



Permitting Options

Grain Elevators

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Overview

Office of Air Quality (OAQ) Permitting staff will provide information about:

- Permit approvals for grain elevators:
 - Permit by Rule (PBR) [326 IAC 2-11-3].
 - Permit by Rule (PBR) [326 IAC 2-10].
 - Source Specific Operating Agreement (SSOA) for a Grain Elevator Operation [326 IAC 2-9-6].
 - Minor Source Operating Permit (MSOP) [326 IAC 2-6.1].
 - Part 70 Operating Permit (Title V) [326 IAC 2-7].
 - Federally Enforceable State Operating Permit (FESOP) [326 IAC 2-8].
- Common permit requirements.
- Potentially applicable state and federal rules.



Permit By Rule (PBR) for Grain Elevators [326 IAC 2-11-3]

A PBR for a grain elevator can be an option for sources that can comply with the following limitations:

Rule Citation	Type of Grain Receiving and Shipping	Annual Throughput Limit
326 IAC 2-11-3(b)(1)	For <u>truck or rail grain receiving</u> and <u>truck or rail grain shipping</u>	11,200,000 bushels/year
326 IAC 2-11-3(b)(2)	For <u>truck or rail grain receiving</u> and <u>barge grain shipping</u>	8,000,000 bushels/year
326 IAC 2-11-3(b)(3)	For <u>truck or rail grain receiving</u> and <u>ship grain shipping</u>	5,680,000 bushels/year



PBR for Grain Elevators [326 IAC 2-11-3]

What operations/activities are covered under a PBR for grain elevators?

- Grain receiving/unloading by truck or rail.
- Grain handling (e.g., headhouse, gallery belt, tripper belt).
- Grain silo loading and unloading.
- Grain shipping/loadout by truck, rail, barge, or ship.

326 IAC 2-11-3 PBR for grain elevators was originally developed for small grain elevators that primarily operate during the harvest season.



PBR for Grain Elevators [326 IAC 2-11-3]

What operations/activities are not covered under a PBR for grain elevators?

- Grain cleaning, drying, and grinding/milling.
- All other pollution emitting activities/equipment (e.g., fuel combustion in stationary equipment such as boilers, heaters, furnaces, dryers, generators, etc.)



PBR for Grain Elevators [326 IAC 2-11-3]

Requirements under 326 IAC 2-11-3 (PBR for grain elevators):

- Operate and properly maintain air pollution control devices at the source. [326 IAC 2-11-1(g)(1)].
- Follow generally accepted industry work practices to minimize emissions of regulated air pollutants. [326 IAC 2-11-1(g)(2)].
- Not discharge air pollutants so as to create a public nuisance. [326 IAC 2-11-1(g)(3)].
- Comply with any applicable federal, state, and local requirements. [326 IAC 2-11-1(h)].
- Upon request by IDEM OAQ, provide grain throughput records for the previous 12 months in order to demonstrate compliance with 326 IAC 2-11-3. [326 IAC 2-11-1(f)].



PBR for Grain Elevators [326 IAC 2-11-3]

- New sources are not required to obtain a construction permit prior to operating under a 326 IAC 2-11-3 PBR.
- You may add, modify, or replace equipment or operations without informing IDEM OAQ, provided that the grain elevator would still qualify for a 326 IAC 2-11-3 PBR (i.e., would still be a simple grain elevator that would still comply with the PBR requirements).
- A 326 IAC 2-11-3 PBR does not have to be renewed.
- There are no permit fees to operate under a 326 IAC 2-11-3 PBR.



Additional Options for a Grain Elevator

If a grain elevator does not qualify for a 326 IAC 2-11-3 PBR, what are the other permitting options?

- Permit By Rule (PBR) [326 IAC 2-10].
- Registration [326 IAC 2-5.5].
- Source Specific Operating Agreement (SSOA) for Grain Elevators [326 IAC 2-9-6].
- Minor Source Operating Permit (MSOP) [326 IAC 2-6.1].
- Federally Enforceable State Operating Permit (FESOP) [326 IAC 2-8].
- Part 70 Operating Permit (Title V) [326 IAC 2-7].



