

**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.

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

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D.1 FACILITY OPERATION CONDITIONS

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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 NO_x burner and flue gas recirculation system identified as CSUP-1, maximum capacity rated at 97.9 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450⁰ F, exhausting at one (1) stack identified as CSUP-S₁;
- (b) One (1) natural gas fired boiler with low NO_x burner and flue gas recirculation system identified as CSUP-2, maximum capacity rated at 97.9 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450⁰ F, exhausting at one (1) stack identified as CSUP-S₂;
- (c) One (1) natural gas fired boiler with low NO_x burner and flue gas recirculation system identified as CSUP-3, maximum capacity rated at 97.9 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450⁰ F, exhausting at one (1) stack identified as CSUP-S₃;
- (d) One (1) diesel fuel oil fired emergency electric generator identified as CSUP-4, rated at 14.90 million British thermal units (mmBtu/hr) or capable of maximum 1,600 KW output, exhausting at one (1) stack identified as CSUP-S₄;

- (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^o F.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

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

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);

A.4 Prior Construction Permit Conditions Superseded [326 IAC 2]

The terms and conditions of the construction permit (CP-163-8495-00015) issued on October 9, 1997 shall be superseded with this construction permit.

SECTION B

GENERAL CONDITIONS

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]

B.1 General Construction Conditions

- (a) The data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
- (b) 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.

B.2 Effective Date of the Permit [IC13-15-5-3]

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

B.3 Revocation of Permits [326 IAC 2-1-9(b)]

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

B.4 Permit Review Rules [326 IAC 2]

Notwithstanding Construction Condition (B.5), all requirements and conditions of this construction permit 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).

B.5 First Time Operation Permit [326 IAC 2-1-4]

This document shall also become a first-time operation 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 the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction 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) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
- (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).
- (e) The Permittee has submitted their Part 70 application (T-163-7142-00015) on November 12, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Operation Conditions

B.6 General Operation Conditions

- (a) The data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
- (b) The Permittee shall 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 (IC13-17) and the rules promulgated thereunder.

B.7 Preventive Maintenance Plan [326 IAC 1-6-3]

Pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:

- (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
- (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
- (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

B.8 Transfer of Permit [326 IAC 2-1-6]

Pursuant to 326 IAC 2-1-6 (Transfer of Permits):

- (a) In the event that ownership of this pharmaceutical formulation and nutritional products operations is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
- (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
- (c) The OAM shall reserve the right to issue a new permit.

B.9 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

B.10 Availability of Permit [326 IAC 2-1-3(I)]

Pursuant to 326 IAC 2-1-3(I), the Permittee shall maintain the applicable permit on the premises of the source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards

C.1 Major Source [326 IAC 2-2] [40 CFR 52.21]

Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration), this source is a major source.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Visible Emissions Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), visible emissions from boilers 8, 9, and 10 shall meet the following at all times of natural gas firing:

- (a) Visible emissions shall not exceed an average of forty percent (40%) opacity in twenty-four (24) consecutive readings, as determined in 326 IAC 5-1-4.
- (b) Visible emissions shall not exceed sixty percent (60%) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

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. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. The Permittee must comply with all applicable local ordinances for open burning.

C.4 Incineration [326 IAC 4-2][326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Notice of Malfunction [326 IAC 1-6-2]

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.7 Stack Height [326 IAC 1-7]

- (a) The Permittee shall comply with the provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks identified as CSUP-S₁, CSUP-S₂ and CSUP-S₃ through which a potential (before controls) of twenty-five (25) tons per year or more of sulfur dioxides are emitted.
- (b) Any change in applicable stacks shall require prior approval from IDEM, OAM.

C.8 Asbestos Abatement Projects - Accreditation [326 IAC 14-10] [326 IAC 18]
[40 CFR 61, Subpart M]

Prior to the commencement of any demolition or renovation activities, the Permittee shall use an Indiana accredited asbestos inspector to inspect thoroughly the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable asbestos containing material. The requirement that the inspector be accredited is federally enforceable.

Testing Requirements

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

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing methods approved by IDEM, OAM.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Evansville EPA
Room 250
101 N.W. Martin Luther King Jr. Boulevard
Evansville, Indiana 47708

no later than thirty-five (35) days before the intended test date.

- (b) All test reports must be received by IDEM, OAM within forty-five (45) days after the completion of the testing. An extension may be granted by the Commissioner, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Monitoring Requirements

C.10 Monitoring Methods [326 IAC 3]

Any monitoring or testing performed to meet the requirements of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.11 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
 - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
 - (2) If there is a change in the following:
 - (A) Asbestos removal or demolition starts date;
 - (B) Removal or demolition contractor; or
 - (3) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

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

and

Evansville EPA
Room 250
101 N.W. Martin Luther King Jr. Boulevard
Evansville, Indiana 47708

- (e) Procedures for Asbestos Emission Control
The Permittee shall comply with the emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4 emission control requirements are mandatory for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited is federally enforceable.

Corrective Actions and Response Steps

C.12 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) If the ERP is disapproved by IDEM, OAM, and Evansville EPA, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.
- (c) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (d) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (e) Upon direct notification by IDEM, OAM, and Evansville EPA, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level.
[326 IAC 1-5-3]

C.13 Actions Related to Noncompliance Demonstrated by a Stack Test

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM reserves the authority to use enforcement activities to resolve noncompliant stack tests.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected facility.

Record Keeping and Reporting Requirements

C.14 Emission Statement [326 IAC 2-6]

- (a) The Permittee shall submit a certified, annual emission statement that must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual emission statement shall meet the following requirements:
 - (1) Indicate actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
 - (2) Indicate actual emissions of other regulated pollutants from the source, for purposes of Part 70 fee assessment.

- (b) The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30. The annual emission statement must be submitted to:
- (c) The annual emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM and Evansville EPA on or before the date it is due.

C.15 Monitoring Data Availability

- (a) With the exception of performance tests conducted in accordance with Section C- Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM and Evansville EPA may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.16 General Record Keeping Requirements

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location and available within one (1) hour upon verbal request of an IDEM, OAM, and Evansville EPA representative, for a minimum of three (3) years. They may be stored elsewhere for the remaining two (2) years providing they are made available within thirty (30) days after written request.
- (b) Records of required monitoring information shall include, where applicable:
 - (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;

- (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
- (1) Copies of all reports required by this permit;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;
 - (4) Records of preventive maintenance shall be sufficient to demonstrate that improper maintenance did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, part inventories, and operator's standard operating procedures. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.17 General Reporting Requirements

- (a) To affirm that the source has met all the requirements stated in this permit the source shall submit a Quarterly Compliance Report. Any deviation from the requirements and the date(s) of each deviation must be reported.
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Evansville EPA
Room 250
101 N.W. Martin Luther King Jr. Boulevard
Evansville, Indiana 47708
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM and Evansville EPA on or before the date it is due.
- (d) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period.

Stratospheric Ozone Protection

C.18 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

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 97.9 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450^oF, exhausting at one (1) stack identified as CSUP-S₁;
- (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 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450^oF, exhausting at one (1) stack identified as CSUP-S₂;
- (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 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450^oF, exhausting at one (1) stack identified as CSUP-S₃;
- (d) One (1) diesel fuel oil fired emergency electric generator identified as CSUP-4, rated at 14.90 million British thermal units (mmBtu/hr) or capable of maximum 1,600 KW output, exhausting at one (1) stack identified as CSUP-S₄;
- (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^oF.

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 (SO₂) [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 SO₂ emissions from the 93.40 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 SO₂ 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 97.90 MMBTU/hr burning natural gas or rated 93.40 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) NO_x emissions from the 97.90 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) NO_x emissions from the 93.40 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 gallons per year, rolled on a monthly basis. This production limitation is equivalent to NO_x emissions of 14.30 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.

These conditions are necessary to, and will make the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, inapplicable to this modification, because the uncontrolled oxides of nitrogen (NO_x) emissions from this modification are more than 40 tons per year, the significance level of NO_x.

