

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Lehigh Portland Cement Company
121 North First Street
Mitchell, Indiana 47446**

(herein known as the Permittee) is hereby authorized to construct the facilities listed in Section A (Source Summary) of this permit.

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

Construction Permit No.: CP-093-4598-00002	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

SECTION A SOURCE SUMMARY

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

A.1 General Information [326 IAC 2-7-4(c)]

The Permittee owns and operates a portland cement manufacturing plant.

Responsible Official: Edward E. Epping
Source Address: 121 North First Street, Mitchell, Indiana 47446-0097
Mailing Address: 121 North First Street, Mitchell, Indiana 47446-0097
SIC Code: 3241
County Location: Lawrence
County Status: Attainment for all criteria pollutants

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]

This source modification for Lehigh Portland Cement Company, relates to the construction and operation of:

- (a) one (1) waste tire injection system for existing Kiln No. 1 to accommodate the use of whole waste tires as a supplemental fuel at a maximum heat input rate of 22 percent. Particulate matter emissions shall be controlled by one (1) existing electrostatic precipitator that exhausts to Stack S-KP1;
- (b) one (1) waste tire injection system for existing Kiln No. 2 to accommodate the use of whole waste tires as a supplemental fuel at a maximum heat input rate of 22 percent. Particulate matter emissions shall be controlled by one (1) existing electrostatic precipitator that exhausts to Stack S-KP1; and
- (c) one (1) waste tire injection system for existing Kiln No. 3 to accommodate the use of whole waste tires as a supplemental fuel at a maximum heat input rate of 26 percent. Particulate matter emissions shall be controlled by one (1) existing electrostatic precipitator, that exhausts to Stack S-KP2.

Section B Construction Conditions

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 result in an increase in allowable emissions, the change must be approved by IDEM, 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.
- (c) Notwithstanding Construction Condition B.4, 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).
- (d) When the facility is constructed and placed into operation, the operation conditions required by Section C and Section D shall be met.

B.2 Effective Date of the Permit

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance, unless a petition for a stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Permit Revocation

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 First Time Operation Permit

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:

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

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, OAM.

- (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

- (c) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
- (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1-7.1(Fees).
- (e) The Permittee has submitted their Part 70 permit application (T-093-5990-00002) on May 31, 1996 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 permit application.

B.5 Phase Construction Time Frame

Pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), IDEM, OAM may revoke this permit to construct if the:

- (a) Construction of Phase 1 (waste tire injection system for Kiln No. 3 only) has not begun within eighteen (18) months from the date of the effective date of this permit or if during the construction of Phase 1, work is suspended for a continuous period of one (1) year or more.
- (b) Construction of Phase 2 (waste tire injection systems for Kiln No. 1 and Kiln No. 2) has not begun within eighteen (18) months after the operation of Phase 1 or if during the construction of Phase 2, work is suspended for a continuous period of one (1) year or more.

IDEM, OAM may extend such time upon satisfactory showing that an extension, formally requested by the Permittee is justified.

B.6 NSPS Reporting Requirement

Pursuant to the New Source Performance Standards (NSPS), Part 60.7, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times for Kiln No. 3. Pursuant to 40 CFR 60.14 (Modification), Kiln No. 1 and/or Kiln No. 2 shall be subject to this requirement to report the following at the appropriate times if the stack tests demonstrate an increase in the particulate matter emission rate from the combustion of waste tires:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- (c) Actual start-up date (within 15 days after such date); and
- (d) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

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

The application and enforcement of these standards have been delegated to IDEM, OAM. The requirements of 40 CFR Part 60 are also federally enforceable.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

General Conditions:

C.1 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 IDEM, 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 (IC 13-17) and the rules promulgated thereunder.

C.2 Transfer of Permit

Pursuant to 326 IAC 2-1-6 (Transfer of Permits), the following requirements shall apply:

- (a) In the event that ownership of this cement manufacturing facility is changed, the Permittee shall notify:
- Indiana Department of Environmental Management
Permits Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015
- within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
- (b) A written notification shall be sufficient to transfer the permit from the current owner to the new owner.
- (c) IDEM, OAM shall reserve the right to issue a new permit.

C.3 Permit Revocation

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; or
- (e) for any cause which establishes in the judgment of IDEM, OAM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

C.4 Availability of Permit

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

C.5 Open Burning

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

C.6 Emergency Reduction Plans

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

- (a) The Permittee shall prepare written Emergency Reduction Plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

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

within ninety (90) calendar days from the date on which this source commences operation.

- (c) If the ERP is disapproved by IDEM, OAM the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM shall supply such a plan.
- (d) 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.
- (e) 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.
- (f) Upon direct notification by IDEM, OAM 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 level. [326 IAC 1-5-3]

C.7 Preventive Maintenance Plan

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; and
- (c) identification of the replacement parts which will be maintained in inventory for quick replacement.

Preventive Maintenance Plans must be approved by IDEM, OAM and shall be submitted with the stack test protocol required by Operation Conditions D.1.5, D.2.5, and D.3.5 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

at least thirty-five (35) days before the intended test date.

C.8 Compliance Monitoring Plan - Failure to Take Response Steps

- (a) Pursuant to 326 IAC 2-1-3(j), the Permittee shall implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:
 - (1) This Condition;
 - (2) The Compliance Determination Requirements in Section D of this permit;
 - (3) The Compliance Monitoring Requirements in Section D of this permit;
 - (4) The Record Keeping and Reporting Requirements in Section C and in Section D of this permit; and
 - (5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAM upon request and shall be subject to review and approval by IDEM, OAM. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of:
 - (A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and
 - (B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.
- (b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the

response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.

- (c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:
- (1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment; and
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied; or
 - (3) An automatic measurement was taken when the process was not operating; or
 - (4) The process has already returned to operating within "normal" parameters and no response steps are required.
- (d) Records and reports shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency or upset, the provisions of 326 IAC 1-6 requiring prompt corrective action to mitigate emissions shall apply.

C.9 Malfunction Condition

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (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 IDEM, 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, 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. All malfunctions shall be reported quarterly to IDEM, OAM, using the attached Malfunction Report Forms (2 pages).
- (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]

Emission Limitations and Standards:

C.10 Emission Limitation

To demonstrate the PSD rules do not apply pursuant to 326 IAC 2-2, the combined net emissions increase from Kiln No. 1, Kiln No. 2, and Kiln No. 3 resulting from burning tires shall not exceed any of the following limitations during the combustion of waste tires as a supplemental fuel:

- (a) particulate matter (PM) emissions shall not equal or exceed 5.71 pounds per hour;
- (b) particulate matter emissions less than ten microns in diameter (PM10) shall not equal or exceed 3.42 pounds per hour;
- (c) oxides of nitrogen (NOx) emissions shall not equal or exceed 9.13 pounds per hour;
- (d) sulfur dioxide (SO₂) emissions shall not equal or exceed 9.13 pounds per hour;
- (e) volatile organic compound (VOC) emissions shall not equal or exceed 9.13 pounds per hour;
- (f) carbon monoxide (CO) emissions shall not equal or exceed 22.8 pounds per hour; and
- (g) lead (Pb) emissions shall not equal or exceed 0.137 pounds per hour.

C.11 Solid Waste Permit

The Permittee shall not accumulate waste tires at a single outdoor location over the amount specified in 329 IAC 12 without receiving the proper approval from the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management. All other waste tires on-site shall be stored in covered trucks that are permitted to transport waste tires.

C.12 Fugitive Dust Emissions Limitation

Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM, OAM. [326 IAC 6-4-5(c)]

Compliance Determination and Monitoring:

C.13 Waste Tire Storage Monitoring

Pursuant to 326 IAC 2-1-3(i)(8) and 329 IAC 2, the Permittee shall maintain daily records of the following information on waste tire storage to demonstrate compliance with the limitations required by Operation Condition C.11:

- (a) daily records on the weight of waste tires delivered to the site;
- (b) daily records on the total weight of waste tires stored on the site; and

- (c) daily records on the total weight of waste tires combusted by Kiln No. 1, Kiln No. 2, and Kiln No. 3.

C.14 Visible Emission Determination

Pursuant to 326 IAC 5, 326 IAC 6, and 326 IAC 12, visible emissions from the source shall be measured using one or both of the following procedures to demonstrate compliance with the opacity limitations:

- (a) visible emissions observations performed in accordance with the applicable procedures under 326 IAC 5-1-4 and 40 CFR 60, Appendix A, Method 9; or
- (b) continuous opacity monitoring data recorded in accordance with the applicable procedures under 40 CFR 60, Appendix B, Performance Specification 1 and 326 IAC 3-1.1.

A violation determined by one of the above methods shall not be refuted by the other method.

Recordkeeping and Reporting Requirements:

C.15 Emission Reporting Requirement

Pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee shall annually submit an emission statement of the source. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8) (Emission Statement Operating Year). The annual statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015.

The annual emission statement required by this permit shall be considered timely if:

- (a) delivered by U.S. mail and postmarked on or before the date it is due; or
- (b) delivered by any other method if it is received and stamped by IDEM, OAM on or before the date it is due.

C.16 Recordkeeping Requirement

The Permittee shall maintain a log of information necessary to document compliance:

- (a) The Permittee shall meet the following time lines for recordkeeping requirements:
 - (1) daily records of the parameters established in Operation Condition C.13 shall be maintained for a minimum of 36 months to show compliance with the limitation required by Operation Condition C.11;

- (2) records of all instances in which the compliance related information was not met and of all response steps taken shall be maintained in accordance with Operation Condition No. C.8 for a minimum of 24 months; and
- (3) records of all malfunctions shall be maintained in accordance with Operation Condition No. C.9 for a minimum of 24 months.

These records shall be kept at the source location and available within one (1) hour upon verbal request of an IDEM, OAM representative.

(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; and
- (4) records of any required preventive maintenance and corrective actions that were implemented. Such records shall briefly describe what was done and indicate who did it. Such records may include, but are not limited to work orders, quality assurance procedures, quality control procedures, operator's standard operating procedures, manufacturer's specifications or their equivalent, and equipment "troubleshooting" guidance.

C.17 Reporting Requirement

The Permittee shall submit quarterly summary reports of all malfunctions as required by Operation Condition C.9(b) and the waste tire monitoring parameters described in Operation Condition C.13:

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

within thirty (30) days following the end of each calendar quarter.

Lehigh Portland Cement Company
Mitchell, Indiana
Permit Reviewer: mmw

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**SECTION D.1 FACILITY OPERATION CONDITIONS
FOR TIRE INJECTION SYSTEM FOR KILN NO. 1**

One (1) waste tire injection system to existing Kiln No. 1 to accommodate the use of whole waste tires as a supplemental fuel at a maximum heat input rate of 22 percent. Particulate matter emissions shall be controlled by one (1) existing electrostatic precipitator that exhausts to Stack S-KP1.