Permit By Rule (PBR) [326 IAC 2-10]

- Requires source-wide emissions for each consecutive 12-month period to be less than 20% of Part 70 major source thresholds, **without** the consideration of air pollution control devices.
 - The 20% emission level is typically 20 tons per year of PM, PM10, PM2.5, VOC, SO₂, NO_x and CO, 5 tons per year total HAPs, and 2 tons per year for each single HAP.
 - Indiana has a few ozone non-attainment counties that currently have 20% VOC and NO_x emission levels set at 10 tons per year.
- Grain elevators would not likely qualify for 326 IAC 2-10 PBR (i.e., not practical/feasible).
- Based on calculations, a grain elevator with drying and cleaning would need to operate with an annual throughput of less than 330,000 bushels per year in order to remain below 20% of the Part 70 major source thresholds.
- If you believe that you can operate under 20% of the Part 70 major source thresholds without consideration of control devices, we encourage you to reach out to IDEM's Compliance and Technical Assistance Program (CTAP) for further discussion and evaluation.

Registration [326 IAC 2-5.1]

- Source-wide potential to emit (PTE) of PM, PM10, PM2.5, VOC, SO2, NOx and CO, must be less than 25 tons per consecutive 12-month period, each, **without** the consideration of air pollution control devices.
- Grain elevators would not likely qualify for a Registration (i.e., not practical/feasible).
- Based on calculations, a grain elevator with drying and cleaning would need to operate with an annual throughput of less than 420,000 bushels per year in order to operate under a Registration.
- If you believe that you qualify for a Registration, we encourage you to reach out to IDEM's CTAP for further discussion and evaluation.



Source Specific Operating Agreement (SSOA) for Grain Elevators [326 IAC 2-9-6]

A SSOA for grain elevators is an option for sources that can comply with the following limitations:

Rule Citation	Type of Grain Elevator	Annual Throughput Limit
326 IAC 2-9-6(2)	Grain elevator with storage capacity \leq 1,000,000 bushels (application of mineral or soybean oil not required)	3,000,000 bushels/year
326 IAC 2-9-6(3)	Grain elevator with storage capacity $>$ 1,000,000 bushels, but \leq 2,500,000 bushels (with application of mineral or soybean oil to all grain at an application rate of 0.03% by weight or greater)	10,000,000 bushels/year

SSOA for Grain Elevators [326 IAC 2-9-6]

What operations/activities are covered under a SSOA for grain elevators?

- Grain receiving/unloading.
- Grain handling (e.g., headhouse, gallery belt, tripper belt).
- Grain storage (silo loading and unloading).
- Grain cleaning.
- Grain drying (particulate matter emissions only; does not include fuel combustion emissions).
- Grain shipping/loadout.

SSOA for Grain Elevators [326 IAC 2-9-6]

- A source may apply for up to four different types of SSOAs provided that the total source-wide allowable emissions, or PTE, of each regulated air pollutant, as limited under the SSOAs, do not exceed the major source thresholds (Part 70/PSD/emission offset) when aggregated.
 - Typically, this limits source-wide emissions to less than 100 tons per consecutive 12-month period of PM, PM10, PM2.5, VOC, SO2, NOx and CO, each, each single HAP to less than 10 tons per consecutive 12-month period, and total HAPs to less than 25 tons per consecutive 12-month period.
- Additional SSOAs may be required for other emission units at the source. For a grain elevator, common examples include:
 - External combustion SSOA under 326 IAC 2-9-13 for fuel combustion in grain dryers.
 - Internal combustion SSOA under 326 IAC 2-9-14 for fuel-fired stationary engines/generators.



SSOA for Grain Elevators [326 IAC 2-9-6]

What additional emission units can be included in a SSOA?

- Additional equipment with a combined PTE under exemption thresholds may be included in a SSOA.
 - 326 IAC 2-1.1-3(e)(1) exemption thresholds include:
 - (A) 5 tons per year of either PM, PM10, or direct PM2.5.
 - (B) 10 tons per year of SO₂.
 - (C) 10 tons per year of NO_x.
 - (D) 10 tons per year of VOC.
 - (E) 25 tons per year of CO.
 - (G) 1 ton per year of a single HAP or 2.5 tons per year of any combination of HAPs listed pursuant to Section 112(b) of the CAA.
- Examples include:
 - Small fuel combustion units (boilers, heaters, furnaces).
 - Small stationary generators and emergency generators.