D.1.5 Preventive Maintenance Plan

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the boilers identified as CSUP-1, CSUP-2 and CSUP-3.

Compliance Determination Requirements [326 IAC 7-2-1] [326 IAC 12] [40 CFR 60.44c] [40 CFR 60.45c]

D.1.6 Sulfur Dioxide Emissions and Sulfur Content [326 IAC 7-2-1][326 IAC 3-3-4] [326 IAC 12] [40 CFR 60.44c (g) & (h)] [326 IAC 2-1-5]

Pursuant to 326 IAC 7-2-1 and 40 CFR 60, Subpart Dc, the Permittee shall demonstrate compliance utilizing one of the following options:

- (a)
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a certification from the fuel supplier [40 CFR 60.48c (f) (1)]; 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.
- (b) Fuel sampling and analysis data shall be collected pursuant to the procedures specified in 326 IAC 3-7 for oil combustion, and this data can be used to determine compliance or noncompliance with the emission limitation contained in 326 IAC 7-1.1. Computation of calculated sulfur dioxide emission rates from fuel sampling and analysis based on the emission factors in U.S. EPA publication AP-42, "Compilation of Air Pollutant Emission Factors," unless other emission factors based on the site-specific sulfur dioxide measurement are approved by the commissioner. Fuel sampling and analysis data shall be collected as follows:

- (1) For all other combustion sources, compliance or noncompliance shall be determined using a calendar month average sulfur dioxide emission rate in pounds per million Btu, unless a shorter averaging time or alternate averaging methodology is specified for a source under this article.

D.1.7 Testing Requirements for NO_x [326 IAC 2-1-3]

Testing shall be performed to determine compliance with the NO_x emission limits specified for the boilers identified as CSUP-1, CSUP-2 and CSUP-3 in Condition D.1.4 (a) and (b). These tests shall be performed within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. The testing shall be performed using the method specified in 326 IAC 3-6 or as approved by the Commissioner. These tests shall be conducted in accordance with Section C - Performance Testing.

D.1.8 Testing Requirements for Opacity [326 IAC 12] [40 CFR 60.45c(a)(7)][40 CFR 60.8]

- (a) Within 60 days after achieving the maximum production rate at which the boilers identified as CSUP-1, CSUP-2 and CSUP-3 will be operated, but not later than 180 days after initial startup of the boilers and at such other times as may be required by the Commissioner under section 114 of the Act, the owner or operator of the boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall conduct performance test(s) and furnish the OAM and Evansville EPA a written report of the results of such performance test(s).
- (b) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in § 60.45c (a) unless the Commissioner (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, (3) approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance, (4) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Commissioner's satisfaction that the boilers are in compliance with the standard, or (5) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph shall be construed to abrogate the Commissioner's authority to require testing under section 114 of the Act.
- (c) Performance tests shall be conducted under such conditions as the Commissioner shall specify to the plant operator based on representative performance of the boilers. The owner or operator shall make available to the Commissioner such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.
- (d) The owner or operator of the boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall provide the Commissioner at least 30 days prior notice of any performance test, to afford the Commissioner the opportunity to have an observer present.
- (e) The owner or operator of the boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall provide, or cause to be provided, performance testing facilities as follows:

- (1) Sampling ports adequate for test methods applicable to such facility. This includes
 - (i) constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and
 - (ii) providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.
 - (2) Safe sampling platform(s).
 - (3) Safe access to sampling platform(s).
 - (4) Utilities for sampling and testing equipment.
- (f) Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Commissioner's approval, be determined using the arithmetic mean of the results of the two other runs.
- (g) The owner or operator of the Boilers identified as CSUP-1, CSUP-2 and CSUP-3 subject to the opacity standards under § 60.43c shall conduct an initial performance test as described as (a) through (f), using the following procedures and reference methods.
- (1) Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions.

Record Keeping and Reporting Requirements [326 IAC 12] [40 CFR 60.48c]

D.1.9 Record Keeping Requirements [326 IAC 12] [40 CFR 60.48c]

- (a) The owner or operator of the boilers identified as CSUP-1, CSUP-2 and CSUP-3 subject to the SO₂ emission limit, fuel oil sulfur limits shall keep records.
- (b) The owner or operator of each boilers shall record and maintain records of the amounts of each fuel combusted during each day.
- (c) All records required under this section shall be maintained by the owner or operator of the boilers identified as CSUP-1, CSUP-2 and CSUP-3 for a period of two years following the date of such record.

D.1.10 Reporting Requirements [326 IAC 7-2-1(a)(3)][326 IAC 12] [40 CFR 60.48c (d)]

- (a) The owner or operator of each boilers shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by § 60.7 of this part. This notification shall include:
 - (1) The design heat input capacity of the boilers identified as CSUP-1, CSUP-2, CSUP-3 and identification of fuels to be combusted in the boilers.
- (b) The owner or operator of each boilers subject to the opacity limits of § 60.43c, shall submit to the IDEM, OAM and Evansville EPA the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS using the applicable performance specifications in appendix B.

- (c) The owner or operator of each boilers identified as CSUP-1, CSUP-2 and CSUP-3 subject to the SO₂ emission limits, fuel oil sulfur limits shall submit quarterly reports to IDEM, OAM and Evansville EPA. The initial quarterly report shall be postmarked by the 30th day of the third month following the completion of the initial performance test. Each subsequently quarterly report shall be postmarked by the 30th day following the end of the reporting period.
- (d) The quarterly report shall include the include the following information, as applicable.
- (1) Calendar dates covered in the reporting period.
 - (2) Each 30-day average SO₂ emission rate (ng/J or lb./million Btu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period in the quarter; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.
 - (3) Each 30-day average percent of potential SO₂ emission rate calculated during the reporting period, ending with the last 30-day period in the quarter; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.
 - (4) Identification of any boilers operating days for which SO₂ data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.
 - (5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which oil were not combusted in the boilers.
 - (6) Fuel supplier certification shall include the following information (for distillate oil):
 - (i) The name of the oil supplier; and
 - (ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c.
 - (7) Certified statement signed by the owner or operator of the boilers that the records of fuel supplier certifications submitted represent all of the fuel combusted during the quarter.
- (e) A quarterly summary of the information to document compliance with Condition D.1.4 (c) shall be submitted to the address(es) listed in Section C - General Reporting Requirements, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

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

and

EVANSVILLE EPA

**CONSTRUCTION PERMIT
NATURAL GAS FIRED BOILER CERTIFICATION**

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.: CP-163-9713-00015

**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

Boiler # 8 (CSUP-1)

Boiler # 9 (CSUP-2)

Boiler # 10 (CSUP-3)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

MALFUNCTION REPORT

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ?____, 100 LBS/HR VOC ?____, 100 LBS/HR SULFUR DIOXIDE ?____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ?____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: Mead Johnson & Company PHONE NO. (812) 429- 5000

LOCATION: (CITY AND COUNTY) Evansville, Vanderburgh

PERMIT NO. **163-9713** AFS PLANT ID: **163-00015** AFS POINT ID: _____ INSP: Gene Kelso

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/ 19____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/ 19____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____
DATE: _____ TIME: _____

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 “Malfunction” definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m. : 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

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: 48,780 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 EPA**

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

| | |
|--------------------------|---|
| Source Name: | Mead Johnson & Company |
| Source Location: | 2400 West Lloyd Expressway, Evansville, Indiana 47721 |
| County: | Vanderburgh |
| Construction Permit No.: | CP-163-9713-00015 |
| SIC Code: | 2834, 2099 |
| Permit Reviewer: | Manoj P. Patel |

The Office of Air Management (OAM) has reviewed an application from Mead Johnson & Company relating to the modification and operation of central steam utility plant (CSUP), consisting of the following equipment:

- (a) One (1) natural gas fired boiler with low NO_x burner and flue gas recirculation system identified as CSUP-1, maximum capacity rated at 97.9 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450^oF, exhausting at one (1) stack identified as CSUP-S₁;
- (b) One (1) natural gas fired boiler with low NO_x burner and flue gas recirculation system identified as CSUP-2, maximum capacity rated at 97.9 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450^oF, exhausting at one (1) stack identified as CSUP-S₂;
- (c) One (1) natural gas fired boiler with low NO_x burner and flue gas recirculation system identified as CSUP-3, maximum capacity rated at 97.9 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450^oF, exhausting at one (1) stack identified as CSUP-S₃;
- (d) One (1) diesel fuel oil fired emergency electric generator identified as CSUP-4, rated at 14.90 million British thermal units (mmBtu/hr) or capable of maximum 1,600 KW output, exhausting at one (1) stack identified as CSUP-S₄;
- (e) One (1) horizontal fixed roof dome tank with a maximum design capacity of 10,000gallons identified as CSUP-F1, will be used to store petroleum products with a maximum vapor pressure of 0.009 psia at 68^oF.