Emission Limitations and Standards:

D.1.1 Particulate Matter Emissions Limitation

- (a) Pursuant to 326 IAC 5-1-2 (Visible Emission Limitations), Stack S-KP1 of Kiln No. 1 shall comply with the following limitations:
- (1) visible emissions shall not exceed an average of 40% opacity in any 24 consecutive readings; and
 - (2) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in any 6-hour period.
- (b) Pursuant to 326 IAC 12 and 40 CFR 60.14 (Modification), any increase in the particulate matter emission rate (defined in Operation Condition D.1.5(e)) from the combustion of waste tires as a supplemental fuel in Kiln No. 1 shall cause Kiln No. 1 to comply with the requirements of 326 IAC 12 and 40 CFR 60.60 to 60.66 (New Source Performance Standards for Portland Cement Manufacturing Plants) including but not limited to the following limitations:
- (1) particulate matter (PM) emissions shall not exceed 0.3 pounds per ton of feed which satisfies the requirements of 326 IAC 6-3-2(a); and
 - (2) opacity shall not exceed an average of 20 percent in any 24 consecutive observations recorded at 15 second intervals in accordance with the applicable procedures under 326 IAC 5-1-4 and 40 CFR 60, Appendix A, Method 9. This limitation satisfies the requirements of 326 IAC 5-1-2 (Visible Emission Limitations).

D.1.2 Sulfur Dioxide Emissions Limitation

Pursuant to 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations), the sulfur dioxide (SO₂) emissions from Stack S-KP1 of Kiln No. 1 shall not exceed 6.0 pounds per MMBtu.

D.1.3 Dioxin/Furan Emission Limitation

- (a) Pursuant to 326 IAC 2-1-3(i)(8), the dioxin/furan emissions, during the combustion of waste tires as a supplemental fuel, shall not exceed 8.7×10^{-11} grains of 2,3,7,8-tetrachlorodibenzo-p-dioxin equivalents per dry standard cubic feet (gr TEQ/dscf) corrected at 7 percent oxygen unless:
- (1) the dioxin/furan stack test shows a higher result; and

- (2) the stack test, or subsequent test shows that the temperature at the inlet of the control device is less than 400 degrees Fahrenheit and does not exceed 1.7×10^{-10} gr TEQ/dscf corrected at 7 percent oxygen.

The compliance stack tests required by Operation Condition D.1.5 shall establish which of these limits is appropriate.

- (b) The Permittee shall comply with the dioxin/furan emission limitation required by the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Portland Cement Manufacturing Plants (40 CFR 63 and 326 IAC 20) upon promulgation. This rule shall supersede the dioxin/furan emission limitation required by (a) above.

D.1.4 Operation Standards

Kiln No. 1 shall comply with the following limitations to demonstrate that the PSD rules do not apply pursuant to 326 IAC 2-2 during the combustion of waste tires as a supplemental fuel:

- (a) the temperature in the burning zone of Kiln No. 1 shall be operated at a minimum temperature of 1,800 degrees Fahrenheit;
- (b) maintain the kiln back end oxygen concentration within a range of 0.75 percent to 3 percent under normal operating conditions;
- (c) the input of waste tires as a fuel source shall only be conducted in a kiln that is manufacturing product;
- (d) the weight waste tires utilized as a fuel source for Kiln No. 1 shall be limited to 27 tons per day;
- (e) the number of waste tires, measured as passenger tire equivalents (PTEs), injected into Kiln No. 1 shall be limited to 2160 PTEs per day; and
- (f) the heat input capacity, in MMBtu, derived from the combustion of waste tires in Kiln No. 1 shall not exceed 22 percent.

Compliance Determination, PSD and NSPS Applicability, and Monitoring:

D.1.5 Initial Performance Testing

Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements), initial compliance tests of Stack S-KP1 from the Kiln No. 1 operations shall be performed.

- (a) Compliance tests shall be conducted when the kiln is utilizing 100 percent coal. The compliance tests shall be performed for the pollutants stated in (a)(1) of this condition to demonstrate compliance with the limitations required by Operation Conditions C.10, D.1.1, and D.1.2, to establish whether PSD or NSPS requirements are applicable, and to obtain information to ensure public health is protected. The tests shall be performed for the pollutants stated in (a)(2) of this condition to obtain information to ensure public health is protected.

- (1) Opacity, PM, PM₁₀, SO₂, NO_x, VOC, CO, Pb, and dioxin/furan.

- (2) Benzene, toluene, ethylbenzene, xylenes, styrene, methylene chloride, total hydrocarbons, antimony, arsenic, beryllium, cadmium, hexavalent chromium, cobalt, manganese, mercury, nickel, selenium, and zinc.
- (b) Compliance tests shall be conducted when the kiln is utilizing a fuel combination of coal and whole waste tires. The compliance tests shall be performed for the pollutants stated in (b)(1) of this condition to demonstrate compliance with the limitations required by Operation Conditions C.10, D.1.1, D.1.2, and D.1.3, to establish whether PSD or NSPS requirements are applicable, and to obtain information to ensure public health is protected. The tests shall be performed for the pollutants stated in (b)(2) of this condition to obtain information to ensure public health is protected.
 - (1) Opacity, PM, PM₁₀, SO₂, NO_x, VOC, CO, Pb, and dioxin/furan.
 - (2) Benzene, toluene, ethylbenzene, xylenes, styrene, methylene chloride, total hydrocarbons, antimony, arsenic, beryllium, cadmium, hexavalent chromium, cobalt, manganese, mercury, nickel, selenium, and zinc.
- (c) In addition to the compliance tests required by (a) and (b), the following observations and recordkeeping requirements shall be performed:
 - (1) either EPA Method 9 opacity tests or certified continuous opacity monitoring (COM) data shall be performed concurrently with the particulate matter compliance tests for Kiln No. 1 unless meteorological conditions require rescheduling the opacity tests to another date;
 - (2) the kiln temperature and oxygen concentration shall be measured and recorded during each performance testing session;
 - (3) the clinker production rate shall be measured and recorded during each performance testing session. Kiln No. 1 must be operating at 95 percent of its maximum production capacity or more during the performance testing session to be considered a valid test;
 - (4) the weight of whole waste tires added to the kiln during the performance testing session for the combustion of coal and whole waste tires stated in (b) above shall be measured and recorded. The weight of the whole waste tires shall be used to calculate the heat input from the whole waste tires. The heat input from the whole waste tires during this performance testing session must be at least 95 percent of the maximum capacity allowed by Operation Condition D.1.4(f); and
 - (5) the temperature at the inlet of the electrostatic precipitator unit shall be measured and recorded during the dioxin/furan compliance tests for combustion of coal and whole waste tires stated in (b) above.
- (d) The Permittee shall be subject to the PSD requirements (326 IAC 2-2) whenever the combined net emissions increase from the Kiln No. 1, Kiln No. 2 and Kiln No. 3 operations exceed any of the limitations required by Operation Condition C.10. The "net emissions increase" is defined in 326 IAC 2-2 as any increase in actual emissions from a particular physical change or change in the method of operation at a source. To determine PSD applicability for this modification, the net emissions increase is the increase in actual

emissions from the kilns utilizing 100% coal to the kilns utilizing a combination of coal and whole waste tires. The increase in actual emissions for each pollutant stated in Operation Condition C.10 shall be calculated by subtracting the coal combustion emissions of all three kilns from the coal/tire combustion emissions of all three kilns. The emissions from coal combustion and coal/tire combustion shall be determined from the compliance test results.

- (e) Kiln No. 1 shall be subject to the NSPS requirements (326 IAC 12 and 40 CFR 60.62) whenever a modification occurs. A "modification" is defined in 40 CFR 60.14 as any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere any pollutant to which a standard applies. The "increase in the emission rate" under NSPS regulations shall be calculated by comparing the hourly emission rate, at maximum physical capacity, before and after the physical or operational change. Any increase in the particulate matter emission rate from the coal combustion practices to the tire/coal combustion practices shall require Kiln No. 1 to comply with the NSPS regulations.
- (f) The Kiln No. 1 compliance tests, for both the utilization of 100 percent coal and the utilization of a fuel combination of coal and whole waste tires, shall be performed no later than the 30th day that the kiln actually burns waste tires or no later than 180 days after the 1st use of waste tires as a supplemental fuel, whichever is earlier.
- (g) All compliance tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.

- (1) A test protocol 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

at least thirty-five (35) days before the intended test date. The Permittee shall develop and submit with the protocol for approval by IDEM, OAM, standard operating procedures to be followed during sampling, handling, analysis, quality control, quality assurance, and data reporting.

- (2) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date. [326 IAC 3-2.1-2]
- (3) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing. [326 IAC 3-2.1-4]
- (4) When the results of a compliance test performed exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. Corrective actions may include cessation of whole waste tire burning within seven (7) days. 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 tests.

- (5) Whenever the results of a compliance test performed exceed the level specified in any condition of this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.
- (h) IDEM, OAM retains the authority under 326 IAC 2-1-4(f) to require the Permittee to perform additional and future compliance testing as necessary.

D.1.6 Performance Testing

Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements), the following compliance tests shall be performed in addition to the initial compliance tests required by Operation Condition D.1.5:

- (a) Compliance tests shall be performed on Stack S-KP1 from the Kiln No. 1 operations every 2 ½ years for opacity, particulate matter, and dioxin/furan emissions to demonstrate compliance with the limitations required by Operation Conditions D.1.1, D.1.2 and D.1.3.
- (b) In addition to the compliance tests, the following observations and recordkeeping requirements shall be performed:
 - (1) either EPA Method 9 opacity tests or certified continuous opacity monitoring (COM) data shall be performed concurrently with the particulate matter compliance tests for Kiln No. 1 unless meteorological conditions require rescheduling the opacity tests to another date;
 - (2) the kiln temperature and oxygen concentration shall be measured and recorded during each performance testing session;
 - (3) the clinker production rate shall be measured and recorded during each performance testing session. Kiln No. 1 must be operating at 95 percent of its maximum production capacity or more during the performance testing session to be considered a valid test;
 - (4) the weight of whole waste tires added to the kiln during the performance testing session for the combustion of coal and whole waste tires stated in (b) above shall be measured and recorded. The weight of the whole waste tires shall be used to calculate the heat input from the whole waste tires. The heat input from the whole waste tires during this performance testing session must be at least 95 percent of the maximum capacity allowed by Operation Condition D.1.4(f); and
 - (5) the temperature at the inlet of the electrostatic precipitator unit shall be measured and recorded during the dioxin/furan compliance tests.

