

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Kokomo Grain Company
1002 West Morgan Street
Kokomo, IN 46901**

is hereby authorized to construct

One (1) 96.9 MMBtu/hr natural gas-fired grain dryer, including a settling chamber and a column plate with perforations of 0.078 and 0.063 inches in diameter, with a design 10,000 bushels per hour, replacing three (3) natural gas-fired grain dryers, each with a design capacity of 3,500 bushels per hour.

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-067-9971-00006	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

Construction Conditions

General Construction Conditions

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

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:
 - (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
 - (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
 - (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

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

Effective Date of the Permit

4. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
5. That 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.
6. That notwithstanding Construction Condition No. 6, 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).

First Time Operation Permit

7. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
 - (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
 - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1-7.1(Fees).
 - (e) Pursuant to 326 IAC 2-1-4, the Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date established in the validation letter. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.
8. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

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

Transfer of Permit

3. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):
 - (a) In the event that ownership of this grain dryer is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
 - (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.

- (c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

- 4. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:
 - (a) Violation of any conditions of this permit.
 - (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
 - (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
 - (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
 - (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

- 5. That 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 the IDEM, (local agency if applicable) or other public official having jurisdiction.

Malfunction Condition

- 6. That 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 the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.
 - (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
 - (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

Opacity Limitations (326 IAC 5-1-2)

- 7. That pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:
 - (a) visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.
 - (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

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

- 8. That pursuant to 326 IAC 6-3 (Process Operations), the PM emissions for a maximum process weight rate of 300 tons per hour shall not exceed the allowable particulate matter (PM) emission rate of 56.85 pounds per hour.

PSD Minor Source Limit (326 IAC 2-2 and 40 CFR 52.21)

- 9. That:
 - (a) the input grain of the grain dryer shall be limited to the following schedule:

January 1	-	August 31	-----	35,997,568 tons of grain
September 1	-	December 31	-----	48,000,000 tons of grain
 - (b) the input grain shall be limited to 35,997,568 tons from January to August of each year, rolled on a monthly basis and 48,000,000 tons from September to December of each year, rolled on a monthly basis. This production limitation will limit the total particulate matter (PM) emissions from the grain dryer to 246.9 tons per year, rolled on a monthly basis. Therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.

Record Keeping and Reporting Requirements

- 10. That pursuant to 326 IAC 2-1-3(i), a log of information necessary to document compliance with operation condition No. 9 shall be maintained. These records shall be kept for at least the past 36 month period and made available upon request by the Office of Air Management (OAM).
 - (a) A quarterly summary of the amounts of grain processed in the dryer shall be submitted to:

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

Within 30 days after the end of the quarter being reported in the format attached.

- (b) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:
 - (i) Delivered by U.S. mail and postmarked on or before the date it is due; or
 - (ii) Delivered by any other method if it is received and stamped by IDEM, OAM on or before the date that it is due.
- (c) All instances of deviations from any requirements of this permit must be clearly identified in such reports.
- (d) The first report shall cover the period commencing the postmarked submission date of the Affidavit of Construction.

Indiana Department of Environmental Management Office of Air Management Compliance Data Section

Material:	Grain processed in the grain dryer.
Limit:	C 35,997,568 tons of grain from January 1 to August 31, rolled on a monthly basis. C 48,000,000 tons of grain from September 31 to December 31, rolled on a monthly basis.

Quarter/Year: _____

Month	Grain Processed This Month (tons)	Grain Processed in the Last 8 Months From January - August (tons)	Grain Processed in the Last 4 Months From September - December (tons)

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

326 IAC 1-6-1 Applicability of rule

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

326 IAC 1-2-39 “Malfunction” definition

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

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

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

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name: Kokomo Grain Company
 Source Location: 1002 West Morgan Street, Kokomo, IN 46901
 County: Howard
 Construction Permit No.: CP-067-9971-00006
 SIC Code: 5153
 Permit Reviewer: SDF

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

one (1) 96.9 MMBtu/hr natural gas-fired grain dryer replacing three (3) existing grain dryers.

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 July 22, 1998, with additional information received on August 26, 1998.

Emissions Calculations

See Emission Calculations for detailed calculations (8 pages).