Stack Summary

| Stack ID | Operation | Height (feet) | Diameter (feet) | Flow Rate (acfm) | Temperature (°F) |
|----------|--------------------|---------------|-----------------|------------------|------------------|
| CSUP-1 | Boiler 8 | TBD | TBD | TBD | TBD |
| CSUP-2 | Boiler 9 | TBD | TBD | TBD | TBD |
| CSUP-3 | Boiler 10 | TBD | TBD | TBD | TBD |
| CSUP-4 | Electric Generator | TBD | TBD | TBD | TBD |

Enforcement Issue

There are no Enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the construction and operation 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.

An application for the purposes of this review was received on April 24, 1998, with additional information received on June 1, 1998.

Emissions Calculations

- (a) See Appendix A (Emissions Calculation Spreadsheets for Boiler # 8) for detailed calculations.
- (b) See Appendix B (Emissions Calculation Spreadsheets for Boiler # 9) for detailed calculations.
- (c) See Appendix C (Emissions Calculation Spreadsheets for Boiler # 10) for detailed calculations.
- (d) See Appendix D (Emissions Calculation Spreadsheets for Electric Generator) for detailed calculations.
- (e) See Appendix E (Emissions Calculations - Tank 3.1) for detailed VOC calculations.
- (f) The new boilers (CSUP-1, 2 and 3) will achieve an emission rate of 0.08 lb./mmBtu while burning Distillate No. 2 fuel oil. The company has stated in the submitted report that the low NO_x burner system on a boilers (CSUP-1, 2 and 3) with flue gas recirculation will meet the NO_x emissions of 0.08 lb./mmBtu. The low NO_x burner vendor has demonstrated NO_x emissions with No. 2 distillate fuel oil firing at or below 0.08 lb./mmBtu. OAM has accepted the 0.08 lb./mmBtu as an emission factors for the boilers (CSUP-1, 2 and 3) and the NO_x testing will be required.

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (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) | 24.0 | 17.7 |
| Particulate Matter (PM ₁₀) | 14.0 | 10.1 |
| Sulfur Dioxide (SO ₂) | 374.90 | 374.90 |
| Volatile Organic Compounds (VOC) | 7.40 | 7.40 |
| Carbon Monoxide (CO) | 111.0 | 111.0 |
| Nitrogen Oxides (NO _x) | 118.50 | 118.50 |
| Single Hazardous Air Pollutant (HAP) | 0.0 | 0.0 |
| Combination of HAPs | 0.0 | 0.0 |

- (a) Allowable sulfur dioxide emissions are determined from the applicability of rule 40 CFR Part 60.40c through 60.48c, Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), allowable CO emissions are determined from the applicability of rule 326 IAC 2-2 (PSD). See Appendix A, B, C (Page 2 of 2) for detailed calculations.
- (b) The potential PM, and PM₁₀ emissions before control are less than 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, CO and NO_x are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, a construction permit is required.

County Attainment Status

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

Source Status

Existing Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity):

| Pollutant | Emissions (ton/yr) |
|-----------------|--------------------|
| PM | 41.60 |
| PM10 | 41.60 |
| SO ₂ | 149.20 |
| VOC | 101.20 |
| CO | 383.0 |
| NO _x | 290.20 |

- (a) This existing source is a major stationary source because at least one attainment regulated pollutant is emitted at a rate of 250 tons per year.
- (b) This existing source is a major stationary source because VOC and NO_x are emitted at a rate of 100 tons per year or greater.
- (c) These emissions were based on Facility Quick Look Report, dated July 24, 1997.

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):

| Pollutant | PM (ton/yr) | PM10 (ton/yr) | SO ₂ (ton/yr) | VOC (ton/yr) | CO (ton/yr) | NO _x (ton/yr) |
|---------------------------------|-------------|---------------|--------------------------|--------------|-------------|--------------------------|
| Proposed Modification | 17.7 | 10.10 | 374.90 | 7.40 | 111.0 | 117.0 |
| Contemporaneous Increases | ---- | ---- | 0.03 | ---- | 2.60 | 4.30 |
| Contemporaneous Decreases | ---- | ----- | - 613.90 | ---- | - 64.80 | - 82.0 |
| Net Emissions | 17.7 | 10.10 | - 239.0 | 7.40 | 48.80 | 39.30 |
| PSD or Offset Significant Level | 25 | 15 | 40 | 40 | 100 | 40 |

- (a) The Contemporaneous decreases are calculated in the Appendix F.
- (b) 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

40 CFR Part 60.40c through 60.48c, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

The natural gas fired (with No. 2 distillate fuel oil as back up fuel) 97.90 mmBtu per hour boilers (Unit ID No. 8,9 and 10) are subject to the requirements of this rule. 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 (see page 2 of Appendix A, B, C) at all times including periods of start-up, shut-down and malfunction. The source will comply with this rule by accepting a federally enforceable emission limit of 0.3 pounds per MMBTU heat input when burning No. 2 distillate fuel oil in the 97.90 MMBTU per hour boiler.
- (b) when burning No. 2 distillate fuel oil, 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

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 10 tons/yr of both VOC and NO_x. Pursuant to this rule, the owner/operator of this source must annually submit an emission statement of the source. The annual statement must be received by April 15 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

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

This rule applies to visible emissions from a source or facility located in Vanderburgh County. Since a specific visible emission limit has been established for the boilers (CSUP-1, 2 and 3) in 326 IAC 12, (40 CFR Part 60, Subpart Dc) during periods of distillate oil firing, the requirements of 326 IAC 5-1-2 superceded by Subpart Dc when the boilers are firing with distillate oil. However, during periods of natural gas firing, the boilers shall meet the following visible emission limitations pursuant to 326 IAC 5-1-2 (2):

- (a) visible emissions shall not exceed an average of thirty percent (30%) 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.

Submittal of the natural gas certification for the 97.9 MMBTU per hour boilers (CSUP-1, 2 and 3) will indicate compliance with the opacity requirements when using natural gas.

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

The 97.90 MMBTU per hour 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). Pursuant to 326 IAC 6-2-4, the particulate matter (PM) emissions shall be limited to 0.22 pounds per million BTU heat input (see page 2 of Appendix A, B and C).

Allowable PM emissions = $(0.22 \text{ lb./MMBTU}) \times (97.9 \text{ MMBTU/hr}) \times (8760 \text{ hr/yr}) \times (1 \text{ ton}/2000 \text{ lbs}) = 94.30 \text{ tons/year}$

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.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The sulfur dioxide emissions from the 97.90 MMBTU per hour boilers (Unit ID No. 8, 9 and 10), 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 0.5%. Therefore, the sulfur content of the distillate fuel must be less than or equal to 0.5% in order to comply with this rule (See Appendix A, B and C 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)

The 97.90 MMBTU per hour boilers (Unit ID No.8, 9 and 10) are subject to 326 IAC 7-2-1 (Reporting Requirements). This rule requires the source to submit to the Office of Air Management upon request reports of calendar month or annual average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rates in pounds per million Btu. The source will comply with the reporting requirements of 326 IAC 7-2-1 for boilers 8, 9 and 10 by submitting on a calendar quarter basis the parameters recorded pursuant to this rule.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)

The 97.90 MMBTU per hour boilers (Unit ID No. 8, 9 and 10) are not subject to the provisions of 326 IAC 8-1-6 because potential uncontrolled VOC emissions are less than 25 tons per year. Therefore, 326 IAC 8-1-6 does not apply.