- (c) The compliance tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.
- (1) A test protocol 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
- at least thirty-five (35) days before the intended test date. The Permittee shall develop and submit with the protocol for approval by IDEM, OAM, standard operating procedures to be followed during sampling, handling, analysis, quality control, quality assurance, and data reporting.
- (2) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date. [326 IAC 3-2.1-2]
- (3) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing. [326 IAC 3-2.1-4]
- (4) When the results of a compliance test performed exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. Corrective actions may include cessation of tire burning within seven (7) days. The Permittee shall submit a description of these corrective actions to 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. 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 OAM within thirty (30) days of receipt of the notice of deficiency. OAM reserves the authority to use enforcement activities to resolve noncompliant tests.
- (5) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.
- (d) The OAM retains the authority under 326 IAC 2-1-4(f) to require the Permittee to perform additional and future compliance testing as necessary.

D.1.7 Continuous Emissions Monitoring

Pursuant to 326 IAC 2, the Permittee shall continuously monitor and record the following parameters from Kiln No. 1 to demonstrate compliance with the limitations and operation standards required by Operation Conditions D.1.1, D.1.4(a), and D.1.4(b):

- (a) opacity;
- (b) temperature in the burning zone of Kiln No. 1; and
- (c) oxygen concentration at the back end of Kiln No. 1.

The continuous monitoring systems shall be installed and operational prior to conducting the performance tests. A monitoring protocol shall be performed in accordance with the applicable procedures under 40 CFR 60, Appendix B, Performance Specification 1 and 326 IAC 3-1.1 and 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

within 60 days after achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup of the combustion of waste tires in Kiln No. 1. Verification of operational status shall, as a minimum, include completion of the manufacturer written requirements or recommendations for installation, operation, and calibration of the device.

D.1.8 NSPS Compliance

Pursuant to 326 IAC 12 and 40 CFR 60, Subpart F, the Permittee shall maintain daily records of the following parameters for Kiln No. 1, if applicable, to demonstrate compliance with the PM and opacity limitations required by Operation Condition D.1.1(b):

- (a) clinker production rate; and
- (b) kiln feed rates.

D.1.9 Electrostatic (ESP) Operating Condition

The electrostatic precipitator (ESP) of Kiln No. 1 shall be operated at all times when the kiln is in operation.

- (a) The Permittee shall maintain, monitor and record the primary and secondary amperage and T-R set voltage of each ESP at a level demonstrated by a compliant performance test, at least once per day. If the voltage of the T-R set drops five (5) direct current (DC) kilovolts or thirty (30) alternating current (AC) volts below this pre-determined baseline or if less than 90% of the total T-R sets are functioning, corrective action shall be taken in accordance with the Permittee's Preventive Maintenance Plan. The company shall document the cause of the out-of-range reading and take immediate action to correct any problem. Failure or partial failure of the control device shall be reported to IDEM, OAM according to the procedure specified for malfunctions in 326 IAC 1-6-2, in which case the provisions of 326 IAC 1-6-5 may apply at the discretion of IDEM, OAM.
- (b) The instrument used for determining the T-R set voltage shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.
- (c) An inspection of each ESP shall be performed a minimum of two (2) times per year. A record shall be kept of the results of the inspection and the number of ESP part(s) replaced.
- (d) In the event that an ESP failure has been observed:
 - (1) The affected process will be shut down immediately until the failed unit has been replaced.

- (2) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

D.1.10 Sulfur Dioxide Compliance

Pursuant to 326 IAC 7-1.1-2, the Permittee shall record the following parameters for Kiln No. 1 on a monthly basis to demonstrate compliance with the SO₂ limitations required by Operation Condition D.1.2:

- (a) average sulfur content of each fuel used;
- (b) average heat content of each fuel used;
- (c) fuel consumption of each fuel used; and
- (d) average sulfur dioxide emission rate in pounds per MMBtu.

Computation of calculated sulfur dioxide emission rates shall be based on the emission factors contained in U. S. EPA publication AP-42 "Compilation of Air Pollutant Emission Factors," in no version dated earlier than September 1988 unless other emission factors based on site-specific sulfur dioxide measurements are approved by the commissioner. [326 IAC 7-2-1(c)]

D.1.11 Fuel Consumption Monitoring

The Permittee shall maintain daily records of the following fuel information for Kiln No. 1 to demonstrate compliance with the limitations required by Operation Conditions D.1.4(d), D.1.4(e), and D.1.4(f):

- (a) weight of each fuel combusted;
- (b) number of whole waste tires combusted; and
- (c) percentage of heat input attributable to each fuel combusted.

Recordkeeping and Reporting Requirements:

D.1.12 Recordkeeping Requirement

The Permittee shall maintain a log of information necessary to document compliance with Operation Conditions D.1.1, D.1.2, D.1.3, and D.1.4 as follows:

- (a) The Permittee shall meet the following time lines for recordkeeping requirements:
 - (1) records of the performance test results and the continuous monitoring system data required by Operation Conditions D.1.5, D.1.6, and D.1.7 shall be maintained for a minimum of 24 months to show compliance with the emission limitations and operation standards required by Operation Conditions D.1.1, D.1.2, D.1.3, D.1.4(a), and D.1.4(b);
 - (2) daily logs of the parameters established in Operation Condition D.1.8, if applicable, shall be maintained for a minimum of 24 months to show compliance with the limitations required by Operation Condition D.1.1(b);

- (3) daily logs of the parameters established in Operation Condition D.1.9(a), semi-annual logs of the parameters established in Operation Condition D.1.9(b) and quarterly logs of the parameters established in Operation Condition D.1.9(c) shall be maintained for a minimum of 36 months to show compliance with the PM and opacity limitations required by Operation Condition D.1.1;
- (4) monthly logs of the parameters established in Operation Condition D.1.10 shall be maintained for a minimum of 36 months to show compliance with SO₂ limitations required by Operation Condition D.1.2; and
- (5) daily rolling average logs of the parameters established in Operation Condition D.1.11 shall be maintained for a minimum of 36 months to show compliance with the limitations required by Operation Conditions D.1.4(d), D.1.4(e), and D.1.4(f).

These records shall be kept at the source location and available within one (1) hour upon verbal request of an IDEM, OAM representative.

- (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; and
 - (4) records of any required preventive maintenance and corrective actions that were implemented. Such records shall briefly describe what was done and indicate who did it. Such records may include, but are not limited to work orders, quality assurance procedures, quality control procedures, operator's standard operating procedures, manufacturer's specifications or their equivalent, and equipment "troubleshooting" guidance.

D.1.13 Reporting Requirement

- (a) The Permittee shall submit quarterly summary reports of the fuel consumption parameters described in Operation Condition D.1.10 to show compliance with the sulfur dioxide limitation required by Operation Conditions D.1.2, and of excess emissions (defined in 326 IAC 3-1.1-3) from the continuous emissions monitoring system for each pollutant described

in Operation Condition D.1.7 to show compliance with Operation Conditions D.1.1(a) or (b), D.1.4(a), and D.1.4(b) 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

within thirty (30) days following the end of each calendar quarter.

- (b) The Permittee shall also submit semiannual reports of excess opacity emissions from the continuous emissions monitoring system to show compliance with Operation Condition D.1.1(b), if applicable, and all malfunctions to:

U.S. Environmental Protection Agency (EPA), Regional Administrator, Region V
Air and Radiation Division, Regulation Development Branch-Indiana (AR-18J)
77 West Jackson Boulevard, Chicago, Illinois 60604-3590

within thirty (30) days following the end of each calendar half.

SECTION D.2 **FACILITY OPERATION CONDITIONS**
FOR TIRE INJECTION SYSTEM FOR KILN NO. 2

One (1) waste tire injection system for existing Kiln No. 2 to accommodate the use of whole waste tires as a supplemental fuel at a maximum heat input rate of 22 percent. Particulate matter emissions shall be controlled by one (1) existing electrostatic precipitator that exhausts to Stack S-KP1.

Emission Limitations and Standards:

D.2.1 Particulate Matter Emissions Limitation

- (a) Pursuant to 326 IAC 5-1-2 (Visible Emission Limitations), Stack S-KP1 of Kiln No. 2 shall comply with the following limitations:
- (1) visible emissions shall not exceed an average of 40% opacity in any 24 consecutive readings; and
 - (2) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in any 6-hour period.
- (b) Pursuant to 326 IAC 12 and 40 CFR 60.14 (Modification), any increase in the particulate matter emission rate (defined in Operation Condition D.2.5(e)) from the combustion of waste tires as a supplemental fuel in Kiln No. 2 shall cause Kiln No. 2 to comply with the requirements of 326 IAC 12 and 40 CFR 60.60 to 60.66 (New Source Performance Standards for Portland Cement Manufacturing Plants) including but not limited to the following limitations:
- (1) particulate matter emissions shall not exceed 0.3 pounds per ton of feed which satisfies the requirements of 326 IAC 6-3-2(a); and
 - (2) opacity shall not exceed an average of 20 percent in any 24 consecutive observations recorded at 15 second intervals in accordance with the applicable procedures under 326 IAC 5-1-4 and 40 CFR 60, Appendix A, Method 9. This limitation satisfies the requirements of 326 IAC 5-1-2 (Visible Emission Limitations).

D.2.2 Sulfur Dioxide Emissions Limitation

Pursuant to 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations), the sulfur dioxide (SO₂) emissions from Stack S-KP1 of Kiln No. 2 shall not exceed 6.0 pounds per MMBtu.

D.2.3 Dioxin/Furan Emission Limitation

- (a) Pursuant to 326 IAC 2-1-3(i)(8), the dioxin/furan emissions, during the combustion of waste tires as a supplemental fuel, shall not exceed 8.7×10^{-11} grains of 2,3,7,8-tetrachlorodibenzo-p-dioxin equivalents per dry standard cubic feet (gr TEQ/dscf) corrected at 7 percent oxygen unless:
- (1) the dioxin/furan stack test shows a higher result; and

- (2) the stack test, or subsequent test shows that the temperature at the inlet of the control device is less than 400 degrees Fahrenheit and does not exceed 1.7×10^{-10} gr TEQ/dscf corrected at 7 percent oxygen.

The compliance stack tests required by Operation Condition D.2.5 shall establish which of these limits is appropriate.

- (b) The Permittee shall comply with the dioxin/furan emission limitation required by the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Portland Cement Manufacturing Plants (40 CFR 63 and 326 IAC 20) upon promulgation. This rule shall supersede the dioxin/furan emission limitation required by (a) above.

D.2.4 Operation Standards

Kiln No. 2 shall comply with the following limitations to demonstrate that the PSD rules do not apply pursuant to 326 IAC 2-2 during the combustion of waste tires as a supplemental fuel:

- (a) the temperature in the burning zone of Kiln No. 2 shall be operated at a minimum temperature of 1800 degrees Fahrenheit;
- (b) maintain the kiln back end oxygen concentration within a range of 0.75 percent to 3 percent under normal operating conditions;
- (c) the input of waste tires as a fuel source shall only be conducted in a kiln that is manufacturing product;
- (d) the weight waste tires as a fuel source for Kiln No. 2 shall be limited to 27 tons per day;
- (e) the number of waste tires, measured as passenger tire equivalents (PTEs), injected into Kiln No. 2 shall be limited to 2160 PTEs per day; and
- (f) the heat input, in MMBtu, derived from the combustion of waste tires in Kiln No. 2 shall not exceed 22 percent.