SSOA for a Grain Elevator Operation [326 IAC 2-9-6]

Requirements to operate under a 326 IAC 2-9-6 SSOA:

- Maintain records of the type and amount of grain received and shipped on an annual basis.
- Maintain records of mineral oil or soybean oil used, application rate, and purchase orders.
- Annual notification stating if the source is in operation and in compliance with the SSOA terms and conditions.
- Comply with all applicable federal, state, and local requirements.



SSOA for a Grain Elevator Operation [326 IAC 2-9-6]

- A new source that applies for a SSOA must wait for final permit issuance before commencing construction.
- A New Source Review (NSR) (construction) permit and SSOA is required, including a 30-day public notice period.
- You may add, modify, or replace equipment associated with the grain elevator without informing IDEM OAQ, provided that the grain elevator will follow the SSOA requirements. A SSOA administrative amendment is **not** required to add, modify, or replace exempt emission units.
- Permitting fees:
 - \$5,556 for a New Source Review (NSR) and SSOA.
 - \$793 for each NSPS/NESHAP review.
- A SSOA does not require renewal.



MSOP, FESOP, and TV Permitting Approvals

- If a grain elevator does not qualify for a 326 IAC 2-11-3 PBR, 326 IAC 2-10 PBR, Registration under 326 IAC 2-5.1, or 326 IAC 2-9-6 SSOA, then the source will need to calculate the source-wide Potential to Emit (PTE) to determine which of the following permit level is required.
 - Minor Source Operating Permit (MSOP) [326 IAC 2-6.1].
 - Part 70 Operating Permit (Title V) [326 IAC 2-7].
 - Federally Enforceable State Operating Permit (FESOP) [326 IAC 2-8].



Permit Level PTE Thresholds Include the Following

Pollutant*	MSOP	FESOP (limited, as necessary)	Part 70 Operating Permit
PM	≥ 25 tpy	NA	NA
PM10	≥ 25 tpy < 100 tpy	≥ 25 tpy < 100 tpy	≥ 100 tpy
PM2.5	≥ 25 tpy < 100 tpy	≥ 25 tpy < 100 tpy	≥ 100 tpy
SO ₂	≥ 25 tpy < 100 tpy	≥ 25 tpy < 100 tpy	≥ 100 tpy
NO _x	<p>≥ 25 tpy < 100 tpy (ozone attainment areas)</p> <p><u>For Ozone Nonattainment Areas</u> ≥ 25 tpy < 100 tpy (marginal or moderate) ≥ 25 tpy < 50 tpy (serious) ≥ 10 tpy < 25 tpy (severe) < 10 tpy (extreme)</p>	<p>≥ 25 tpy < 100 tpy (ozone attainment areas)</p> <p><u>For Ozone Nonattainment Areas</u> ≥ 25 tpy < 100 tpy (marginal or moderate) ≥ 25 tpy < 50 tpy (serious) ≥ 10 tpy < 25 tpy (severe) < 10 tpy (extreme)</p>	<p>≥ 100 tpy (ozone attainment areas)</p> <p><u>For Ozone Nonattainment Areas</u> ≥ 100 tpy (marginal or moderate) ≥ 50 tpy (serious) ≥ 25 tpy (severe) ≥ 10 tpy (extreme)</p>
VOC	<p>≥ 25 tpy < 100 tpy (ozone attainment areas)</p> <p><u>For Ozone Nonattainment Areas</u> ≥ 25 tpy < 100 tpy (marginal or moderate) ≥ 25 tpy < 50 tpy (serious) ≥ 10 tpy < 25 tpy (severe) ≥ 5 tpy < 10 tpy (extreme)</p>	<p>≥ 25 tpy < 100 tpy (ozone attainment areas)</p> <p><u>For Ozone Nonattainment Areas</u> ≥ 25 tpy < 100 tpy (marginal or moderate) ≥ 25 tpy < 50 tpy (serious) ≥ 10 tpy < 25 tpy (severe) ≥ 5 tpy < 10 tpy (extreme)</p>	<p>≥ 100 tpy (ozone attainment areas)</p> <p><u>For Ozone Nonattainment Areas</u> ≥ 100 tpy (marginal or moderate) ≥ 50 tpy (serious) ≥ 25 tpy (severe) ≥ 10 tpy (extreme)</p>
CO	≥ 25 tpy < 100 tpy	≥ 25 tpy < 100 tpy	≥ 100 tpy
HAPs	< 10 tpy of any single HAP and < 25 tpy of any combination of HAP	< 10 tpy of any single HAP and < 25 tpy of any combination of HAP.	≥ 10 tpy of any single HAP or ≥ 25 tpy of any combination of HAP