326 IAC 8-4-3 (Petroleum Sources: Petroleum Liquid Storage Facilities)

The Distillate fuel oil No.2 tank identified as CSUP-F1 is not subject to this rule because the tank capacity is 10,000 gallons.

No other 326 IAC 8 rules apply.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

- (a) None of these listed air toxics will be emitted from this proposed construction.

Conclusion

The construction of this modification and operation of central steam utility plant (CSUP) will be subject to the conditions of the attached proposed **Construction Permit No. CP-163-9713-00015**.

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

Addendum to the
Technical Support Document for New Construction and Operation

Source Name: Mead Johnson & Company
Source Location: 2400 West Lloyd Expressway, Evansville, Indiana 47721
County: Vanderburgh
Construction Permit No.: CP-163-9713-00015
SIC Code: 2834, 2099
Permit Reviewer: Manoj P. Patel

On June 22, 1998, the Office of Air Management (OAM) had a notice published in the Evansville Courier, Evansville, Indiana, stating that Mead Johnson and Company had applied for a construction permit to construct and operate the central steam utility plant (CSUP). 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 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 should be issued as proposed.

On July 1 and 6, 1998, Mr. Jeff Slayback of Environmental Quality Management, Inc., a consultant of Mead Johnson and Company has submitted comments on the proposed construction permit. The summary of the comments and corresponding responses is as follows:

Comment 1:

Section A.2(e), D.1(e), on page 4 and 16 of 24 of the proposed construction permit should be revised to read as fixed roof tank instead of horizontal fixed roof dome tank. Mead Johnson has not completed final design of an emission unit and the proposed change will allow Mead Johnson flexibility in final equipment design.

Response 1:

The OAM agrees with the source and will make the necessary changes in the final permit. Section A.2(e), D.1(e), and item (e) of the TSD, on page 4 of 24 of the proposed permit has been changes from:

- (e) One (1) horizontal fixed roof dome 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 68⁰F.

to be as follows, on page 4 and 16 of 25 of the final construction permit and page 1 of TSD:

- (e) One (1) ~~horizontal fixed roof dome~~ 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 68⁰F.

Comment 2:

Section D.1.1(a) and (b), page 16 of 24 of the proposed permit requires that SO₂ emissions from the boilers (CSUP-1, CSUP-2 and CSUP-3) shall not exceed five tenths (0.50) pounds per million Btu and sulfur content shall not exceed 0.50% by weight. Mead Johnson proposes the SO₂ emissions of 0.30 pounds per million Btu and sulfur content of 0.30% by weight for the boilers (CSUP-1, CSUP-2 and CSUP-3).

Response 2:

Pursuant to 326 IAC 2-1-5 (State Construction and Operating Permits: Emission Limitations), emission limitations may be established as conditions of construction and operating permits for any source or facility for the purpose of ensuring that the ambient air quality standards, and the prevention of significant deterioration standards are attained and maintained and for insuring that the public health is protected. The OAM has made emission calculations and notified in the proposed construction permit about the 0.30% sulfur content by weight and SO₂ emissions of 0.30 lbs/mmBtu in appendixes A, B and C. 326 IAC 2-1-5 requires the Commissioner to notify the owner or operator of the source or facility establishing emission limitations as a condition by public notice of such condition in a newspaper. The OAM believes that it is not necessary to repeat the public notice since the source and the OAM agrees on the limitations. Therefore, Condition D.1.1 (sulfur Dioxide), on page 16 of 24 of the proposed permit has been changed from:

D.1.1 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1] [326 IAC 12] [40 CFR 60.42c]

- (a) The SO₂ emissions from the 93.40 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 SO₂ emission limits, fuel oil sulfur content limits apply at all times, including periods of startup, shutdown, and malfunction.

to be as follows, on page 16 of 25 of the final permit:

D.1.1 Sulfur Dioxide (SO₂) [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 SO₂ emissions from the 93.40 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 SO₂ 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.

Comment 3:

Section D.1.4 (a) and (c), page 17 of 24, should correct the typographical errors as 0.08 instead of 0.084 pounds per hour, NO_x emissions of 14.30 instead of 17.0 tons per year.

Response 3:

OAM has corrected the typographical errors in the Condition D.1.4, on page 17 of 25 of the final permit as follows:

- (a) NO_x emissions from the 97.90 MMBTU/hr boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall be limited to 0.084 pounds per MMBTU (lb./mmBtu) while burning natural gas only and;
- (c) The input diesel fuel oil of the electrical generator identified as CSUP-4 shall be limited to 48,780 gallons per year, rolled on a monthly basis. This production limitation is equivalent to NO_x emissions of ~~17.0~~ **14.30** tons per year, rolled on a monthly basis.

Comment 4:

Section D.1.9 (Emission Monitoring for Particulate Matter), Page 19 of 24 of the proposed permit should be deleted, as the regulation cited therein are not applicable to the boilers identified as CSUP-1, CSUP-2 and CSUP-3. Section D.1.10 and D.1.11 would be renumbered.

Response 4:

Pursuant to 326 IAC 12 and 40 CFR 60.47c, the requirement to install and operate a continuous opacity monitor is applicable to boilers that combust coal, wood and/or residual oil. The Boilers identified as CSUP-1, CSUP-2 and CSUP-3 will combust No. 2 distillate fuel oil. Since, there will be no combustion of residual oil at boilers CSUP-1, CSUP-2 and CSUP-3, condition D.1.9 will be deleted and Conditions D.1.10 and D.1.11 will be renumbered, on page 20 of 25 in the final permit as follows.

~~Compliance Monitoring Requirements [326 IAC 12][40 CFR 60.47c]~~

~~D.1.9 Emission Monitoring for Particulate Matter (PM) [326 IAC 12] [40 CFR 60.47c]~~

- ~~(a) The owner or operator of the boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall install, maintain, and operate a GEMS for measuring the opacity of the particulate matter emissions discharged to the atmosphere and record the output of the system.~~

- ~~(b) All GEMS for measuring opacity shall be operated in accordance with the applicable procedures under Performance Specification 1 (Appendix B). The span value of the opacity GEMS shall be between 60 and 80 percent.~~

~~D.1.10 9 Record Keeping Requirements [326 IAC 12] [40 CFR 60.48c]~~

~~D.1.11~~ **D.1.10** Reporting Requirements [326 IAC 7-2-1(a)(3)][326 IAC 12] [40 CFR 60.48c (d)]

Comment 5:

Proposed modification section, page 4 of 7 of the original TSD, should be revised as NO_x emissions of 117.20 tons per year and the resulting net emissions for NO_x should read 39.50 tons per year.

