Vernon, Indiana, stating that Mead Johnson & Company had applied for the First Significant Permit Modification to the Federally Enforceable State Operating Permit (FESOP) and Enhanced New Source Review (ENSR). The modification to the FESOP for this pharmaceutical packaging and research and development source sought to construct and operate a 31.5 million British thermal units per hour (MMBtu/hr) natural gas fired boiler, without control, and with the capability of firing No. 2 distillate oil as an alternative fuel. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit modification and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit modification should be issued as proposed.

Upon further review, the OAM has decided to make the following changes to the First Significant Permit Modification to the FESOP and ENSR:

- 1) Item (7) of Operation Condition D.1.5, page 23 of 31, requires that the total monthly NO_x emission rate be reported for the proposed boiler plus the two (2) boilers covered under the existing FESOP. This condition is being removed since the Permittee is already required under Item (1) of this condition to record and report the total monthly usage of natural gas and natural gas fuel equivalent for the three combustion facilities. Since boiler fuel usage equivalence has been established in terms of the total monthly NO_x emission rate (Operation Condition D.1.2a), emissions reporting pursuant to Operation Condition D.1.5 (7) would be redundant and unnecessarily burdensome.
- 2) To avoid confusion in terms of potential duplicative record keeping and reporting requirements, Operation Condition D.4.14(a), page 26d of 31, has been revised for clarification as follows:
 - (a) To document compliance with Conditions D.4.6 and D.1.2a, the Permittee shall comply with the requirements of Operation Condition D.1.5.
- 3) Operation Condition D.4.15 will appear on page 26d of 31 instead of previous page 26e of 31, and page 26e of 31 will be eliminated from the final First Significant Permit Modification to the FESOP and ENSR. Page 1 of 31 of the FESOP will be revised to reflect this page elimination.

**Appendix A: Emissions Calculations
Industrial Boilers
#1 and #2 Fuel Oil (Back-up Fuel)**

Boiler S-8

Company Name: Mead Johnson & Company
Address, City IN Zip: State Highway 62 East, Mt. Vernon, Indiana 47620
FESOP: 129-5036-00021
Revision: SMF129-8570
Reviewer: Michael Hirtler/EVP
Date: May 5, 1997

Heat Input Capacity MMBtu/hr Potential Throughput kgals/year S = Weight % Sulfur

		0.49	(potential)
		0.30	(limited)

31.5 1999.56522

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/kgal (potential)	2.0	2.0	69	20.0	0.20	5.0
Emission Factor in lb/kgal (limited)	2.0	2.0	42.6 (142.0S)	20.0	0.20	5.0
Potential Emission in tons/yr	2.0	2.0	69.0	20.0	0.2	5.0
Limited Emission in tons/yr	2.0	2.0	42.6	20.0	0.2	5.0

Methodology

1 gallon of No. 2 Fuel Oil has an assumed average heating value of 138,000 Btu
 Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal / 1000 gallon x 1 gal / 0.138 MM Btu
 Emission Factors are from AP 42, Tables 1.3-2 and 1.3-4 (SCC 1-02-005-01/02/03)
 Emission (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 (30.64 MMBtu/hr each for existing boilers S-1 & S-2 and 31.5 MMBtu/hr for proposed boiler S-8)

Pt = 1.09 / (92.78)^{0.26} = 0.34 lb PM / MMBtu **(allowable)**
 = 10.57 lb PM / hour (equivalent allowable emissions)
 = 46.31 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 PM emission rate= 2.0 tons/yr / 4.38 lb/hr / tons/yr / 31.5 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 138,000 Btu/gal = 69 lb/1000 gal
 69 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.

FESOP No. F129-5036-00021, issued 12/11/96, limits #2 fuel oil sulfur content to: 0.30 %

Facility will comply with 326 IAC 7-1.1-2 by using fuel oil with a limited 0.30% sulfur content.