Total Potential and Allowable Emissions

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

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	820.2	259.6
Particulate Matter (PM10)	N/A	N/A
Sulfur Dioxide (SO ₂)	neg.	neg.
Volatile Organic Compounds (VOC)	2.3	2.3
Carbon Monoxide (CO)	35.7	35.7
Nitrogen Oxides (NO _x)	32.3	32.3
Single Hazardous Air Pollutant (HAP)	2.3	2.3
Combination of HAPs	2.3	2.3

- (a) Allowable PM emissions are determined from the applicability of rule 326 IAC 6-3. See attached spreadsheets for detailed calculations. The potential PM emissions before controls are less than the allowable PM emissions. Therefore, the PM potential emissions before controls are used for permitting determination.
- (b) All other pollutant allowable emissions equal the estimated potential emissions. Thus, the adjusted allowable emission rates used to determine permit applicability for these pollutants are the potential emission rates.
- (c) Pursuant to 326 IAC 2-1-3, sources with allowable emissions (as defined in the Indiana Rule) of 25 tons per year of any regulated pollutant, 10 tons per year of any single hazardous air pollutant (HAP), and/or 25 tons per year combined HAP emissions shall obtain a construction permit.

Allowable emissions (as defined in the Indiana Rule) of particulate matter (PM), oxides of nitrogen (NOx) and carbon monoxide (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) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Howard County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Howard 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 a source wide production limit equivalent to 50 tons PM and PM10 per year pursuant to 326 IAC 2-11):

Pollutant	Emissions (ton/yr)
PM	50
PM10	50

- (a) This existing source is **not** a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.
- (b) This existing source is **not** a major source because the source has claimed permit by rule pursuant to 326 IAC 2-11.

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)
Proposed Modification	249	N/A	neg.	2.3	35.7	32.3
PSD Threshold	250	250	250	250	250	250

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from this permit **CP-067-9971-00006**, is still not subject to the Part 70 Permit requirements because the source has claimed permit by rule pursuant to 326 IAC 2-11 which limits the emissions such that:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

Federal Rule Applicability

(1) New Source Performance Standards [326 IAC 12 (40 CFR 60)]:

Standards of Performance for Grain Elevators [40 CFR 60.300 - 60.304, Subpart DD]:

The proposed column grain dryer is subject to the requirements of Subpart DD because the grain dryer is new and is a facility at a grain storage elevator with a permanent grain storage capacity greater than the minimum applicable capacity of 1,000,000 bushels. However, based on the type and design of the grain dryer, there are no applicable standards or testing requirements that apply in this case. The following paragraphs list the detailed applicability analysis of this rule:

Standards for Particulate Matter [60.302(a), (b), (c), and (d)]:

The requirements of 40 CFR 60.302(a) do not apply to the proposed grain dryer because the column dryer plate perforation is determined to be 0.078 and 0.063 inches in diameter which is less than the applicable plate perforation of 0.094 inches.

In order to ensure that the plate perforation does not exceed the applicable diameter, the plate perforation diameter will be limited to 0.094 inches. Satisfaction of this requirement will make the requirements of 40 CFR 60.302(a) not applicable in this case.

The requirements of 40 CFR 60.302(b) do not apply because the requirements under this section does not apply to grain dryers.

The requirements of 40 CFR 60.302(c) do not apply to the proposed grain dryer because this section does not apply to grain dryers.

The requirements of 40 CFR 60.302(d) do not apply to the proposed grain dryer because this section does not apply to grain dryers.

Test Methods and Procedures [60.303]:

The performance testing requirements of 40 CFR 60.303 do not apply to the proposed grain dryer because there are no applicable standards under this subpart that apply.

Modifications [60.304]:

The modification specifications of 40 CFR 60.304 do not apply because the proposed grain elevator is new.

(2) National Emission Standards for Hazardous Air Pollutants [40 CFR 61]:

There are no emission standards under this part that apply to the proposed dryer.

(3) National Emission Standards for Hazardous Air Pollutants [40 CFR 63]:

There are no emission standards under this part that apply to the proposed dryer.

State Rule Applicability

(1) 326 IAC 1-5 (Emergency Reduction Plans):

Pursuant to 326 IAC 1-5-2, sources with potential to emit (PTE) of 100 tons per year or more of any pollutant, shall prepare and submit to the Commissioner for approval, written emergency reduction plans consistent with safe operating procedures. The requirements under 326 IAC 1-5 do not apply because no pollutant PTE exceed the applicable level of 100 tons per year.