Response 5:

The proposed modification section, on page 4 of 7 of the TSD, has been changed from:

| Pollutant | PM (ton/yr) | PM10 (ton/yr) | SO ₂ (ton/yr) | VOC (ton/yr) | CO (ton/yr) | NO _x (ton/yr) |
|------------------------------------|----------------|------------------|-----------------------------|-----------------|----------------|-----------------------------|
| Proposed Modification | 17.7 | 10.10 | 374.90 | 7.40 | 111.0 | 117.0 |
| Contemporaneous Increases | ---- | ---- | 0.03 | ---- | 2.60 | 4.30 |
| Contemporaneous Decreases | ---- | ----- | - 613.90 | ---- | - 64.80 | - 82.0 |
| Net Emissions | 17.7 | 10.10 | - 239.0 | 7.40 | 48.80 | 39.30 |
| PSD or Offset Significant Level | 25 | 15 | 40 | 40 | 100 | 40 |

to be as follows, on page 4 of 7 of the TSD:

| Pollutant | PM (ton/yr) | PM10 (ton/yr) | SO ₂ (ton/yr) | VOC (ton/yr) | CO (ton/yr) | NO _x (ton/yr) |
|------------------------------------|----------------|------------------|-----------------------------|-----------------|----------------|--------------------------------|
| Proposed Modification | 17.7 | 10.10 | 374.90 | 7.40 | 111.0 | 117.0 117.20 |
| Contemporaneous Increases | ---- | ---- | 0.03 | ---- | 2.60 | 4.30 |
| Contemporaneous Decreases | ---- | ----- | - 613.90 | ---- | - 64.80 | - 82.0 |
| Net Emissions | 17.7 | 10.10 | - 239.0 | 7.40 | 48.80 | 39.30 39.50 |
| PSD or Offset Significant Level | 25 | 15 | 40 | 40 | 100 | 40 |

Comment 6:

The second note to the table of Appendix A, B and C, page 2 of 2 of their respective appendices should read as follows:

No. 2 fuel oil usage is not limited. Limited SO₂ emissions are based on an enforceable maximum fuel oil sulfur content of 0.30% by weight.

Response 6:

The fuel oil usage has not been limited in the permit for the boilers identified as CSUP-1, CSUP-2 and CSUP-3. The second note on page 2 of 2 has been revised in Appendixes A, B and C.

Comment 7:

Appendix D of the TSD should be revised with emissions of PM, PM₁₀, SO₂, NO_x, CO and VOC, based on an enforceable limit of 48,780 gallons of diesel fuels per year.

Response 7:

The emissions in the Appendix D are based on the 500 hours (eq. 53,214 gallons per year) of operation for an emergency generator as guidance provided by the EPA. The source had chosen a limit of 48,780 gallons of diesel fuel per year for an emergency generator (CSUP-4) to limit the overall NO_x emissions below the threshold level. There will be no change in Appendix D but, the OAM will add a new Appendix G (Limited Emissions: Emergency Generator) to the TSD addendum.

Comment 8:

The contemporaneous decreases PM₁₀ emissions in item (b) of Appendix F for boilers 3,4 and 5 should read as - 40.10 TPY instead of - 41.0 TPY.

Response 8:

The OAM has corrected the typographical error in the revised Appendix F.

Upon further review, OAM has made the following changes to the final construction permit (changes are bolded for emphasis):

1. Condition D.1.2 (Opacity Limitations), on page 17 of 24 of the proposed permit has been changed from:

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

- (a) The opacity from the 93.40 mmBtu/hr boilers exhaust identified as CSUP-S₁, CSUP-S₂ and CSUP-S₃ shall not exceed 20 percent (20%) as a 6-minute average of 24 consecutive readings and;
- (b) The opacity from the 93.40 MMBTU/hr boilers exhaust identified as CSUP-S₁, CSUP-S₂ and CSUP-S₃ shall not exceed 27 percent (27%) during any 6-minute period in an hour.
- (c) Opacity limits in (a) and (b) apply at all times of No. 2 distillate oil firing, except during periods of start-up, shut down and malfunction.

to be as follows, on page 17 of 25 of the final permit:

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

- ~~(a) The opacity from the 93.40 mmBtu/hr boilers exhaust identified as CSUP-S₁, CSUP-S₂ and CSUP-S₃ shall not exceed 20 percent (20%) as a 6-minute average of 24 consecutive readings and;~~
- ~~(b) The opacity from the 93.40 MMBTU/hr boilers exhaust identified as CSUP-S₁, CSUP-S₂ and CSUP-S₃ shall not exceed 27 percent (27%) during any 6-minute period in an hour.~~

(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.

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

2. Subsection (b) of Condition D.1.6 (Sulfur Dioxide Emissions and Sulfur Content), on page 18 of 24 of the proposed permit has been changed from:

(b) Fuel sampling and analysis data shall be collected pursuant to the procedures specified in the 326 IAC 3-3-4 for oil combustion, and these data can be used to determine compliance or noncompliance with the emission limitation contained in 326 IAC 7-1.1.

Computation of calculated sulfur dioxide emission rates from fuel sampling and analysis based on the emission factors in U.S. EPA publication AP-42, "Compilation of Air Pollutant Emission Factors," unless other emission factors based on the site-specific sulfur dioxide measurement are approved by the commissioner. Fuel sampling and analysis data shall be collected as follows:

to be as follows, on page 18 of 25 of the final permit:

- (b) Fuel sampling and analysis data shall be collected pursuant to the procedures specified in 326 IAC ~~3-3-4~~ **3-7** for oil combustion, and this data can be used to determine compliance or noncompliance with the emission limitation contained in 326 IAC 7-1.1. Computation of calculated sulfur dioxide emission rates from fuel sampling and analysis based on the emission factors in U.S. EPA publication AP-42, "Compilation of Air Pollutant Emission Factors," unless other emission factors based on the site-specific sulfur dioxide measurement are approved by the commissioner. Fuel sampling and analysis data shall be collected as follows:

3. Condition D.1.7 (Testing Requirements for NO_x), on page 18 of 24 of the proposed permit has been changed from:

D.1.7 Testing Requirements for NO_x [326 IAC 2-1-3]

Compliance with the NO_x emission limits specified for the boilers identified as CSUP-1, CSUP-2 and CSUP-3 in Condition D.1.4 (a) and (b) shall be performed within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. The testing shall be performed using the method specified in 326 IAC 3-6 or as approved by the Commissioner. These tests shall be conducted in accordance with Section C - Performance Testing.

to be as follows, on page 18 of 25 of the final permit:

D.1.7 Testing Requirements for NO_x [326 IAC 2-1-3]

Compliance Testing shall be performed to determine compliance with the NO_x emission limits specified for the boilers identified as CSUP-1, CSUP-2 and CSUP-3 in Condition D.1.4 (a) and (b). **These tests** shall be performed within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. The testing shall be performed using the method specified in 326 IAC 3-6 or as approved by the Commissioner. These tests shall be conducted in accordance with Section C - Performance Testing.

4. Condition D.1.8 (Testing Requirements for Opacity), on page 19 of 24 of the proposed permit has been changed from:

D.1.8 Testing Requirements for Opacity [326 IAC 12] [40 CFR 60.45c(a)(7)]

(a) The owner or operator of the Boilers identified as CSUP-1, CSUP-2 and CSUP-3 subject to the opacity standards under § 60.43c shall conduct an initial performance test as required under § 60.8, and shall conduct subsequent performance tests, to determine compliance with the standards using the following procedures and reference methods.

- (1) Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions.

to be as follows, on page 19 of 25 of the final permit:

D.1.8 Testing Requirements for Opacity [326 IAC 12] [40 CFR 60.45c(a)(7)] [40 CFR 60.8]

- (a) **Within 60 days after achieving the maximum production rate at which the boilers identified as CSUP-1, CSUP-2 and CSUP-3 will be operated, but not later than 180 days after initial startup of the boilers and at such other times as may be required by the Commissioner under section 114 of the Act, the owner or operator of the boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall conduct performance test(s) and furnish the OAM a written report of the results of such performance test(s).**
- (b) **Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in § 60.45c (a) unless the Commissioner (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, (3) approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance, (4) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Commissioner's satisfaction that the boilers are in compliance with the standard, or (5) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph shall be construed to abrogate the Commissioner's authority to require testing under section 114 of the Act.**
- (c) **Performance tests shall be conducted under such conditions as the Commissioner shall specify to the plant operator based on representative performance of the boilers. The owner or operator shall make available to the Commissioner such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.**
- (d) **The owner or operator of the boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall provide the Commissioner at least 30 days prior notice of any performance test, to afford the Commissioner the opportunity to have an observer present.**
- (e) **The owner or operator of the boilers identified as CSUP-1, CSUP-2 and CSUP-3 shall provide, or cause to be provided, performance testing facilities as follows:**
- (1) **Sampling ports adequate for test methods applicable to such facility. This includes**
 - (i) **constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and**
 - (ii) **providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.**
 - (2) **Safe sampling platform(s).**
 - (3) **Safe access to sampling platform(s).**
 - (4) **Utilities for sampling and testing equipment.**

(f) Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Commissioner's approval, be determined using the arithmetic mean of the results of the two other runs.