**Appendix A: Emissions Calculations
Industrial Boilers
#1 and #2 Fuel Oil (Back-Up Fuel)**

**Boiler Nos. S-1, S-2 & S-8
Total Limited Potential Emissions**

Company Name: Mead Johnson & Company
Address, City IN Zip: State Highway 62 East, Mt. Vernon, Indiana 47620
FESOP: 129-5036-00021
Revision: SMF129-8570
Reviewer: Michael Hirtler/EVP
Date: May 5, 1997

Heat Input Capacity MMBtu/hr	Throughput (kgals/year)		S = Weight % Sulfur
92.78	Potential	Limited	0.30
	5889.51	3840.00	

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.0	2.0	42.6 (142.0S)	20.0	0.20	5.0
Potential Emission in tons/yr	5.9	5.9	125.4	58.9	0.6	14.7
Limited Emission in tons/yr	3.8	3.8	81.8	38.4	0.4	9.6

Methodology

Emission Factors are from AP 42, Tables 1.3-2 and 1.3-4 (SCC 1-02-005-01/02/03)

1 gallon of No. 2 Fuel Oil has an assumed average heating value of 138,000 Btu

Individual boiler heat input capacities are: 30.64 MMBtu/hr each for Boilers S-1 & S-2, and 31.5 MMBtu/hr for Boiler S-8

Potential Emission (tons/yr) = Potential Throughput (kgals/ yr) x Emission Factor (lb/kgal) / 2,000 lb/ton

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal / 1000 gallon x 1 gal / 0.138 MM Btu

Limited Emission (tons/yr) = Limited Throughput (kgals/ yr) x Emission Factor (lb/kgal) / 2,000 lb/ton

Limited Throughput (kgals/year) = Potential Throughput (kgals/year) x Limited NOx emissions (38.4 tons/yr) / Potential NOx emissions (58.9 tons/yr)

Limited fuel oil usage at 65.20% of potential usage in Boilers S-1, S-2 & S-8 combined will maintain the existing source-wide FESOP limit of 99 tons NOx per year. This fuel usage limitation will also limit source-wide SO2 emissions to 90.4 tons per year, based on the maximum fuel sulfur content of 0.3% by weight. Therefore, the requirements of 326 IAC 2-7 do not apply.

FESOP No. F129-5036-00021, issued 12/11/96, limits #2 fuel oil sulfur content to: 0.30 %

**Appendix A: Emissions Calculations
Natural Gas (Primary Fuel)
10 < MM BTU/HR <100**

Boiler S-8

Company Name: Mead Johnson & Company
Address City IN Zip: State Highway 62 East, Mt. Vernon, Indiana 47620
FESOP: 129-5036-00021
Revision: SMF129-8570
Reviewer: Michael Hirtler/EVP
Date: May 5, 1997

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

31.5

275.9

Emission Factor in lb/MMCF	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
	13.7	13.7	0.6	140.0	2.8	35.0
Potential Emission in tons/yr	1.9	1.9	0.1	19.3	0.4	4.8

Methodology

MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors for NOx: Uncontrolled = 140, Low NOx Burner = 81, Flue gas recirculation = 30
Emission Factors for CO: Uncontrolled = 35, Low NOx Burner = 61, Flue gas recirculation = 37
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
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/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:

$$\begin{aligned}
 &Pt = 1.09 / Q^{0.26}, \text{ where } Pt = \text{allowable emission limit expressed as lb /MMBtu} \\
 &Q = \text{total source maximum heat input rate as MMBtu/hr (30.64 MMBtu/hr each for} \\
 &\quad \text{existing boilers S-1 \& S-2 and 31.5 MMBtu/hr for proposed boiler S-8)} \\
 Pt &= 1.09 / (92.78)^{0.26} = &0.34 \text{ lb PM / MMBtu} &\quad \text{(allowable)} \\
 &= &10.57 \text{ lb PM / hour (equivalent allowable emissions)} \\
 &= &46.31 \text{ ton PM / year (equivalent allowable emissions)}
 \end{aligned}$$

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

$$\begin{aligned}
 \text{Potential PM emission rate} &= &1.9 \text{ tons/yr} / &4.38 \text{ lb/hr / tons/yr} / &31.5 \text{ MMBtu/hr} \\
 &= &0.01 \text{ lb PM / MMBtu} &\quad \text{(will comply)}
 \end{aligned}$$

**Appendix A: Emissions Calculations
Natural Gas (Primary Fuel)
10 < MM BTU/HR <100**

**Boiler Nos. S-1, S-2 & S-8
Total Limited Potential Emissions**

Company Name: Mead Johnson & Company
Address City IN Zip: State Highway 62 East, Mt. Vernon, Indiana 47620
FESOP: 129-5036-00021
Revision: SMF129-8570
Reviewer: Michael Hirtler/EVP
Date: May 5, 1997

Heat Input Capacity MMBtu/hr	Throughput (MMCF/year)	
92.78	Potential	Limited
	812.75	548.57