* Note: This is not a comprehensive list

Calculating the Source-Wide Potential to Emit (PTE)

- For grain handling at a country grain elevator that primarily operates during the harvest season and receives more than 50% of its grain from farmers in the immediate vicinity during the harvest season:
 - The PTE of particulate matter from all operations that process grain will be based on the maximum actual grain throughput from the past five years multiplied by a factor of 1.2. This is based on the EPA memorandum titled Calculating Potential to Emit (PTE) and Other Guidance for Grain Handling Facilities (dated Nov. 14, 1995).
 - The PTE from the headhouse grain handling must be determined based on the number of times the grain is handled in the headhouse (e.g., silo loading, drying, cleaning, and shipping).
 - The PTE from fuel combustion in a grain dryer will be based on the maximum capacity of the grain dryer, operated at 24 hours/day, 365 days/year (8760 hours/year).
 - The PTE from all other emission units/activities will be based on the maximum capacity at 8760 hours/year. Examples include:
 - Fuel combustion in boilers, heaters, furnaces.
 - Fuel combustion in stationary generators used for non-emergency power.
 - Note: the PTE of emergency generators will be based on 500 hours/year.

Calculating the Source-Wide Potential to Emit (PTE)

- For all other grain elevators and grain terminals:
 - The PTE of all emission units at the source will be based on the maximum capacity at 8760 hours/year. Process bottlenecks can be considered when determining PTE.
 - PTE is not based on past actual throughput or actual hours of operation.
- EPA's AP-42 Emission Factors are often used.
- For all grain elevators and terminals, the PTE must include fugitive dust (particulate) emissions from outdoor activities/operations such as shipping/receiving truck traffic on paved and unpaved roads at the site, outdoor material handling operations, and outdoor storage pile wind erosion. These fugitive emissions do not impact the source permitting level in all cases but are necessary to determine applicability of state rules.



Other Permitting Approvals

- Minor Source Operating Permit (MSOP) [326 IAC 2-6.1]:
 - Unrestricted PTE is below the Part 70 major source thresholds without any limitations.
 - Generally, less record keeping and reporting than Part 70 Permit and FESOP.
 - Requires a 30-day public notice and comment period.
 - Annual fee \$200.
 - Annual notification stating whether the source is in operation and in compliance with the terms and conditions contained in the permit.
- Part 70 Operating Permit (Title V) [326 IAC 2-7]:
 - Unrestricted PTE is equal to or greater than Part 70 major source thresholds.
 - Requires a 30-day public notice and comment period and a 45-day EPA review period.
 - Annual fees: \$2,381, plus \$52.38 per ton for each regulated air pollutant.
 - Annual compliance certification that addresses the source's compliance status with the permit terms and conditions.



Other Permitting Approvals

- Federally Enforceable State Operating Permit (FESOP) [326 IAC 2-8]:
 - Unrestricted PTE is equal to or greater than Part 70 major source thresholds, but source requests to take permit limitations to limit the PTE to less than Part 70 major source thresholds.
 - PTE typically limited through permit limitations on emissions, grain throughput, fuel usage, and/or hours of operation.
 - Monthly record keeping and quarterly reporting required for the permit limit parameters.
 - In some cases, emission testing may be required to demonstrate compliance with permit emission limitations.
 - Requires a 30-day public notice and comment period.
 - Annual fee \$2,381.
 - Annual compliance certification that addresses the source's compliance status with the permit terms and conditions.
- All permit levels require compliance with applicable federal, state, and local requirements.



Other Permitting Approvals

- New sources that apply for a MSOP, FESOP, or Part 70 Permit must wait for final permit issuance prior to commencing construction.
- PBR or SSOA sources may apply to transition to a MSOP, FESOP, or Part 70 Permit, if they will no longer qualify for a PBR or SSOA.
- For existing sources with a MSOP, FESOP, or Part 70 Permit that propose to add, modify, or replace equipment, a permit application must be submitted. The level of permit modification/revision or amendment are dependent on the specifics of the source/permit changes and the PTE of the equipment being added or modified.
- See 326 IAC 2-1.1-7 for permitting fees for new sources and transitions/modifications/revisions.
- First time MSOPs and FESOPs must be renewed in five years. After first renewal, subsequent renewals are required every 10 years.
- Part 70 Permits must be renewed once every five years.