(2) 326 IAC 1-6 (Notice of Malfunction):

Pursuant to 326 IAC 1-6, the owner or operator of any facility required to obtain a permit under 326 IAC 2-1-2 and 326 IAC 2-1-4 shall meet the requirements of this rule. As per staff comments, until such time that the source applies for Permit by Rule under 326 IAC 2-11, the source shall be subject to the requirements of 326 IAC 2-1-4.

Thus, the requirements of 326 IAC 1-6 shall be included in this construction permit and the Permittee shall comply with the requirements of 326 IAC 2-1-4 (326 IAC 1-6) until the source claims Permit by Rule pursuant to 326 IAC 2-11.

(3) 326 IAC 1-7 (Stack Height Provisions):

The stack height provisions of 326 IAC 1-7 do not apply because there are no stacks associated with the proposed dryer.

(4) 326 IAC 2-6 (Emission Reporting):

Pursuant to 326 IAC 2-6-1, sources with PTE of PM10, SO2, NOx, VOC, or CO emissions greater than one hundred (100) tons per year, are subject to the requirements of this rule.

No pollutant PTE from this source exceed 100 tons/yr. Thus, 326 IAC 2-6 does not apply.

(5) 326 IAC 5-1-2 (Visible Emission Limitations):

The 326 IAC 5 visible emission limitations apply to any source or facility that generates visible emissions, not including condensed water vapor. This source is subject to 326 IAC 5-1-2 (Visible Emission Limitations) because this source generates applicable visible emissions.

Pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

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

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

The proposed dryer is not subject to the requirements of 326 IAC 6-2 because the dryer is a source of indirect heating.

(7) 326 IAC 6-3 (Particulate Emission Limitations for Process Operations):

Pursuant to 326 IAC 6-3, sources of PM that are not a source of combustion for indirect heating, an incinerator, a source of open burning, or an existing foundry cupola, or if the unit, process, or operation, is not limited by any other PM requirements under Article 6, a NSPS, or Part 70 permit in accordance with 326 IAC 2-7-24, are subject to the requirements of 326 IAC 6-3. The PM emissions generated by the proposed dryer are not any of the above mentioned exemptions. Thus, 326 IAC 6-3-2 applies.

Pursuant to 326 IAC 6-3-2, the allowable PM emissions for a process weight rate of 300 tons per hour is determined to be 187.26 lb/hr which is equivalent to 820.20 tons PM/yr. This estimated annual rate exceeds the PSD major source thresholds under 326 IAC 2-2 (250 tons/yr).

Thus, in order to avoid PSD review, the hourly PM emission limitation under 326 IAC 6-3-2 shall be limited to the adjusted rate of 56.85 lb/hr, an hourly rate that is equivalent to the annual allowable rate of 249 tons/yr.

The production has been limited to 83,979,571 bushels of grain per year which limits the PM emissions to 246.9 tons per year which combined with the combustion emissions from the dryer, yield total PM emissions of 249 tons per year, or 56.85 lb/hr which does not exceed the 326 IAC 6-3 limit. Thus, compliance is determined to be achieved.

(8) 326 IAC 7 (SO2 Emission Limitations):

Pursuant to 326 IAC 7-1.1-1, all facilities with potential to emit of 25 tons per year or 10 pounds per hour of SO₂ are subject to the requirements of this rule. Since the SO₂ emissions (neg.) are less than the applicable levels, this rule does not apply.

Air Toxic Emissions

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

The proposed grain dryer 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.

Conclusion

The construction of this proposed grain dryer will be subject to the conditions of the attached proposed **Construction Permit No. CP-067-9971-00006**.

Emission Calculations

Kokomo Grain Co.

Kokomo Grain Company has submitted an application to replace three (3) existing grain dryers with one (1) 96.9 MMBtu/hr natural gas-fired grain dryer.

The emissions generated by this proposed dryer are all of the criteria pollutants (PM, PM10, SO2, NOx, VOC, CO), and HAPs in the form of VOCs. There are no controls associated with the proposed dryer.

The following calculations determine the potential, allowable, and potential emissions after controls.

Potential Emissions:

1. Dryer Combustion Emissions:

The following calculations determine the potential emissions from the proposed dryer based on natural gas combustion, a maximum design capacity of 96.9 MMBtu/hr, 8,760 hours of operation, emission factors from AP-42, Chapter 1.4, 04/97 updates, and emissions without the use of controls.

The following are a summary of the emission calculation results as calculated using the attached standard combustion spreadsheets.