Emission Factor in lb/MMCF	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
	13.7	13.7	0.6	140.0	2.8	35.0
Potential Emission in tons/yr	5.6	5.6	0.2	56.9	1.1	14.2
Limited Emission in tons/yr	3.8	3.8	0.2	38.4	0.8	9.6

Methodology

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02

MMBtu = 1,000,000 Btu; MMCF = 1,000,000 Cubic Feet of Gas

Individual boiler heat input capacities are: 30.64 MMBtu/hr each, for Boilers S-1 & S-2, and 31.5 MMBtu/hr for Boiler S-8

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

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

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

Limited Throughput (MMCF) = Potential Throughput (MMCF/yr) x Limited NOx emissions (38.4 tons/yr) / Potential NOx emissions (56.9 tons/yr)

Limited gas usage at 67.50% of potential usage in Boilers S-1, S-2 & S-8 combined will maintain the existing source-wide FESOP limit of 99 tons NOx per year. Therefore, the requirements of 326 IAC 2-7 do not apply.

Appendix A: Emissions Summary

Company Name: Mead Johnson & Company
Address, City IN Zip: State Highway 62 East, Mt. Vernon, Indiana 47620
FESOP: 129-5036-00021
Revision: SMF129-8570
Reviewer: Michael Hirtler/EVP
Date: May 5, 1997

FESOP No. F129-5036-00021, issued 12/11/96, limits source NOx emissions to 99 tons per year. The applicant wishes to add new Boiler S-8 to the source, while maintaining the FESOP status for the source. Included under the FESOP are existing Boiler Nos. S-1 & S-2, each rated at 30.64 million (MM) British thermal units (Btu) per hour. Based on natural gas and #2 fuel oil usage as the respective primary and back-up fuels fired in Boilers S-1 & S-2, and a fuel oil sulfur content limit of 0.3% by weight, the total limited potential to emit (PTE) for the existing boilers and the source follows. This information is taken from page 4 of 10 of the Technical Support Document (TSD) prepared under F129-5036-00021:

Process/facility	Limited PTE (tons/year)						
	PM	PM10	SO2	VOC	CO	NOx	HAPs
Boiler Nos. S-1 & S-2	3.8	3.8	81.6	0.8	9.60	38.4	0
Other Facilities	7.7	7.7	8.6	5.3	26.2	60.5	9.1 (total) 9.0 (single)
Total Emissions	11.5	11.5	90.2	6.1	35.8	98.9	9.1 (total) 9.1 (single)

The proposed Boiler S-8 will also fire natural gas as the primary fuel with #2 fuel oil as a back-up fuel. For each fuel type, the PTE for Boiler S-8 has been computed and is found on pages 2 and 3 of this TSD Appendix A (following). In order to maintain the FESOP status for the source, the limited PTE for NOx must remain at 99 tons per year. The source will therefore limit its combined annual fuel usage in all three boilers (S-1, S-2 & S-8) such that the limited NOx PTE does not exceed 99 tons per year. The fuel oil and natural gas usage limits computed for the three boilers combined are respectively found on pages 4 and 5 of this TSD Appendix A (following). The FESOP limits of F129-5036-00021 will be updated as follows:

Process/facility	Limited PTE (tons/year)						
	PM	PM10	SO2	VOC	CO	NOx	HAPs
Boiler Nos. S-1, S-2 & S-8	3.8	3.8	81.8	0.8	9.60	38.4	0
Other Facilities	7.7	7.7	8.6	5.3	26.2	60.5	9.1 (total) 9.0 (single)
Total Emissions	11.5	11.5	90.4	6.1	35.8	98.9	9.1 (total) 9.1 (single)

The above Limited PTE reflects the following fuel usage limitation for Boilers S-1, S-2 & S-8: the total annual natural gas usage will not exceed 548.57 million (MM) cubic feet burned (see page 5 of this TSD Appendix A, following). For the purposes of determining compliance with this limitation when #2 fuel oil is burned as a backup fuel, each million cubic foot of natural gas burned is considered equivalent to 7,000 gallons of #2 fuel oil burned (i.e., 3,840 kgals oil burned * 1MMcf/548.57MMcf natural gas = 7,000 gallons fuel oil equivalence to 1 million cubic feet of natural gas burned in terms of total limited NOx emissions from Boilers S-1, S-2 and S-8). Compliance with the fuel usage limitation will make the requirements of 326 IAC 2-7 (Part 70 Permit Program) not applicable to this source.