Compliance Determination, PSD and NSPS Applicability, and Monitoring:

D.2.5 Initial Performance Testing

Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements), initial compliance tests of Stack S-KP1 from the Kiln No. 2 operations shall be performed.

- (a) Compliance tests shall be conducted when the kiln is utilizing 100 percent coal. The compliance tests shall be performed for the pollutants stated in (a)(1) of this condition to demonstrate compliance with the limitations required by Operation Conditions C.10, D.2.1, and D.2.2, to establish whether PSD or NSPS requirements are applicable, and to obtain information to ensure public health is protected. The tests shall be performed for the pollutants stated in (a)(2) of this condition to obtain information to ensure public health is protected.
 - (1) Opacity, PM, PM₁₀, SO₂, NO_x, VOC, CO, Pb, and dioxin/furan.

- (2) Benzene, toluene, ethylbenzene, xylenes, styrene, methylene chloride, total hydrocarbons, antimony, arsenic, beryllium, cadmium, hexavalent chromium, cobalt, manganese, mercury, nickel, selenium, and zinc.
- (b) Compliance tests shall be conducted when the kiln is utilizing a fuel combination of coal and whole waste tires. The compliance tests shall be performed for the pollutants stated in (b)(1) of this condition to demonstrate compliance with the limitations required by Operation Conditions C.10, D.2.1, D.2.2, and D.2.3, to establish whether PSD or NSPS requirements are applicable, and to obtain information to ensure public health is protected. The tests shall be performed for the pollutants stated in (b)(2) of this condition to obtain information to ensure public health is protected.
 - (1) Opacity, PM, PM₁₀, SO₂, NO_x, VOC, CO, Pb, and dioxin/furan.
 - (2) Benzene, toluene, ethylbenzene, xylenes, styrene, methylene chloride, total hydrocarbons, antimony, arsenic, beryllium, cadmium, hexavalent chromium, cobalt, manganese, mercury, nickel, selenium, and zinc.
- (c) In addition to the compliance tests required by (a) and (b), the following observations and recordkeeping requirements shall be performed:
 - (1) either EPA Method 9 opacity tests or certified continuous opacity monitoring (COM) data shall be performed concurrently with the particulate matter compliance tests for Kiln No. 2 unless meteorological conditions require rescheduling the opacity tests to another date;
 - (2) the kiln temperature and oxygen concentration shall be measured and recorded during each performance testing session;
 - (3) the clinker production rate shall be measured and recorded during each performance testing session. Kiln No. 2 must be operating at 95 percent of its maximum production capacity or more during the performance testing session to be considered a valid test;
 - (4) the weight of whole waste tires added to the kiln during the performance testing session for the combustion of coal and whole waste tires stated in (b) above shall be measured and recorded. The weight of the whole waste tires shall be used to calculate the heat input from the whole waste tires. The heat input from the whole waste tires during this performance testing session must be at least 95 percent of the maximum capacity allowed by Operation Condition D.2.4(f); and
 - (5) the temperature at the inlet of the electrostatic precipitator unit shall be measured and recorded during the dioxin/furan compliance tests for combustion of coal and whole waste tires stated in (b) above.
- (d) The Permittee shall be subject to the PSD requirements (326 IAC 2-2) whenever the combined net emissions increase from the Kiln No. 1, Kiln No. 2 and Kiln No. 3 operations exceed any of the limitations required by Operation Condition C.10. The "net emissions increase" is defined in 326 IAC 2-2 as any increase in actual emissions from a particular physical change or change in the method of operation at a source. To determine PSD

applicability for this modification, the net emissions increase is the increase in actual emissions from the kilns utilizing 100% coal to the kilns utilizing a combination of coal and whole waste tires. The increase in actual emissions for each pollutant stated in Operation Condition C.10 shall be calculated by subtracting the coal combustion emissions of all three kilns from the coal/tire combustion emissions of all three kilns. The emissions from coal combustion and coal/tire combustion shall be determined from the compliance test results.

- (e) Kiln No. 2 shall be subject to the NSPS requirements (326 IAC 12 and 40 CFR 60.62) whenever a modification occurs. A "modification" is defined in 40 CFR 60.14 as any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere any pollutant to which a standard applies. The "increase in the emission rate" under NSPS regulations shall be calculated by comparing the hourly emission rate, at maximum physical capacity, before and after the physical or operational change. Any increase in the particulate matter emission rate from the coal combustion practices to the tire/coal combustion practices shall require Kiln No. 2 to comply with the NSPS regulations.
- (f) The Kiln No. 2 compliance tests, for both the utilization of 100 percent coal and the utilization of a fuel combination of coal and whole waste tires, shall be performed no later than the 30th day that the kiln actually burns waste tires or no later than 180 days after the 1st use of waste tires as a supplemental fuel, whichever is earlier.
- (g) All compliance tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.

- (1) A test protocol 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

at least thirty-five (35) days before the intended test date. The Permittee shall develop and submit with the protocol for approval by IDEM, OAM, standard operating procedures to be followed during sampling, handling, analysis, quality control, quality assurance, and data reporting.

- (2) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date. [326 IAC 3-2.1-2]
- (3) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing. [326 IAC 3-2.1-4]
- (4) When the results of a compliance test performed exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. Corrective actions may include cessation of whole waste tire burning within seven (7) days. 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 tests.

- (5) Whenever the results of a compliance test performed exceed the level specified in any condition of this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.
- (h) IDEM, OAM retains the authority under 326 IAC 2-1-4(f) to require the Permittee to perform additional and future compliance testing as necessary.

D.2.6 Performance Testing

Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements), the following compliance tests shall be performed in addition to the initial compliance tests required by Operation Condition D.2.5:

- (a) Compliance tests shall be performed on Stack S-KP1 from the Kiln No. 2 operations every 2 ½ years for opacity, particulate matter, and dioxin/furan emissions to demonstrate compliance with the limitations required by Operation Conditions D.2.1, D.2.2 and D.2.3.
- (b) In addition to the compliance tests, the following observations and recordkeeping requirements shall be performed:
 - (1) either EPA Method 9 opacity tests or certified continuous opacity monitoring (COM) data shall be performed concurrently with the particulate matter compliance tests for Kiln No. 2 unless meteorological conditions require rescheduling the opacity tests to another date;
 - (2) the kiln temperature and oxygen concentration shall be measured and recorded during each performance testing session;
 - (3) the clinker production rate shall be measured and recorded during each performance testing session. Kiln No. 2 must be operating at 95 percent of its maximum production capacity or more during the performance testing session to be considered a valid test;
 - (4) the weight of whole waste tires added to the kiln during the performance testing session for the combustion of coal and whole waste tires stated in (b) above shall be measured and recorded. The weight of the whole waste tires shall be used to calculate the heat input from the whole waste tires. The heat input from the whole waste tires during this performance testing session must be at least 95 percent of the maximum capacity allowed by Operation Condition D.2.4(f); and
 - (5) the temperature at the inlet of the electrostatic precipitator unit shall be measured and recorded during the dioxin/furan compliance tests.

- (c) The compliance tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.
- (1) A test protocol 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
- at least thirty-five (35) days before the intended test date. The Permittee shall develop and submit with the protocol for approval by IDEM, OAM, standard operating procedures to be followed during sampling, handling, analysis, quality control, quality assurance, and data reporting.
- (2) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date. [326 IAC 3-2.1-2]
- (3) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing. [326 IAC 3-2.1-4]
- (4) When the results of a compliance test performed exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. Corrective actions may include cessation of tire burning within seven (7) days. The Permittee shall submit a description of these corrective actions to 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. 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 OAM within thirty (30) days of receipt of the notice of deficiency. OAM reserves the authority to use enforcement activities to resolve noncompliant tests.
- (5) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.
- (d) The OAM retains the authority under 326 IAC 2-1-4(f) to require the Permittee to perform additional and future compliance testing as necessary.

D.2.7 Continuous Emissions Monitoring

Pursuant to 326 IAC 2, the Permittee shall continuously monitor and record the following parameters from Kiln No. 2 to demonstrate compliance with the limitations and operation standards required by Operation Conditions D.2.1, D.2.4(a), and D.2.4(b):

- (a) opacity;
- (b) temperature in the burning zone of Kiln No. 2; and
- (c) oxygen concentration at the back end of Kiln No. 2.

The continuous monitoring systems shall be installed and operational prior to conducting the performance tests. A monitoring protocol shall be performed in accordance with the applicable procedures under 40 CFR 60, Appendix B, Performance Specification 1 and 326 IAC 3-1.1 and 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

within 60 days after achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup of the combustion of waste tires in Kiln No. 2. Verification of operational status shall, as a minimum, include completion of the manufacturer written requirements or recommendations for installation, operation, and calibration of the device.

D.2.8 NSPS Compliance

Pursuant to 326 IAC 12 and 40 CFR 60, Subpart F, the Permittee shall maintain daily records of the following parameters for Kiln No. 2, if applicable, to demonstrate compliance with the PM and opacity limitations required by Operation Condition D.2.1(b):

- (a) clinker production rate; and
- (b) kiln feed rates.

D.2.9 Electrostatic (ESP) Operating Condition

The electrostatic precipitator (ESP) of Kiln No. 2 shall be operated at all times when the kiln is in operation.

- (a) The Permittee shall maintain, monitor and record the primary and secondary amperage and T-R set voltage of each ESP at a level demonstrated by a compliant performance test, at least once per day. If the voltage of the T-R set drops five (5) direct current (DC) kilovolts or thirty (30) alternating current (AC) volts below this pre-determined baseline or if less than 90% of the total T-R sets are functioning, corrective action shall be taken in accordance with the Permittee's Preventive Maintenance Plan. The company shall document the cause of the out-of-range reading and take immediate action to correct any problem. Failure or partial failure of the control device shall be reported to IDEM, OAM according to the procedure specified for malfunctions in 326 IAC 1-6-2, in which case the provisions of 326 IAC 1-6-5 may apply at the discretion of IDEM, OAM.
- (b) The instrument used for determining the T-R set voltage shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.
- (c) An inspection of each ESP shall be performed a minimum of two (2) times per year. A record shall be kept of the results of the inspection and the number of ESP part(s) replaced.
- (d) In the event that an ESP failure has been observed:
 - (1) The affected process will be shut down immediately until the failed unit has been replaced.