	PM tons/yr	PM10 tons/yr	SO2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr
Combustion	2.1	N/A	neg.	32.3	2.3	35.7

2. Dryer Process PM Emissions:

The following calculation determine the potential process PM emissions based on a maximum production rate of 10,000 bushels per hour, 56 pounds of corn per bushel, 8,760 hours of operation, and emission factors obtained from EPA AP-42 Guidance, "Emission Factor Documentation for AP-42 Section 9.9.1, Grain Elevators and Grain Processing Plant (Draft)", July, 1997, Table 4-15:

$$10,000 \text{ Bu/hr} * 8760 \text{ hr/yr} * 56 \text{ lb/Bu} * 1/2000 \text{ ton/lb} = 2,452,800 \text{ ton grain/yr}$$
$$2,452,800 \text{ ton grain/yr} * 0.21 \text{ lb PM/ton grain} * 1/2000 \text{ ton/lb} = 257.54 \text{ ton PM/yr}$$

Allowable Emissions:

1. Dryer Combustion Emissions:

The dryer allowable combustion emissions are determined to be equal to the potential emissions.

2. Dryer Process PM Emissions:

The allowable PM emissions from the proposed dryer are determined based on 326 IAC 6-3. Pursuant to 326 IAC 6-3, the allowable PM emissions for a process weight rate of 300.0 tons per hour is determined as follows:

$$E = 4.10 P^{0.67} = \text{lb PM/hr}$$

$$\text{lb PM/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = \text{ton PM/yr}$$

$$\text{ton PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb/ton} = \text{lb PM/day}$$

Combined Process Weight Rate, ton/hr	Allowable PM lb/hr	Allowable PM ton/yr	Allowable PM lb/day
300.0	187.26	820.22	4494.34

Emissions After Controls:

There are no controls associated with the dryer. Thus, the emissions after controls from the dryer equal the estimated potential emissions. The following is a listing of the estimated emissions after controls.

	PM tons/yr	PM10 tons/yr	SO2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr
combustion	2.1	N/A	neg.	32.3	2.3	35.7
Process	257.54	N/A	-	-	-	-
total	259.64	N/A	neg.	32.3	2.3	35.7

Emission Summary:

The following is a summary of the above estimated emission calculations:

	PM tons/yr	PM10 tons/yr	SO2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr
Potential	259.64	N/A	neg.	32.3	2.3	35.7
Allowable	820.22	N/A	neg.	32.3	2.3	35.7
After Controls	259.64	N/A	neg.	32.3	2.3	35.7

Rule Applicability:

Prevention of Significant Deterioration (PSD) Requirements [326 IAC 2-2]:

The potential emissions after controls are greater than the applicable level of 250 ton/yr.

	PM tons/yr	PM10 tons/yr	SO2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr
Dryer	259.64	N/A	neg.	32.3	2.3	35.7

App. Level	250 tons/yr	N/A	250 tons/yr	250 tons/yr	250 tons/yr	250 tons/yr
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In order to avoid the requirements of 326 IAC 2-2, the source production shall be limited in a manner that yields PM emissions of 249 ton/yr less the combustion emissions of 2.1 ton/yr, or 246.9 ton/yr.

$$246.9 \text{ ton PM/yr} * 2000 \text{ lb PM/ton PM} * 1/0.21 \text{ ton grain/ lb PM} = 2,351,428 \text{ ton grain/yr}$$

$$2,351,428 \text{ ton/yr} * 2000 \text{ lb/ton} * 1/56 \text{ Bu/lb} = 83,979,571 \text{ Bu grain/yr}$$

Thus, the production shall be limited to 83,979,571 bushels of grain per year.

Since Kokomo Grain Company is a seasonal company, this annual throughput limit shall be based on the following schedule:

Months	Limit Bu/Month	# Months	Total
January - August	4,497,446	8	35,997,568
September - December	12,000,000	4	48,000,000
		total	83,997,568

Records shall be kept and maintained to document compliance with the above limit. These records shall be kept for a minimum period of 36 months and made available to the Office of Air Management (OAM) upon request.

A quarterly summary 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 30 calendar days after the end of the quarter with the information being reported in the format specified in the permit.

State Construction Permits [326 IAC 2-1-3]:

Pursuant to 326 IAC 2-1-3, sources with adjusted allowable emissions of twenty-five (25) tons per year of any regulated pollutant, ten (10) tons per year of any single HAP, or twenty-five (25) tons per year combined, shall obtain a construction permit.

The adjusted allowable emissions are the lesser of the potential and any allowable emissions rate established based on a limitation required by a state or federal rule.