(a) (g) The owner or operator of the Boilers identified as CSUP-1, CSUP-2 and CSUP-3 subject to the opacity standards under § 60.43c shall conduct an initial performance test as required ~~described as under § 60.8 (a) through (f), and shall conduct subsequent performance tests;~~ to determine compliance with the standards using the following procedures and reference methods.

(1) Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions.

5. Condition C.2 (Opacity), on page 9 of 25 of the final permit as follows:

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Visible Emissions Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), visible emissions from ~~the~~ boilers 8, 9, and 10 shall meet the following at all times of natural gas firing:

- (a) Visible emissions shall not exceed an average of **forty percent (40%)** ~~thirty percent (30%)~~ opacity in twenty-four (24) consecutive readings, as determined in 326 IAC 5-1-4.
- (b) Visible emissions shall not exceed sixty percent (60%) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) in a six (6) hour period.

6. Condition C.3 (Open Burning), on page 9 of 25 of the final permit as follows:

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

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. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. **The Permittee must comply with all applicable local ordinances for open burning.**

Mail to: Permit Administration & Development Section
Office Of Air Management
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015

and

Evansville EPA
101 N.W. Martin Luther King Jr. Boulevard, Room 250
Evansville, Indiana 47708

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

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make
these representations on behalf of _____.
(Company Name)

4. I hereby certify that Mead Johnson & Company, 2400 West Lloyd Expressway, Evansville, Indiana, 47721, has constructed the following:

- (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 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450° F, exhausting at one (1) stack identified as CSUP-S₁;
- (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 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450° F, exhausting at one (1) stack identified as CSUP-S₂;
- (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 million British thermal units per hour fired with natural gas, rated at 93.40 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 psig operating pressure and 400 to 450° F, exhausting at one (1) stack identified as CSUP-S₃;
- (d) One (1) diesel fuel oil fired emergency electric generator identified as CSUP-4, rated at 14.90 million British thermal units (mmBtu/hr) or capable of maximum 1,600 KW output, exhausting at one (1) stack identified as CSUP-S₄;
- (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° F.

in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on April 24, 1998, with additional information received on June 1, 1998, and as permitted pursuant to **Construction Permit No. CP-163-9713, Plant ID No. 163-00015** issued on _____

5. I hereby certify that Mead Johnson & Company is subject to the Title V program and has submitted a

Title V operating permit application (T163-7142-00015) on November 12, 1996. The equipment covered under this construction permit shall be incorporated in the submitted Title V permit application.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature

Date

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of
Indiana on this _____ day of _____, 19 _____.

My Commission expires: _____

Signature

Name (typed or printed)

Appendix A: Potential Emissions Calculations
Natural Gas & Fuel Oil No. 2 Combustion Only
10 < MM BTU/HR <100
Small Industrial Boiler (Boiler 8 # CSUP-1)

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 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 |
|--|---|---------------------------------|------------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.2 | 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 | 34.3 | 2.4 | 36.0 |
| Potential Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 32.7 | 0.6 | 14.6 |
| Worst Case Potential Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

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

Revised Appendix A: 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: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 1998

| Heat Input Capacity MMBtu/hr | Heat Input Capacity MMBtu/hr with no. 2 oil | Limited Throughput MMCF/yr | Limited Throughput kgals/year | S = Weight % Sulfur |
|---------------------------------|---|-------------------------------|----------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.0 | 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 | 34.3 | 2.4 | 36.0 |
| Limited Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 0.0 | 0.6 | 14.6 |
| Worst Case Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

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 (298.23 MMBtu/hr for existing boilers #3 through #6 and the basement boiler and 95 MMBtu/hr for proposed boiler #7)
 $Pt = 1.09 / (467.40)^{0.26} = 0.22 \text{ lb PM / MMBtu (allowable)}$
 = 21.58 lb PM / hour (equivalent allowable emissions)
 = 94.53 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:
 $0.5 \text{ lb/MMBtu} \times 140,000 \text{ Btu/gal} = 70 \text{ lb/1000 gal}$
 $70 \text{ lb/1000 gal} / 142 \text{ lb/1000 gal} = 0.49 \%$
 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: Potential Emissions Calculations
Natural Gas & Fuel Oil No. 2 Combustion Only
10 < MM BTU/HR <100
Small Industrial Boiler (Boiler 9 # CSUP-2)**

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 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 |
|--|---|---------------------------------|------------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.2 | 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 | 34.3 | 2.4 | 36.0 |
| Potential Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 32.7 | 0.6 | 14.6 |
| Worst Case Potential Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

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 = 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

**Appendix B: Emissions Calculations
Natural Gas Combustion Only
10 < MM BTU/HR <100
Small Industrial Boiler #9 (CSUP-2)**

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 1998

| Heat Input Capacity MMBtu/hr | Heat Input Capacity MMBtu/hr with no. 2 oil | Limited Throughput MMCF/yr | Limited Throughput kgals/year | S = Weight % Sulfur |
|---------------------------------|---|-------------------------------|----------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.0 | 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 | 34.3 | 2.4 | 36.0 |
| Limited Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 0.0 | 0.6 | 14.6 |
| Worst Case Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

Note:

* NOx emission factor based on manufacturer's guarantee of 0.08 lb/MMBtu for low NOx burner.
Fuel Oil No. 2 usage not limited. SO2 emissions are based on the 0.30% fuel sulfur content 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:

$$Pt = 1.09 / Q^{0.26}, \text{ where: } Pt = \text{allowable emission limit expressed as lb/MMBtu}$$

$$Q = \text{total source maximum heat input rate as MMBtu/hr (298.23 MMBtu/hr for existing boilers}$$

$$\#8 \text{ through \#10 and the basement boiler and } 95 \text{ MMBtu/hr for proposed boiler \#7)}$$

$$Pt = 1.09 / (467.40)^{0.26} = 0.22 \text{ lb PM / MMBtu (allowable)}$$

$$= 21.58 \text{ lb PM / hour (equivalent allowable emissions)}$$

$$= 94.53 \text{ ton PM / year (equivalent allowable emissions)}$$

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

| | | | | | |
|--------------------------------------|------|---------------|------|----------------------|---------------|
| Potential Limited PM emission rate = | 5.8 | 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/1000gal/ | 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 C: Potential Emissions Calculations
Natural Gas & Fuel Oil No. 2 Combustion Only
10 < MM BTU/HR <100
Small Industrial Boiler (Boiler 10 # CSUP-3)**

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 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 |
|--|---|---------------------------------|------------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.2 | 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 | 34.3 | 2.4 | 36.0 |
| Potential Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 32.7 | 0.6 | 14.6 |
| Worst Case Potential Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

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 = 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

**Appendix C: Emissions Calculations
Natural Gas Combustion Only
10 < MM BTU/HR <100
Small Industrial Boiler # 10 (CSUP-3)**

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 1998

| Heat Input Capacity MMBtu/hr | Heat Input Capacity MMBtu/hr with no. 2 oil | Limited Throughput MMCF/yr | Limited Throughput kgals/year | S = Weight % Sulfur |
|---------------------------------|---|-------------------------------|----------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.0 | 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 | 34.3 | 2.4 | 36.0 |
| Limited Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 0.0 | 0.6 | 14.6 |
| Worst Case Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

Note:

* NOx emission factor based on manufacturer's guarantee of 0.08 lb/MMBtu for low NOx burner.
 The fuel usage is not limited. The SO2 emissions are based on a sulfur content of 0.3% 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:

$$Pt = 1.09 / Q^{0.26}, \text{ where: } Pt = \text{allowable emission limit expressed as lb/MMBtu}$$

$$Q = \text{total source maximum heat input rate as MMBtu/hr (298.23 MMBtu/hr for existing boilers \#3 through \#6 and the basement boiler and 95 MMBtu/hr for proposed boiler \#7)}$$

$$Pt = 1.09 / (467.40)^{0.26} = 0.22 \text{ lb PM / MMBtu (allowable)}$$

$$= 21.58 \text{ lb PM / hour (equivalent allowable emissions)}$$

$$= 94.53 \text{ ton PM / year (equivalent allowable emissions)}$$

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

| | | | | | | |
|------------------------------|-------------|---------------|------|----------------------|------|----------|
| Potential PM emission rate = | 5.8 | 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:

$$0.5 \text{ lb/MMBtu} \times 140,000 \text{ Btu/gal} = 70 \text{ lb/1000 gal}$$

$$70 \text{ lb/1000 gal} / 142 \text{ lb/1000 gal} = 0.49 \%$$

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 D: Emission Calculations
Diesel fuel oil fired combustion
2,304 BHP output, 14.9 mmBtu/hr Heat input
Emergency Generator (ID# CSUP-4)

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 1998

| Heat Input Capacity MMBtu/hr | Output BHP |
|---------------------------------|---------------|
| 14.9 | 2304.0 |

| | Pollutant | | | | | |
|-------------------------------|-----------|-------------|------------|-------------|------------|------------|
| Emission Factor in lb/hr | PM 1.1 | PM10 0.9 | SO2 5.6 | NOx 62.3 | VOC 0.9 | CO 12.5 |
| Potential Emission in tons/yr | 0.3 | 0.2 | 1.4 | 15.6 | 0.2 | 3.1 |

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 E: Tank Emissions Calculation (CSUP-F1)

| | |
|--------------------------|---|
| Source Name: | Mead Johnson & Company |
| Source Location: | 2400 West Lloyd Expressway, Evansville, Indiana 47721 |
| County: | Vanderburgh |
| Construction Permit No.: | CP-163-9713-00015 |
| SIC Code: | 2834, 2099 |
| Permit Reviewer: | Manoj P. Patel |

Identification

| | |
|---------------------|------------------------|
| Identification No.: | CSUP-F1 |
| City: | Evansville |
| State: | IN |
| Company: | Mead Johnson & Company |
| Type of Tank: | Vertical Fixed Roof |
| Description: | Fixed Roof Dome Tank |

Tank Dimensions

| | |
|--------------------------|----------|
| Shell Height (ft): | 12.0 |
| Diameter (ft): | 12.0 |
| Liquid Height (ft): | 12.0 |
| Avg. Liquid Height (ft): | 10.0 |
| Volume (gallons): | 10153 |
| Turnovers: | 2082.0 |
| Net Throughput (gal/yr): | 17615802 |

Paint Characteristics

| | |
|--------------------|-------------|
| Shell Color/Shade: | Gray/Medium |
| Shell Condition: | Good |
| Roof Color/Shade: | White/White |
| Roof Condition: | Good |

Roof Characteristics

| | |
|----------------------------|--------|
| Type: | Dome |
| Height (ft): | 8.50 |
| Radius (ft) (Dome Roof): | 14.00 |
| Slope (ft/ft) (Cone Roof): | 0.0000 |

Breather Vent Settings

Vacuum Setting (psig): -0.03
 Pressure Setting (psig): 0.03

Meteorological Data Used in Emission Calculations: Evansville, Indiana (Avg Atmospheric Pressure = 14.7 psia)

| Mixture/Component | Daily Liquid Surf. | Liquid Bulk | | Vapor Liquid Vapor | | | Mol. Mass | Mass Fract. | Mol. Fract. | Basis for Vapor Pressure Calculations |
|---------------------------|--------------------|-------------|-------|--------------------|-------|--------------------------------|-----------|-------------|-------------|---------------------------------------|
| | | Month | Avg. | Min. | Max. | Vapor Pressures (psia) (deg F) | | | | |
| Distillate fuel oil no. 2 | All | 60.80 | 53.25 | 68.35 | 57.25 | 0.0067 | 0.0052 | 0.0085 | 130.000 | 188.00 Option 3: A=12.1010, B=8907.0 |

Annual Emission Calculations

Standing Losses (lb): 0.9298
 Vapor Space Volume (cu ft): 303.88
 Vapor Density (lb/cu ft): 0.0002
 Vapor Space Expansion Factor: 0.054167
 Vented Vapor Saturation Factor: 0.999053

Tank Vapor Space Volume

Vapor Space Volume (cu ft): 303.88
 Tank Diameter (ft): 12.0
 Vapor Space Outage (ft): 2.69
 Tank Shell Height (ft): 12.0
 Average Liquid Height (ft): 10.0
 Roof Outage (ft): 0.69

Roof Outage (Dome Roof)

Roof Outage (ft): 0.69
 Dome Radius (ft): 14
 Shell Radius (ft): 6.0

Vapor Density

| | |
|---|------------|
| Vapor Density (lb/cu ft): | 0.0002 |
| Vapor Molecular Weight (lb/lb-mole): | 130.000000 |
| Vapor Pressure at Daily Average Liquid Surface Temperature (psia): | 0.006655 |
| Daily Avg. Liquid Surface Temp.(deg. R): | 520.47 |
| Daily Average Ambient Temp. (deg. R): | 515.37 |
| Ideal Gas Constant R (psia cuft /(lb-mole-deg R)): | 10.731 |
| Liquid Bulk Temperature (deg. R): | 516.92 |
| Tank Paint Solar Absorptance (Shell): | 0.43 |
| Tank Paint Solar Absorptance (Roof): | 0.17 |
| Daily Total Solar Insolation Factor (Btu/sqft! day): | 1261.00 |

Vapor Space Expansion Factor

| | |
|---|----------|
| Vapor Space Expansion Factor: | 0.054167 |
| Daily Vapor Temperature Range (deg.R): | 30.20 |
| Daily Vapor Pressure Range (psia): | 0.003327 |
| Breather Vent Press. Setting Range(psia): | 0.06 |
| Vapor Pressure at Daily Average Liquid Surface Temperature (psia): | 0.006655 |
| Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia): | 0.005173 |
| Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): | 0.008500 |
| Daily Avg. Liquid Surface Temp. (deg R): | 520.47 |
| Daily Min. Liquid Surface Temp. (deg R): | 512.92 |
| Daily Max. Liquid Surface Temp. (deg R): | 528.02 |
| Daily Ambient Temp. Range (deg.R): | 21.10 |

Annual Emission Calculations

| | |
|---|----------|
| Vented Vapor Saturation Factor | |
| Vented Vapor Saturation Factor: | 0.999053 |
| Vapor Pressure at Daily Average Liquid Surface Temperature (psia): | 0.006655 |

| | |
|---|----------|
| Vapor Space Outage (ft): | 2.69 |
| Working Losses (lb): | 66.7524 |
| Vapor Molecular Weight (lb/lb-mole): | 130.0 |
| Vapor Pressure at Daily Average Liquid Surface Temperature (psia): | 0.006655 |
| Annual Net Throughput (gal/yr): | 17615802 |
| Turnover Factor: | 0.1840 |
| Maximum Liquid Volume (cuft): | 1357 |
| Maximum Liquid Height (ft): | 12.0 |
| Tank Diameter (ft): | 12.0 |
| Working Loss Product Factor: | 1.00 |
| Total Losses (lb): | 67.68 |

Annual Emissions Report

| Liquid Contents | Losses (lbs.): | | Total |
|---------------------------|----------------|---------|-------|
| | Standing | Working | |
| Distillate fuel oil no. 2 | 0.93 | 66.75 | 67.68 |
| Total: | 0.93 | 66.75 | 67.68 |

Appendix F: Emissions Calculations

| | |
|--------------------------|---|
| Source Name: | Mead Johnson & Company |
| Source Location: | 2400 West Lloyd Expressway, Evansville, Indiana 47721 |
| County: | Vanderburgh |
| Construction Permit No.: | CP-163-9713-00015 |
| SIC Code: | 2834, 2099 |
| Permit Reviewer: | Manoj P. Patel |

(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 NO_x, CO and SO₂ 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.