- (2) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

D.2.10 Sulfur Dioxide Compliance

Pursuant to 326 IAC 7-1.1-2, the Permittee shall record the following parameters for Kiln No. 2 on a monthly basis to demonstrate compliance with the SO₂ limitations required by Operation Condition D.2.2:

- (a) average sulfur content of each fuel used;
- (b) average heat content of each fuel used;
- (c) fuel consumption of each fuel used; and
- (d) average sulfur dioxide emission rate in pounds per MMBtu.

Computation of calculated sulfur dioxide emission rates shall be based on the emission factors contained in U. S. EPA publication AP-42 "Compilation of Air Pollutant Emission Factors," in no version dated earlier than September 1988 unless other emission factors based on site-specific sulfur dioxide measurements are approved by the commissioner. [326 IAC 7-2-1(c)]

D.2.11 Fuel Consumption Monitoring

The Permittee shall maintain daily records of the following fuel information for Kiln No. 2 to demonstrate compliance with the limitations required by Operation Conditions D.2.4(d), D.2.4(e), and D.2.4(f):

- (a) weight of each fuel combusted;
- (b) number of whole waste tires combusted; and
- (c) percentage of heat input attributable to each fuel combusted.

Recordkeeping and Reporting Requirements:

D.2.12 Recordkeeping Requirement

The Permittee shall maintain a log of information necessary to document compliance with Operation Conditions D.2.1, D.2.2, D.2.3, and D.2.4 as follows:

- (a) The Permittee shall meet the following time lines for recordkeeping requirements:
 - (1) records of the performance test results and the continuous monitoring system data required by Operation Conditions D.2.5, D.2.6, and D.2.7 shall be maintained for a minimum of 24 months to show compliance with the emission limitations and operation standards required by Operation Conditions D.2.1, D.2.2, D.2.3, D.2.4(a), and D.2.4(b);

- (2) daily logs of the parameters established in Operation Condition D.2.8, if applicable, shall be maintained for a minimum of 24 months to show compliance with the limitations required by Operation Condition D.2.1(b);
- (3) daily logs of the parameters established in Operation Condition D.2.9(a), semi-annual logs of the parameters established in Operation Condition D.2.9(b) and quarterly logs of the parameters established in Operation Condition D.2.9(c) shall be maintained for a minimum of 36 months to show compliance with the PM and opacity limitations required by Operation Condition D.2.1;
- (4) monthly logs of the parameters established in Operation Condition D.2.10 shall be maintained for a minimum of 36 months to show compliance with SO₂ limitations required by Operation Condition D.2.2; and
- (5) daily rolling average logs of the parameters established in Operation Condition D.2.11 shall be maintained for a minimum of 36 months to show compliance with the limitations required by Operation Conditions D.2.4(d), D.2.4(e), and D.2.4(f).

These records shall be kept at the source location and available within one (1) hour upon verbal request of an IDEM, OAM representative.

- (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; and
 - (4) records of any required preventive maintenance and corrective actions that were implemented. Such records shall briefly describe what was done and indicate who did it. Such records may include, but are not limited to work orders, quality assurance procedures, quality control procedures, operator's standard operating procedures, manufacturer's specifications or their equivalent, and equipment "troubleshooting" guidance.

D.2.13 Reporting Requirement

- (a) The Permittee shall submit quarterly summary reports of the fuel consumption parameters described in Operation Condition D.2.10 to show compliance with the sulfur dioxide

limitation required by Operation Conditions D.2.2, and of excess emissions (defined in 326 IAC 3-1.1-3) from the continuous emissions monitoring system for each pollutant described in Operation Condition D.2.7 to show compliance with Operation Conditions D.2.1(a) or (b), D.2.4(a), and D.2.4(b) 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

within thirty (30) days following the end of each calendar quarter.

- (b) The Permittee shall also submit semiannual reports of excess opacity emissions from the continuous emissions monitoring system to show compliance with Operation Condition D.2.1(b), if applicable, and all malfunctions to:

U.S. Environmental Protection Agency (EPA), Regional Administrator, Region V
Air and Radiation Division, Regulation Development Branch-Indiana (AR-18J)
77 West Jackson Boulevard, Chicago, Illinois 60604-3590

within thirty (30) days following the end of each calendar half.

**SECTION D.3 FACILITY OPERATION CONDITIONS
FOR TIRE INJECTION SYSTEM FOR KILN NO. 3**

One (1) waste tire injection system for existing Kiln No. 3 to accommodate the use of whole waste tires as a supplemental fuel at a maximum heat input rate of 26 percent. Particulate matter emissions shall be controlled by one (1) existing electrostatic precipitator that exhausts to Stack S-KP2.

Emission Limitations and Standards:

D.3.1 Particulate Matter Emissions Limitation

Pursuant to 326 IAC 12 and 40 CFR 60.60 to 60.66 (New Source Performance Standards for Portland Cement Manufacturing Plants), Kiln No. 3 shall comply with the following limitations:

- (a) particulate matter (PM) emissions shall not exceed 0.3 pounds per ton of feed which satisfies the requirements of 326 IAC 6-3-2(a); and
- (b) opacity shall not exceed an average of 20 percent in any 24 consecutive observations recorded at 15 second intervals in accordance with the applicable procedures under 326 IAC 5-1-4 and 40 CFR 60, Appendix A, Method 9. This limitation satisfies the requirements of 326 IAC 5-1-2 (Visible Emission Limitations).

D.3.2 Sulfur Dioxide Emissions Limitation

Pursuant to 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations), the sulfur dioxide (SO₂) emissions from Stack S-KP2 of Kiln No. 3 shall not exceed 6.0 pounds per MMBtu.

D.3.3 Dioxin/Furan Emission Limitation

(a) Pursuant to 326 IAC 2-1-3(i)(8), the dioxin/furan emissions, during the combustion of waste tires as a supplemental fuel, shall not exceed 8.7×10^{-11} grains of 2,3,7,8-tetrachlorodibenzo-p-dioxin equivalents per dry standard cubic feet (gr TEQ/dscf) corrected at 7 percent oxygen unless:

- (1) the dioxin/furan stack test shows a higher result; and
- (2) the stack test, or subsequent test shows that the temperature at the inlet of the control device is less than 400 degrees Fahrenheit and does not exceed 1.7×10^{-10} gr TEQ/dscf corrected at 7 percent oxygen.

The compliance stack tests required by Operation Condition D.3.5 shall establish which of these limits is appropriate.

- (b) The Permittee shall comply with the dioxin/furan emission limitation required by the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Portland Cement Manufacturing Plants (40 CFR 63 and 326 IAC 20) upon promulgation. This rule shall supersede the dioxin/furan emission limitation required by (a) above.

D.3.4 Operation Standards

Kiln No. 3 shall comply with the following limitations to demonstrate that the PSD rules do not apply pursuant to 326 IAC 2-2 during the combustion of waste tires as a supplemental fuel:

- (a) the temperature in the burning zone of Kiln No. 3 shall be operated at a minimum temperature of 1800 degrees Fahrenheit;
- (b) maintain the kiln back end oxygen concentration within a range of 0.75 percent to 3 percent under normal operating conditions;
- (c) the input of waste tires as a fuel source shall only be conducted in a kiln that is manufacturing product;
- (d) the weight waste tires as a fuel source for Kiln No. 3 shall be limited to 30 tons per day;
- (e) the number of waste tires, measured as passenger tire equivalents (PTEs), injected into Kiln No. 3 shall be limited to 2376 PTEs per day; and
- (f) the heat input, in MMBtu, derived from the combustion of waste tires in Kiln No. 3 shall not exceed 26 percent.

Compliance Determination, PSD and NSPS Applicability, and Monitoring:

D.3.5 Initial Performance Testing

Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements), initial compliance tests of Stack S-KP2 from the Kiln No. 3 operations shall be performed.

- (a) Compliance tests shall be conducted when the kiln is utilizing 100 percent coal. The compliance tests shall be performed for the pollutants stated in (a)(1) of this condition to demonstrate compliance with the limitations required by Operation Conditions C.10, D.3.1, and D.3.2, to establish whether PSD requirements are applicable, and to obtain information to ensure public health is protected. The tests shall be performed for the pollutants stated in (a)(2) of this condition to obtain information to ensure public health is protected.
 - (1) Opacity, PM, PM₁₀, SO₂, NO_x, VOC, CO, Pb, and dioxin/furan.
 - (2) Benzene, toluene, ethylbenzene, xylenes, styrene, methylene chloride, total hydrocarbons, antimony, arsenic, beryllium, cadmium, hexavalent chromium, cobalt, manganese, mercury, nickel, selenium, and zinc.
- (b) Compliance tests shall be conducted when the kiln is utilizing a fuel combination of coal and whole waste tires. The compliance tests shall be performed for the pollutants stated in (b)(1) of this condition to demonstrate compliance with the limitations required by Operation Conditions C.10, D.3.1, D.3.2, and D.3.3, to establish whether PSD requirements are applicable, and to obtain information to ensure public health is protected. The tests shall be performed for the pollutants stated in (b)(2) of this condition to obtain information to ensure public health is protected.
 - (1) Opacity, PM, PM₁₀, SO₂, NO_x, VOC, CO, Pb, and dioxin/furan.

- (2) Benzene, toluene, ethylbenzene, xylenes, styrene, methylene chloride, total hydrocarbons, antimony, arsenic, beryllium, cadmium, hexavalent chromium, cobalt, manganese, mercury, nickel, selenium, and zinc.
- (c) In addition to the compliance tests required by (a) and (b), the following observations and recordkeeping requirements shall be performed:
- (1) either EPA Method 9 opacity tests or certified continuous opacity monitoring (COM) data shall be performed concurrently with the particulate matter compliance tests for Kiln No. 3 unless meteorological conditions require rescheduling the opacity tests to another date;
 - (2) the kiln temperature and oxygen concentration shall be measured and recorded during each performance testing session;
 - (3) the clinker production rate shall be measured and recorded during each performance testing session. Kiln No. 3 must be operating at 95 percent of its maximum production capacity or more during the performance testing session to be considered a valid test;
 - (4) the weight of whole waste tires added to the kiln during the performance testing session for the combustion of coal and whole waste tires stated in (b) above shall be measured and recorded. The weight of the whole waste tires shall be used to calculate the heat input from the whole waste tires. The heat input from the whole waste tires during this performance testing session must be at least 95 percent of the maximum capacity allowed by Operation Condition D.3.4(f); and
 - (5) the temperature at the inlet of the electrostatic precipitator unit shall be measured and recorded during the dioxin/furan compliance tests for combustion of coal and whole waste tires stated in (b) above.
- (d) The Permittee shall be subject to the PSD requirements (326 IAC 2-2) whenever the combined net emissions increase from the Kiln No. 1, Kiln No. 2 and Kiln No. 3 operations exceed any of the limitations required by Operation Condition C.10. The "net emissions increase" is defined in 326 IAC 2-2 as any increase in actual emissions from a particular physical change or change in the method of operation at a source. To determine PSD applicability for this modification, the net emissions increase is the increase in actual emissions from the kilns utilizing 100% coal to the kilns utilizing a combination of coal and whole waste tires. The increase in actual emissions for each pollutant stated in Operation Condition C.10 shall be calculated by subtracting the coal combustion emissions of all three kilns from the coal/tire combustion emissions of all three kilns. The emissions from coal combustion and coal/tire combustion shall be determined from the compliance test results.
- (e) The Kiln No. 3 compliance tests, for both the utilization of 100 percent coal and the utilization of a fuel combination of coal and whole waste tires, shall be performed no later than the 30th day that the kiln actually burns waste tires or no later than 180 days after the 1st use of waste tires as a supplemental fuel, whichever is earlier.
- (f) All compliance tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.