The potential PM emissions (259.64 ton/yr) are less than the estimated allowable emissions (820.22 ton/yr). Thus, the potential PM emissions are used to determine state permit applicability.

All other criteria pollutant allowable emissions are equal to their respective potential emission. Thus, the potential emission estimates are used for these pollutants. The following is a summary of the adjusted allowable emission rates:

	PM tons/yr	PM10 tons/yr	SO2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr
Dryer	259.64	N/A	neg.	32.3	2.3	35.7
Ap. Thresholds	25 tpy	N/A	25 tpy	25 tpy	25 tpy	25 tpy

Largest Single HAP tons/yr	Combined HAPs tons/yr
2.3	2.3

Applicable Level	10 tons/yr	25 tons/yr

The particulate matter (PM), oxides of nitrogen (NOx), and carbon monoxide (CO) emissions exceed their respective applicable levels. Thus, a state construction permit is required.

Emergency Reduction Plans [326 IAC 1-5]:

Pursuant to 326 IAC 1-5-2, sources with potential to emit (PTE) of 100 tons per year or more of any pollutant, shall prepare and submit to Commissioner for approval, written emergency reduction plans consistent with safe operating procedures.

Kokomo Grain Company has stated that they wish to avoid the Part 70 requirements by accepting the throughput limitations under permit by rule which ultimately limits the source grain elevator PM/PM10 emissions to 50 tons per year.

The potential emissions for all other pollutants at the source are determined to be the emissions generated by natural gas combustion in the proposed grain dryer. Since there are no controls associated with the grain dryer and there are combustion emission limitations associated with the grain dryer, the potential combustion emissions (all other pollutant emissions) are equal to the PTE.

	PM tons/yr	PM10 tons/yr	SO2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr
Source PTE	50	50	neg.	32.3	2.3	35.7

Ap. Thresholds	100 tpy					
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Since no source pollutant PTE exceed the applicable level of 100 tons per year, this rule does not apply.

Malfunctions [326 IAC 1-6]:

Pursuant to 326 IAC 1-6, the owner or operator of any facility required to obtain a permit under 326 IAC 2-1-2 and 326 IAC 2-1-4 shall meet the requirements of this rule. As per staff comments, until such time that the source applies for Permit by Rule under 326 IAC 2-11, the source shall be subject to the requirements of 326 IAC 2-1-4. Thus, the requirements of 326 IAC 1-6 shall be included in this construction permit and the Permittee shall comply with the requirements of 326 2-1-4 (326 IAC 1-6) until the source claims Permit by Rule pursuant to 326 IAC 2-11.

Stack Height Provisions [326 IAC 1-7]:

The stack height provisions of 326 IAC 1-7 do not apply because there are no stacks associated with the proposed grain dryer.

Emission Reporting [326 IAC 2-6]:

Pursuant to 326 IAC 2-6-1, sources with PM10, SO2, NOx, VOC, or CO emissions greater than one hundred (100) tons per year, are subject to the requirements of this rule.

	PM tons/yr	PM10 tons/yr	SO2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr
Source PTE	50	50	neg.	32.3	2.3	35.7

Ap. Thresholds	100 tpy					
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Since no pollutant emissions from this source exceed 100 tons per year, 326 IAC 2-6 does not apply.

Opacity Limitations [326 IAC 5]:

The proposed dryer is subject to 326 IAC 5-1-2, opacity limitations. Pursuant to this rule, except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

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

PM Emission Limitations for Sources of Indirect Heating [326 IAC 6-2]:

The proposed dryer not subject to 326 IAC 6-2 because the dryer is not a source of indirect heating.

PM Emission Limitations for Process Operations [326 IAC 6-3-2]:

The allowable PM emissions from the proposed dryer are determined based on 326 IAC 6-3. Pursuant to 326 IAC 6-3, the allowable PM emissions for a process weight rate of 300.0 tons per hour is determined as follows:

$$E = 4.10 P^{0.67} = \text{lb PM/hr}$$

$$\begin{aligned} \text{lb PM/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} &= \text{ton PM/yr} \\ \text{ton PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb/ton} &= \text{lb PM/day} \end{aligned}$$

Combined Process Weight Rate, ton/hr	Allowable PM lb/hr	Allowable PM ton/yr	Allowable PM lb/day
300.0	187.26	820.22	4494.24

The allowable PM emissions from the proposed dryer is estimated to be 187.26 lb/hr, or 820.22 tons/yr, which exceeds the PSD level of 250 tons/yr.