Appendix G: Emission Calculations
Diesel fuel oil fired combustion
2,304 BHP output, 14.9 mmBtu/hr Heat input
Limited Emissions for Emergency Generator (ID# CSUP-4)

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 1998

| Heat Input Capacity MMBtu/hr | Output BHP |
|---------------------------------|---------------|
| 14.9 | 2304.0 |

| Emission Factor in lb/hr | Pollutant | | | | | |
|-----------------------------|-----------|------|-----|------|-----|------|
| | PM | PM10 | SO2 | NOx | VOC | CO |
| | 1.1 | 0.9 | 5.6 | 62.3 | 0.9 | 12.5 |
| Limited Emission in tons/yr | 0.3 | 0.2 | 1.3 | 14.0 | 0.2 | 2.8 |

Methodology

Emission Factors are provided by the source based on the Manufacturer design specifications.
Emission Factors are in lbs. per hour
Limited Emissions are based on the 450 hours per year of operation of the process.
Limited Emissions =(e.f. in lb./hr) * (450 hrs/year) * (1 ton / 2000 lbs.)
Limited Emissions are based on the an enforceable limit of 48,780 gal diesel fuel oil/year.

Appendix A: Potential Emissions Calculations
Natural Gas & Fuel Oil No. 2 Combustion Only
10 < MM BTU/HR <100
Small Industrial Boiler (Boiler 8 # CSUP-1)

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 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 |
|--|---|---------------------------------|------------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.2 | 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 | 34.3 | 2.4 | 36.0 |
| Potential Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 32.7 | 0.6 | 14.6 |
| Worst Case Potential Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

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: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 1998

| Heat Input Capacity MMBtu/hr | Heat Input Capacity MMBtu/hr with no. 2 oil | Limited Throughput MMCF/yr | Limited Throughput kgals/year | S = Weight % Sulfur |
|---------------------------------|---|-------------------------------|----------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.0 | 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 | 34.3 | 2.4 | 36.0 |
| Limited Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 0.0 | 0.6 | 14.6 |
| Worst Case Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

Note:

* NOx emission factor based on manufacturer's guarantee of 0.08 lb/MMBtu for low NOx burner.
 Limited emissions are based on a No. 2 fuel oil usage limitation of 1,690,000 gallons per year, and a sulfur content limit of 0.3% 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:

$$Pt = 1.09 / Q^{0.26}, \text{ where: } Pt = \text{allowable emission limit expressed as lb/MMBtu}$$

$$Q = \text{total source maximum heat input rate as MMBtu/hr (298.23 MMBtu/hr for existing boilers}$$

$$\#3 \text{ through \#6 and the basement boiler and 95 MMBtu/hr for proposed boiler \#7)}$$

$$Pt = 1.09 / (467.40)^{0.26} = 0.22 \text{ lb PM / MMBtu (allowable)}$$

$$= 21.58 \text{ lb PM / hour (equivalent allowable emissions)}$$

$$= 94.53 \text{ ton PM / year (equivalent allowable emissions)}$$

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/1000gal/ | 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: Potential Emissions Calculations
Natural Gas & Fuel Oil No. 2 Combustion Only
10 < MM BTU/HR <100
Small Industrial Boiler (Boiler 9 # CSUP-2)

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 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 |
|--|---|---------------------------------|------------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.2 | 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 | 34.3 | 2.4 | 36.0 |
| Potential Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 32.7 | 0.6 | 14.6 |
| Worst Case Potential Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

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 = 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

**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: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 1998

| Heat Input Capacity MMBtu/hr | Heat Input Capacity MMBtu/hr with no. 2 oil | Limited Throughput MMCF/yr | Limited Throughput kgals/year | S = Weight % Sulfur |
|---------------------------------|---|-------------------------------|----------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.0 | 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 | 34.3 | 2.4 | 36.0 |
| Limited Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 0.0 | 0.6 | 14.6 |
| Worst Case Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

Note:

* NOx emission factor based on manufacturer's guarantee of 0.08 lb/MMBtu for low NOx burner.
 Limited emissions are based on a No. 2 fuel oil usage limitation of 1,690,000 gallons per year, and a sulfur content limit of 0.3% 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:

$$Pt = 1.09 / Q^{0.26}, \text{ where: } Pt = \text{allowable emission limit expressed as lb/MMBtu}$$

$$Q = \text{total source maximum heat input rate as MMBtu/hr (298.23 MMBtu/hr for existing boilers}$$

$$\#8 \text{ through \#10 and the basement boiler and } 95 \text{ MMBtu/hr for proposed boiler \#7})$$

$$Pt = 1.09 / (467.40)^{0.26} = 0.22 \text{ lb PM / MMBtu (allowable)}$$

$$= 21.58 \text{ lb PM / hour (equivalent allowable emissions)}$$

$$= 94.53 \text{ ton PM / year (equivalent allowable emissions)}$$

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

| | | | | | |
|--------------------------------------|------|---------------|------|----------------------|---------------|
| Potential Limited PM emission rate = | 5.8 | 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/1000gal/ | 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 C: Potential Emissions Calculations
Natural Gas & Fuel Oil No. 2 Combustion Only
10 < MM BTU/HR <100
Small Industrial Boiler (Boiler 10 # CSUP-3)

Company Name: Mead Johnson & Company
Address City IN Zip: 2400 West Lloyd Expressway, Evansville, Indiana 47721
CP: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 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 |
|--|---|---------------------------------|------------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.2 | 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 | 34.3 | 2.4 | 36.0 |
| Potential Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 32.7 | 0.6 | 14.6 |
| Worst Case Potential Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

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 = 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

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: 163-9713
Plt ID: 163-00015
Reviewer: Manoj P. Patel
Date: May 20, 1998

| Heat Input Capacity MMBtu/hr | Heat Input Capacity MMBtu/hr with no. 2 oil | Limited Throughput MMCF/yr | Limited Throughput kgals/year | S = Weight % Sulfur |
|---------------------------------|---|-------------------------------|----------------------------------|---------------------|
| 97.9 | 93.4 | 857.6 | 5844.0 | 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 | 34.3 | 2.4 | 36.0 |
| Limited Emissions burning No. 2 fuel oil, tons/yr | 5.8 | 2.9 | 124.5 | 0.0 | 0.6 | 14.6 |
| Worst Case Emissions, tons/yr | 5.8 | 3.3 | 124.5 | 34.3 | 2.4 | 36.0 |

Note:

* NOx emission factor based on manufacturer's guarantee of 0.08 lb/MMBtu for low NOx burner.
 Limited emissions are based on a No. 2 fuel oil usage limitation of 1,690,000 gallons per year, and a sulfur content limit of 0.3% 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:

$$Pt = 1.09 / Q^{0.26}, \text{ where: } Pt = \text{allowable emission limit expressed as lb/MMBtu}$$

$$Q = \text{total source maximum heat input rate as MMBtu/hr (298.23 MMBtu/hr for existing boilers}$$

$$\#3 \text{ through \#6 and the basement boiler and 95 MMBtu/hr for proposed boiler \#7)}$$

$$Pt = 1.09 / (467.40)^{0.26} = 0.22 \text{ lb PM / MMBtu (allowable)}$$

$$= 21.58 \text{ lb PM / hour (equivalent allowable emissions)}$$

$$= 94.53 \text{ ton PM / year (equivalent allowable emissions)}$$

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

| | | | | | | |
|------------------------------|-------------|---------------|------|----------------------|------|----------|
| Potential PM emission rate = | 5.8 | 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/1000gal/ | 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.