- (1) A test protocol 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

at least thirty-five (35) days before the intended test date. The Permittee shall develop and submit with the protocol for approval by IDEM, OAM, standard operating procedures to be followed during sampling, handling, analysis, quality control, quality assurance, and data reporting.

- (2) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date. [326 IAC 3-2.1-2]
- (3) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing. [326 IAC 3-2.1-4]
- (4) When the results of a compliance test performed exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. Corrective actions may include cessation of whole waste tire burning within seven (7) days. 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 tests.
- (5) Whenever the results of a compliance test performed exceed the level specified in any condition of this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.
- (g) IDEM, OAM retains the authority under 326 IAC 2-1-4(f) to require the Permittee to perform additional and future compliance testing as necessary.

D.3.6 Performance Testing

Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements), the following compliance tests shall be performed in addition to the initial compliance tests required by Operation Condition D.3.5:

- (a) Compliance tests shall be performed on Stack S-KP2 from the Kiln No. 3 operations every 2 ½ years for opacity, particulate matter, and dioxin/furan emissions to demonstrate compliance with the limitations required by Operation Conditions D.3.1, D.3.2 and D.3.3.

- (b) In addition to the compliance tests, the following observations and recordkeeping requirements shall be performed:
- (1) either EPA Method 9 opacity tests or certified continuous opacity monitoring (COM) data shall be performed concurrently with the particulate matter compliance tests for Kiln No. 3 unless meteorological conditions require rescheduling the opacity tests to another date;
 - (2) the kiln temperature and oxygen concentration shall be measured and recorded during each performance testing session;
 - (3) the clinker production rate shall be measured and recorded during each performance testing session. Kiln No. 3 must be operating at 95 percent of its maximum production capacity or more during the performance testing session to be considered a valid test;
 - (4) the weight of whole waste tires added to the kiln during the performance testing session for the combustion of coal and whole waste tires stated in (b) above shall be measured and recorded. The weight of the whole waste tires shall be used to calculate the heat input from the whole waste tires. The heat input from the whole waste tires during this performance testing session must be at least 95 percent of the maximum capacity allowed by Operation Condition D.3.4(f); and
 - (5) the temperature at the inlet of the electrostatic precipitator unit shall be measured and recorded during the dioxin/furan compliance tests.
- (c) The compliance tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.
- (1) A test protocol 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

at least thirty-five (35) days before the intended test date. The Permittee shall develop and submit with the protocol for approval by IDEM, OAM, standard operating procedures to be followed during sampling, handling, analysis, quality control, quality assurance, and data reporting.
 - (2) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date. [326 IAC 3-2.1-2]
 - (3) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing. [326 IAC 3-2.1-4]
 - (4) When the results of a compliance test performed exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. Corrective actions may include cessation of tire burning within seven (7) days. The

Permittee shall submit a description of these corrective actions to 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. 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 OAM within thirty (30) days of receipt of the notice of deficiency. OAM reserves the authority to use enforcement activities to resolve noncompliant tests.

- (5) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.
- (d) The OAM retains the authority under 326 IAC 2-1-4(f) to require the Permittee to perform additional and future compliance testing as necessary.

D.3.7 Continuous Emissions Monitoring

Pursuant to 326 IAC 3 and 326 IAC 12, the Permittee shall continuously monitor and record the following parameters from Kiln No. 3 to demonstrate compliance with the limitations and operation standards required by Operation Conditions D.3.1, D.3.4(a), and D.3.4(b):

- (a) opacity;
- (b) temperature in the burning zone of Kiln No. 3; and
- (c) oxygen concentration at the back end of Kiln No. 3.

The continuous monitoring systems shall be installed and operational prior to conducting the performance tests. A monitoring protocol shall be performed in accordance with the applicable procedures under 40 CFR 60, Appendix B, Performance Specification 1 and 326 IAC 3-1.1 and 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

within 60 days after achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup of the combustion of waste tires in Kiln No. 3. Verification of operational status shall, as a minimum, include completion of the manufacturer written requirements or recommendations for installation, operation, and calibration of the device.

D.3.8 NSPS Compliance

Pursuant to 326 IAC 12 and 40 CFR 60, Subpart F, the Permittee shall maintain daily records of the following parameters for Kiln No. 3 to demonstrate compliance with the PM and opacity limitations required by Operation Condition D.3.1(b):

- (a) clinker production rate; and

- (b) kiln feed rates.

D.3.9 Electrostatic (ESP) Operating Condition

The electrostatic precipitator (ESP) of Kiln No. 3 shall be operated at all times when the kiln is in operation.

- (a) The Permittee shall maintain, monitor and record the primary and secondary amperage and T-R set voltage of each ESP at a level demonstrated by a compliant performance test, at least once per day. If the voltage of the T-R set drops five (5) direct current (DC) kilovolts or thirty (30) alternating current (AC) volts below this pre-determined baseline or if less than 90% of the total T-R sets are functioning, corrective action shall be taken in accordance with the Permittee's Preventive Maintenance Plan. The company shall document the cause of the out-of-range reading and take immediate action to correct any problem. Failure or partial failure of the control device shall be reported to IDEM, OAM according to the procedure specified for malfunctions in 326 IAC 1-6-2, in which case the provisions of 326 IAC 1-6-5 may apply at the discretion of IDEM, OAM.
- (b) The instrument used for determining the T-R set voltage shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.
- (c) An inspection of each ESP shall be performed a minimum of two (2) times per year. A record shall be kept of the results of the inspection and the number of ESP part(s) replaced.
- (d) In the event that an ESP failure has been observed:
 - (1) The affected process will be shut down immediately until the failed unit has been replaced.
 - (2) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

D.3.10 Sulfur Dioxide Compliance

Pursuant to 326 IAC 7-1.1-2, the Permittee shall record the following parameters for Kiln No. 3 on a monthly basis to demonstrate compliance with the SO₂ limitations required by Operation Condition D.3.2:

- (a) average sulfur content of each fuel used;
- (b) average heat content of each fuel used;
- (c) fuel consumption of each fuel used; and
- (d) average sulfur dioxide emission rate in pounds per MMBtu.

Computation of calculated sulfur dioxide emission rates shall be based on the emission factors contained in U. S. EPA publication AP-42 "Compilation of Air Pollutant Emission Factors," in no

version dated earlier than September 1988 unless other emission factors based on site-specific sulfur dioxide measurements are approved by the commissioner. [326 IAC 7-2-1(c)]

D.3.11 Fuel Consumption Monitoring

The Permittee shall maintain daily records of the following fuel information for Kiln No. 3 to demonstrate compliance with the limitations required by Operation Conditions D.3.4(d), D.3.4(e), and D.3.4(f):

- (a) weight of each fuel combusted;
- (b) number of whole waste tires combusted; and
- (c) percentage of heat input attributable to each fuel combusted.

Recordkeeping and Reporting Requirements:

D.3.12 Recordkeeping Requirement

The Permittee shall maintain a log of information necessary to document compliance with Operation Conditions D.3.1, D.3.2, D.3.3, and D.3.4 as follows:

- (a) The Permittee shall meet the following time lines for recordkeeping requirements:
 - (1) records of the performance test results and the continuous monitoring system data required by Operation Conditions D.3.5, D.3.6, and D.3.7 shall be maintained for a minimum of 24 months to show compliance with the emission limitations and operation standards required by Operation Conditions D.3.1, D.3.2, D.3.3, D.3.4(a), and D.3.4(b);
 - (2) daily logs of the parameters established in Operation Condition D.3.8 shall be maintained for a minimum of 24 months to show compliance with the limitations required by Operation Condition D.3.1(b);
 - (3) daily logs of the parameters established in Operation Condition D.3.9(a), semi-annual logs of the parameters established in Operation Condition D.3.9(b) and quarterly logs of the parameters established in Operation Condition D.3.9(c) shall be maintained for a minimum of 36 months to show compliance with the PM and opacity limitations required by Operation Condition D.3.1;
 - (4) monthly logs of the parameters established in Operation Condition D.3.10 shall be maintained for a minimum of 36 months to show compliance with SO₂ limitations required by Operation Condition D.3.2; and
 - (5) daily rolling average logs of the parameters established in Operation Condition D.3.11 shall be maintained for a minimum of 36 months to show compliance with the limitations required by Operation Conditions D.3.4(d), D.3.4(e), and D.3.4(f).

These records shall be kept at the source location and available within one (1) hour upon verbal request of an IDEM, OAM representative.

- (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; and
 - (4) records of any required preventive maintenance and corrective actions that were implemented. Such records shall briefly describe what was done and indicate who did it. Such records may include, but are not limited to work orders, quality assurance procedures, quality control procedures, operator's standard operating procedures, manufacturer's specifications or their equivalent, and equipment "troubleshooting" guidance.

D.3.13 Reporting Requirement

- (a) The Permittee shall submit quarterly summary reports of the fuel consumption parameters described in Operation Condition D.3.10 to show compliance with the sulfur dioxide limitation required by Operation Conditions D.3.2, and of excess emissions (defined in 326 IAC 3-1.1-3) from the continuous emissions monitoring system for each pollutant described in Operation Condition D.3.7 to show compliance with Operation Conditions D.3.1(b), D.3.4(a), and D.3.4(b) 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

within thirty (30) days following the end of each calendar quarter.

- (b) The Permittee shall also submit semiannual reports of excess opacity emissions from the continuous emissions monitoring system to show compliance with Operation Condition D.3.1(b) and all malfunctions to:

U.S. Environmental Protection Agency (EPA), Regional Administrator, Region V

Air and Radiation Division, Regulation Development Branch-Indiana (AR-18J)
77 West Jackson Boulevard, Chicago, Illinois 60604-3590

within thirty (30) days following the end of each calendar half.