In order to avoid PSD review, the PM emissions limit shall be adjusted to 56.85 lb/hr, the hourly rate equivalent to the annual allowable rate of 249 tons/yr.

$$249 \text{ tons/yr} * 1/8760 \text{ yr/hr} * 2000 \text{ lb/ton} = 56.85 \text{ lb PM/hr}$$

The production has been limited to 83,979,571 bushels of corn per year which limits the PM emissions to 246.9 tons per year which combined with the combustion emissions from the dryer, yield total PM emissions of 249 tons/yr, or 56.85 lb/hr which does not exceed the 326 IAC 6-3 limit. Thus, compliance with this limit is determined to be achieved.

SO₂ Emission Limitations [326 IAC 7]:

Pursuant to 326 IAC 7-1.1-1, all facilities with potential to emit of twenty-five (25) tons per year or ten (10) pounds per hour of SO₂ are subject to the requirements of this rule. Since the SO₂ emissions (neg.) are less than the applicable thresholds, this rule does not apply.

New Source Performance Standards (NSPS) [326 IAC 12 (40 CFR 60)]:

Standards of Performance for Grain Elevators [40 CFR 60.300 -60.304, Subpart DD]:

The proposed column grain dryer is subject to the requirements of Subpart DD because the grain dryer is new and is a facility at a grain storage elevator with a permanent grain storage capacity greater than the minimum applicable capacity of 1,000,000 bushels. However, based on the type and design of the grain dryer, there are no applicable standards or testing requirements that apply in this case. The following paragraphs list the detailed applicability analysis of this rule.

Standards for Particulate Matter [60.302(a), (b), (c), and (d)]:

The requirements of 40 CFR 60.302(a) do not apply to the proposed grain dryer because the column dryer plate perforation is determined to be 0.078 and 0.063 inches in diameter which is less than the applicable plate perforation of 0.094 inches.

In order to ensure that the plate perforation does not exceed the applicable diameter, the plate perforation will be limited to 0.094 inches. Satisfaction of this requirement will make the requirements of 40 CFR 60.302(a) not applicable in this case.

The requirements of 40 CFR 60.302(b) do not apply to the proposed grain dryer because this section does not apply to grain dryers.

The requirements of 40 CFR 60.302(c) do not apply to the proposed grain dryer because this section does not apply to grain dryers.

The requirements of 40 CFR 60.302(d) do not apply to the proposed grain dryer because this section does not apply to grain dryers.

Test Methods And Procedures [60.303]:

The performance testing requirements of 40 CFR 60.303 do not apply to the proposed grain dryer because there are no applicable standards under this subpart that apply.

Modifications [60.304]:

The modification specifications of 40 CFR 60.304 do not apply because the proposed grain elevator is new.

National Emission Standards for Hazardous Air Pollutants [40 CFR 61]:

There are no emission standards under this part that apply to the proposed dryer.

National Emission Standards for Hazardous Air Pollutants [40 CFR 63]:

There are no emission standards under this part that apply to the proposed dryer.

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MMBTU/HR <100**

Utility Boiler

Company Name: Kokomo Grain Co.
Address City IN Zip: 1002 W. Morgan Street, Kokomo, IN 46903
CP: 067-9971
Plt ID: 00006
Reviewer: SDF
Date: 07-29-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

96.9

848.8

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	2.1	2.1	0.3	32.3	2.3	35.7

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: Uncontrolled = 550, Low NOx Burner = 81, Flue gas recirculation = 53

Emission Factors for CO: Uncontrolled = 40, Low NOx Burner = ND, Flue gas recirculation = ND

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

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04

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

**Appendix A: Emission Calculations
Natural Gas Combustion Only
MMBTU/HR >100**

Utility Boiler

Company Name: Kokomo Grain Co.
Address City IN Zip: 1002 W. Morgan Street, Kokomo, IN 46903
CP: 067-9971
Plt ID: 00006
Reviewer: SDF
Date: 07-29-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

101.7

890.9

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	550.0	1.4	40.0
Potential Emission in tons/yr	2.2	2.2	0.3	245.0	0.6	17.8

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: Uncontrolled = 550, Low NOx Burner = 81, Flue gas recirculation = 53

Emission Factors for CO: Uncontrolled = 40, Low NOx Burner = ND, Flue gas recirculation = ND

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

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04

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