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name:	Lehigh Portland Cement Company
Source Location:	121 North First Street, Mitchell, Indiana
County:	Lawrence
Construction Permit No.:	CP-093-4598-00002
SIC Code:	3241
Permit Reviewer:	Michele M. Williams

The Office of Air Management (OAM) has reviewed an application from Lehigh Portland Cement Company (Lehigh) relating to the construction and operation of:

- (a) one (1) waste tire injection system for existing Kiln No. 1 to accommodate the use of whole waste tires as a supplemental fuel at a maximum heat input rate of 22 percent. Particulate matter emissions shall be controlled by one (1) existing electrostatic precipitator that exhausts to Stack S-KP1;
- (b) one (1) waste tire injection system for existing Kiln No. 2 to accommodate the use of whole waste tires as a supplemental fuel at a maximum heat input rate of 22 percent. Particulate matter emissions shall be controlled by one (1) existing electrostatic precipitator that exhausts to Stack S-KP1; and
- (c) one (1) waste tire injection system for existing Kiln No. 3 to accommodate the use of whole waste tires as a supplemental fuel at a maximum heat input rate of 26 percent. Particulate matter emissions shall be controlled by one (1) existing electrostatic precipitator that exhausts to Stack S-KP2.

A portion of the hot exit gases from each kiln may be routed to its associated raw mill as a source of indirect heat for drying raw materials in the raw mill. The exit gases from each raw mill are then circulated back to its associated kiln baghouse and exhausted to its associated kiln stack. The hot exit gases from Kiln No. 3 are routed to the preheater tower prior to the raw mill. The preheater tower is a relatively new technology which was not available for the older Kiln No. 1 or Kiln No. 2.

There are no alkali bypass systems attached to any of the kilns. Alkali bypass systems utilize a portion of the kiln exit gas stream that is quickly cooled by air or water to condense volatile constituents which adversely affect the quality of the portland cement. The volatile constituents are associated with certain types of raw materials. The alkali content of the raw materials used at this facility is not high enough to disrupt the product specifications and quality of the portland cement. Therefore, alkali bypass systems are not a necessary part of the process.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
S-KP1	Kiln No. 1 and Kiln No. 2	200	18	221,000	580

S-KP2	Kiln No. 3	100	5.5	72,000	388
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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 June 2, 1995.

Emissions Calculations

Detailed emission calculations are included in Appendix A (2 pages). These calculations the proposed modification (tire combustion) were developed from other stack test data performed at similar facilities in other states. Because these facilities are not the exact same process, stack tests will be required to ensure that the pollutants do not exceed the PSD threshold levels.

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 Expected Emissions (tons/year)
Particulate Matter (PM)	24.4	0
Particulate Matter (PM10)	14.4	0
Sulfur Dioxide (SO ₂)	39	0
Volatile Organic Compounds (VOC)	39	0
Carbon Monoxide (CO)	99	25.4
Nitrogen Oxides (NO _x)	39	0
Lead (Pb)	0.6	0.055
Single Hazardous Air Pollutant (HAP)	9.4	2.20
Combination of HAPs	14.4	4.57

- (a) Allowable emissions are determined from the applicability of rule 326 IAC 2-2. The potential increase in emissions from the tire burning operations shall not exceed the allowable emissions stated in the table above to avoid PSD review.
- (b) Potential emissions (as defined in the Indiana Rule) of CO are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

County Attainment Status

- (a) Volatile organic compounds (VOC) and nitrogen oxides (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Lawrence County has been

designated as attainment for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

- (b) Lawrence 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, Part 70 or FESOP Definition (emissions after controls based on the July 24, 1997 AIRS Quick Look Report):

Pollutant	Emissions (ton/yr)
PM	2392
PM10	2392
SO ₂	4825
VOC	7.91
CO	33.2
NO _x	2945

- (a) This existing source is a major stationary source because it is in one of the 28 listed source categories and at least one regulated pollutant is emitted at a rate of 100 tons per year or more.

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)	NOx (ton/yr)	Lead (ton/yr)
Proposed Modification	(190)	(43.7)	(344)	(2.80)	25.4	(298)	0.055
PSD Significant Level	25	15	40	40	100	40	0.6

- (a) This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2 the PSD requirements do not apply.
- (b) The emissions from the proposed modification (tire combustion) were developed from other stack test data performed at similar facilities. Because these facilities are not the exact same process, stack tests will be required to ensure that the pollutants do not exceed the PSD threshold levels. If any pollutant does exceed the PSD threshold levels, the source is required to cease the tire burning operations until proper approval has been granted.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T-093-5990-00002) application on May 31, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Federal Rule Applicability

40 CFR 63 (National Emissions Standards for Hazardous Air Pollutants)

There are presently no National Emissions Standards for Hazardous Air Pollutant (NESHAP) regulations for Portland Cement Plants. However, the proposed NESHAP for Portland Cement Plants should be introduced by November 1997. According to the US EPA draft *Fact Sheet for the Proposed Air Toxics Regulation for Portland Cement Manufacturing Plants*, dated February 14, 1997, major and area (non-major) sources of hazardous air pollutants shall limit the combined dioxin/furan emissions from nonhazardous waste kilns or nonhazardous waste in-line kiln/raw mill and alkali bypass systems to 8.7×10^{-11} grains TEQ per dry standard cubic foot (gr TEQ/dscf). If the company cannot meet this limit, then the source shall limit the dioxin/furan emissions to 1.7×10^{-10} gr TEQ/dscf and maintain a temperature of no more than 400 degrees Fahrenheit at the inlet of the particulate matter control device.

The cement kilns at this source do not have alkali bypass systems, and the hot exit gases from the kilns to the raw mills and preheater tower are routed back to the kiln exhaust stack. Therefore, only the emissions from the kiln stacks should be evaluated.

40 CFR 60 (New Source Performance Standards)

Kiln No. 3 is currently subject to the New Source Performance Standard (NSPS) for Portland Cement Plants. Pursuant to this rule, the kiln and alkali bypass system shall not exceed 0.3 pounds of particulate matter per ton of raw feed and 20 percent opacity. The clinker cooler shall not exceed 0.15 pounds of particulate matter per ton of raw feed and 10 percent opacity.

Kiln No. 1 and Kiln No. 2 are not currently subject to the NSPS for Portland Cement Plants because they were constructed and operated prior to the requirements of this rule. However, 40 CFR 63.14 (Modifications) defines any physical change that increases the particulate matter emissions or opacity emissions as a modification. Any modification is then required to comply with the requirements of this rule. Therefore, Kiln No. 1 and Kiln No. 2 shall be subject to the requirements of this rule if any of the compliance tests required by the construction permit show an increase in the particulate matter emissions or the opacity emissions from the burning of whole tires.

State Rule Applicability

326 IAC 3-1.1-1 (Continuous Monitoring of Emissions)

Kiln No. 1 and Kiln No. 2 are presently subject to Continuous Opacity Monitoring pursuant to 326 IAC 3-1.1-1(a)(4). The revised rules for continuous monitoring (326 IAC 3-5) became final on June 4, 1997, but have not yet become effective. This revised rule specifically requires portland cement plants to continuously monitor emissions from kilns and clinker coolers.

326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 100 tons per year of at least one (1) criteria pollutant. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by July 1 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 2-2 (Prevention of Significant Deterioration)

The emissions from the proposed modification (tire combustion) were developed from other stack

test data performed at similar facilities in other states. Because these facilities are not the exact same process, stack tests will be required to ensure that the pollutants do not exceed the PSD threshold levels. If any pollutant does exceed the PSD threshold levels, the source is required to cease the tire burning operations until the permit is modified.

326 IAC 5-1-2 (Visible Emissions)

Kiln No. 1, Kiln No. 2, and Kiln No. 3 are subject to the visible emissions requirements of this rule. According to this rule, visible emissions shall not exceed an average of 40 percent opacity in any 24 consecutive reading and 60 percent opacity for more than a cumulative total of 15 minutes in any 6 hour period. The visible emissions from Kiln No. 3 shall be limited by the visible emissions requirements of 40 CFR 60.62 (NSPS for Portland Cement Plants) because it represents the more stringent limit. Kiln No. 3 is presently subject to the requirements of this rule; however, if the results of the stack tests show an increase in particulate matter or opacity from the combustion of whole waste tires, then Kiln No. 2 and Kiln No. 3 are considered a modification as defined in 40 CFR 60.14 and shall be subject to the more stringent requirements of 40 CFR 60.62.

326 IAC 6-3-2 (Particulate Matter Emission Limitations)

Kiln Nos. 1, 2, and 3 are subject to the requirements of 326 IAC 6-3-2. According to this rule, if any limitation established by this rule is inconsistent with applicable limitations contained in 326 IAC 12 (NSPS), then the limitation contained in 326 IAC 12 shall apply. This modification to Kiln No. 3 is subject to the requirements of 326 IAC 12, and therefore shall comply with these requirements over those stated in 326 IAC 6-3-2. The process operations from Kiln No. 1 and Kiln No. 2 are in compliance with this rule because the potential controlled PM emissions are less than the calculated allowable PM emissions. The emission calculations for these process operations are shown in Appendix A.

326 IAC 6-4 (Fugitive Dust Emissions Limitations)

The source is subject to the requirements of 326 IAC 6-4. According to this rule, the source shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM.

326 IAC 6-5 (Fugitive Particulate Matter Emissions Limitations)

The fugitive particulate matter emissions shall be controlled according to the *Fugitive Particulate Matter Emission Control Plan*.

326 IAC 7-1.1-2 (Sulfur Dioxide Limitations)

The sulfur dioxide emissions from fuel combustion facilities (Kiln No. 1, Kiln No. 2, and Kiln No. 3) shall be limited to 6.0 pounds per MMBtu for coal or coal blend combustion.

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) This modification will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.
- (b) See Appendix A for detailed air toxic calculations.

Conclusion

The construction of this modification to utilize whole waste tires as a supplemental fuel source will be subject to the conditions of the attached proposed **Construction Permit No. CP-093-4598-00002.**

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for New Construction and Operation

Source Name: Lehigh Portland Cement Company
Source Location: 121 North First Street, Mitchell, Indiana
County: Lawrence
Construction Permit No.: CP-093-4598-00002
SIC Code: 3241
Permit Reviewer: Michele M. Williams

On November 13, 1997, the Office of Air Management (OAM) had a notice published in the *Times-Mail*, Bedford, Indiana stating that Lehigh Portland Cement Company had applied for a construction permit to operate whole waste tire injection systems for Kiln No. 1, Kiln No. 2 and Kiln No. 3 to accommodate the use of whole waste tires as a supplemental fuel at a maximum heat input rate of 22 percent, 22 percent and 26 percent, respectively. Particulate matter emissions will be controlled by the use of existing electrostatic precipitators, each rated at 99.6 percent control efficiency. The allowable emissions increase from the tire burning operations shall not equal or exceed 25 tons per year of particulate matter, 15 tons per year of particulate matter less than 10 microns in diameter, 40 tons per year of oxides of nitrogen, 40 tons per year of sulfur dioxide, 40 tons per year of volatile organic compounds, and 100 tons per year of carbon monoxide. Compliance tests shall be performed to ensure that the emissions from the tire burning operations do not equal or exceed these emission limitations. 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.

The following written comments to the proposed construction permit were prepared by Lehigh Portland Cement Company. The OAM reviewed these comments and has responded below:

Comment 1:

Kiln No. 3 is subject to New Source Performance Standards and Lehigh does and will continue to meet its obligations pursuant to 40 CFR Part 60. Lehigh believes that there will be no increase in particulate matter emissions from the combustion of waste tires and that Kiln Nos. 1 and 2 would not be subject to the NSPS reporting requirements. Lehigh understands that this must be demonstrated by a performance test.

Response 1:

As stated in Construction Condition B.6, Kiln Nos. 1 and 2 shall only be subject to the NSPS requirements (326 IAC 12 and 40 CFR 60.62) whenever a modification occurs. A "modification" is defined in 40 CFR 60.14 as any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere any pollutant to which a standard applies. The "increase in the emission rate" under NSPS regulations shall be calculated by comparing the hourly emission rate, at maximum physical capacity, before and after the physical or operational change. Any increase in the particulate matter emission rate from the baseline operations to the tire burning operations shall determine NSPS applicability for Kiln Nos. 1 and 2. Therefore this condition shall remain in the final permit.

The OAM does recognize the dynamic nature of the cement kiln operation. Therefore, the OAM will accept a stack test protocol that encompasses the day to day variability in the operation of the kiln. Samples of the raw material and fuel should also be collected during the stack test to account for some of the variability.

Comment 2:

Lehigh will adhere to the total of 500 waste tires at a single outdoor location required by Operation Condition C.11. However, Lehigh understands that a propose rule may change the number of tires to 1,000 for a single outdoor storage limit, and would request this change if the rule becomes effective.

Response 2:

The following condition was stated in the proposed permit as Operation Condition C.11:

“Pursuant to 329 IAC 12, no more than a total of 500 waste tires shall be accumulated at a single outdoor location without receiving the proper approval from the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management. All other waste tires on-site shall be stored in covered trucks that are permitted to transport waste tires.”

The OAM has revised Operation Condition C.11 in the final permit as follows:

“The Permittee shall not accumulate waste tires at a single outdoor location over the amount specified in 329 IAC 12 without receiving the proper approval from the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management. All other waste tires on-site shall be stored in covered trucks that are permitted to transport waste tires.”

Comment 3:

Lehigh believes that the Mitchell Plant is not subject to Operation Condition C.13 - Fugitive Particulate Matter Emissions and requests that this condition be removed from the permit. The facility is not in a non-attainment area; it is not a new source; and the facility will comply with its obligations under 40 CFR Part 70.

Response 3:

The OAM agrees and has therefore removed this condition from the final permit. Operation Condition C.12 of the proposed permit already requires Lehigh to comply with the requirements of 326 IAC 6-4 (Fugitive Dust Emissions).

Comment 4:

Lehigh believes that the Department, at this time, should not propose a dioxin/furan limitation as required by Operation Conditions D.1.3, D.2.3, and D.3.3 until after a performance test is conducted. Lehigh believes that the proposed portland cement MACT rule, which could be published in the Federal Register in the near future and mandates a compliance schedule of November, 2000 is more appropriate to follow. Lehigh requests the Department to remove the emission limitation until a performance test is completed.

Response 4:

The following condition was stated in the proposed permit as Operation Conditions D.1.3, D.2.3, and D.3.3:

“Pursuant to 326 IAC 2-1-3(i)(8), the dioxin/furan emissions, during the combustion of waste tires as a supplemental fuel, shall not exceed 8.7×10^{-11} grains of 2,3,7,8-tetrachlorodibenzo-p-dioxin equivalents per dry standard cubic feet (gr TEQ/dscf) corrected at 7 percent oxygen unless:

- (a) the dioxin/furan stack test shows a higher result; and
- (b) the stack test, or subsequent test shows that the temperature at the inlet of the control device is less than 400 degrees Fahrenheit and does not exceed 1.7×10^{-10} gr TEQ/dscf corrected at 7 percent oxygen.

The compliance stack tests required by Operation Condition D.1.5 shall establish which of these limits is appropriate.”

The OAM has revised Operation Conditions D.1.3, D.2.3, and D.3.3 in the final permit as follows to allow the limit to be superseded by the NESHAP:

- (a) “Pursuant to 326 IAC 2-1-3(i)(8), the dioxin/furan emissions, during the combustion of waste tires as a supplemental fuel, shall not exceed 8.7×10^{-11} grains of 2,3,7,8-tetrachlorodibenzo-p-dioxin equivalents per dry standard cubic feet (gr TEQ/dscf) corrected at 7 percent oxygen unless:
 - (1) the dioxin/furan stack test shows a higher result; and
 - (2) the stack test, or subsequent test shows that the temperature at the inlet of the control device is less than 400 degrees Fahrenheit and does not exceed 1.7×10^{-10} gr TEQ/dscf corrected at 7 percent oxygen.

The compliance stack tests required by Operation Condition D.1.5 shall establish which of these limits is appropriate.

- (b) **The Permittee shall comply with the dioxin/furan emission limitation required by the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Portland Cement Manufacturing Plants (40 CFR 63 and 326 IAC 20) upon promulgation. This rule shall supersede the dioxin/furan emission limitation required by (a) above.”**

Comment 5:

Lehigh does not operate an in-line raw mill at this facility; therefore, Operation Conditions D.1.5(b), D.2.5(b) and D.3.5(b) (Initial Performance Testing) should be removed. Lehigh intends to conduct the performance testing for dioxins/furans but requests no emission limitation at this time.

Response 5:

The OAM has revised Operation Conditions D.1.5(b), D.2.5(b) and D.3.5(b) to properly describe the facility. The proposed permit condition was written as follows:

“Compliance tests shall be conducted **when the raw mill is in operation and the kiln is utilizing a fuel combination** of coal and whole waste tires....”

Operation Conditions D.1.5(b), D.2.5(b), and D.3.5(b) have been revised in the final permit as follows:

“Compliance tests shall be conducted **when the kiln is utilizing a fuel combination** of coal and whole waste tires....”

Comment 6:

Lehigh requests the removal of the dioxin/furan testing from Operation Conditions D.1.6(a), D.2.6(a), and D.3.6(a) (Performance Testing) at this time. Temperature measurement could be a substitute for performance testing and should be based upon the initial performance test.

Response 6:

Temperature is not the only measurement necessary to demonstrate compliance with the dioxin/furan emission limitation. As stated in Operation Condition D.1.3, the dioxin/furan emissions, during the combustion of waste tires as a supplemental fuel, shall not exceed 8.7×10^{-11} grains of 2,3,7,8-tetrachlorodibenzo-p-dioxin equivalents per dry standard cubic feet (gr TEQ/dscf) corrected at 7 percent oxygen unless the dioxin/furan stack test shows a higher result and the stack test, or subsequent test shows that the **temperature at the inlet of the control device is less than 400 degrees Fahrenheit and does not exceed 1.7×10^{-10} gr TEQ/dscf corrected at 7 percent oxygen.**

Therefore, the stack testing requirements for dioxin/furan emissions shall remain in these operation conditions in the final permit.

Comment 7:

Please delete all references to NSPS determination applicability in Operation Condition D.3.5 as Kiln No. 3 is currently subject to the NSPS.

Response 7:

The OAM has removed all references to NSPS applicability in Operation Condition D.3.5(a) and D.3.5(b) because Kiln No. 3 is already subject to NSPS requirements.

In addition to the above comments, a citizen of Mitchell, Indiana wanted to express her concern of the public health from the impact of burning tires. The OAM offers the following response:

The OAM believes that the conditions contained in the construction permit will ensure that the burning of tires will not have a significant impact on air quality or increase any risk to public health.

All of the technical information available to the OAM indicates that substituting tires for up to 26% of the heat input now supplied by coal will result in little difference in the emissions of air pollutants. While the best estimate of carbon monoxide (CO) emissions indicate that there may be an increase of about 60 tons per year, this is well below the 100 ton per year level that is considered significant and therefore trigger the requirements of the Prevention of Significant Deterioration provisions of the Clean Air Act. The impact of tire burning on the CO emissions and other pollutants is included in Appendix A of this document. The permit requires stack testing to determine the effect that burning tires has on the emissions of the regulated pollutants and hazardous air pollutants that are not yet specifically regulated. There are specific conditions that are established to: 1) demonstrate compliance with all currently applicable requirements; 2) ensure that emissions do not increase in the amounts that would trigger new applicable requirements; and 3) establish an emission limitation on dioxins and furans to protect public health.

Dioxin is a particularly hazardous air pollutant and the construction permit requires that Lehigh comply with a limitation on dioxin/furan emissions when burning tires. The impact of dioxins and furans emitted at the permitted allowable rate will not cause a significant increase in health risk. The OAM arrived at this conclusion based on the following information:

1. According to the February 14, 1997 draft of the Proposed National Emissions Standard of Hazardous Air Pollutants (NESHAP) for Portland Cement Manufacturing Plants, the concentration limitation for dioxins and furans is 0.2 nanograms of TEQ per dry standard cubic meter (ng TEQ/dscm). The permit establishes this limitation any time that Lehigh is burning tires.
2. According to the US EPA Health Effects Assessment Summary Tables published in 1991,, the air concentration of TCDD (a dioxin) associated with a one in a million lifetime cancer risk is 3.3×10^{-4} ng/M³.

The OAM used an air quality dispersion model to determine the mass emission rate that would result in that 3.3×10^{-4} ng/M³ ambient concentration. That ambient air quality impact would represent a worst-case one in one million increase in cancer risk. The draft NESHAP concentration limit included in the permit limits mass emissions below this rate as presented below:

	Concentration Levels, ng/M ³	Emission Rates, LBS TEQ/hr
Draft NESHAP Limitation	0.20 corrected to 7%O ₂	* 9.79×10^{-8}
Unit Cancer Risk Factor	0.33	1.05×10^{-7}

* This emission rate represents the mass emissions from Stack S-14 of Kiln No. 1, Stack S-15 of Kiln No. 2, and Stack S-16 of the Kiln No. 2 alkali bypass system.

The permit requires compliance testing to determine the effects that burning tires has on the emissions of the regulated pollutants and hazardous air pollutants that are not yet specifically regulated. There are specific conditions required by the permit to: 1) demonstrate compliance with all currently applicable requirements; 2) ensure that emissions do not increase in the amounts that would trigger new applicable requirements; and 3) establish an emission limitation on dioxins and furans to protect public health.

Dioxin/furan emission limitations have been incorporated into Operation Conditions D.1.3, D.2.3, and D.3.3 of the construction permit. To ensure that Lehigh can comply with the dioxin/furan emission

limitations, Operation Conditions D.1.5, D.2.5, and D.3.5 (Initial Performance Testing) and Operation Conditions D.1.6, D.2.6, and D.3.6 (Performance Testing) requires stack tests for dioxins/furans.