Grain Elevators Operating Under an MSOP

[326 IAC 2-6.1]

- Requires source-wide emissions for each consecutive 12-month period to be less than Part 70 major source thresholds, **without** the consideration of air pollution control devices, and **without** any limitations.
 - Less than 100 tons per 12 months of PM10, PM2.5, VOC, SO2, NOx and CO.
 - Less than 25 tons per 12 months of total HAPs and 10 tons per 12 months for each single HAP.
- Based on various MSOPs issued by IDEM OAQ, grain elevators with drying and cleaning typically have a maximum annual throughput capacity between 420,000 and 20,000,000 bushels per year. Note that a source's required permit level is dependent on the total PTE from all emission units at a source.
- If you believe that you qualify for an MSOP, we encourage you to reach out to IDEM's CTAP for further discussion and evaluation.



Grain Elevators Operating Under an MSOP

Contents of a typical MSOP for a grain elevator:

- **Section A: Source Summary.**
 - Source information and list of all emission units.
- **Section B: General Conditions.**
 - General conditions applicable to all MSOPs/permittees.
- **Section C: Source Operation Conditions.**
 - Source operation conditions applicable to all MSOPs/permittees.
- **Section D: Emission Unit Operation Conditions.**
 - Requirements under 326 IAC that are specific to the emission units at the source.
- **Section E: Federal Requirements.**
- **Reporting Forms.**



Grain Elevators Operating Under an MSOP

Section D: Potential Emission Unit Operation Conditions:

- **Emission Limitations and Standards.**

- 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).
 - 326 IAC 6-3-2 applies to grain elevator operations that are not in one of the counties covered under 326 IAC 6.5 and 326 IAC 6.8.
 - This is a lb/hr emission limit determined by utilizing the process weight rate and an equation in the rule.
- 326 IAC 6.5 (Particulate Emission Limitations for Specific Counties).*
 - Emission limit is 0.03 grains per dry standard cubic foot and includes work practices.
- 326 IAC 6.8 (Particulate Emission Limitations for Lake and Porter Counties).
 - Emission limit is 0.03 grains per dry standard cubic foot and includes work practices.
- 326 IAC 1-6-3 (Preventive Maintenance Plan) applies to emission units and control devices.

*Note: 326 IAC 6.5 counties are Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, and Wayne.



Grain Elevators Operating Under an MSOP

Section D: Emission Unit Operation Conditions:

- **Compliance Determination Requirements.**
 - Operate particulate control devices (if needed to comply with an Article 6 limit).
 - Stack testing in some cases.
- **Compliance Monitoring Requirements.**
 - Daily baghouse pressure drop monitoring or daily visible emissions at the stacks, with associated recordkeeping.
 - Semi-annual inspections for control devices venting indoors.
 - Inspections for baffles, sock/sleeves, spouts.
 - Broken/failed bag detection and repair.
- **Record Keeping and Reporting Requirements.**
 - Maintain records of daily pressure drop or daily visible emissions.
 - Maintain records of semi-annual inspections (date and results).

*Note: These are state requirements. There could be additional requirements contained within an applicable NSPS or NESHAP.



Grain Elevators Operating Under an MSOP

Section E: Federal Requirements

- NSPS and NESHAP applicable rule citations and any required testing requirements.
- Federal rules that may apply to equipment at a grain elevator include:
 - 40 CFR 60 (NSPS), Subpart Dc (for boilers \geq 10 MMBtu/hr).
 - 40 CFR 60 (NSPS), Subpart DD (grain elevators - opacity/grain loading limits and testing).
 - 40 CFR 60 (NSPS), Subpart IIII (stationary diesel engine/generators).
 - 40 CFR 60 (NSPS), Subpart JJJJ (stationary gas/gasoline engine/generators).
 - 40 CFR 63 (NESHAP), Subpart ZZZZ (all stationary engines/generators).
 - 40 CFR 63 (NESHAP), Subpart JJJJJJ (6J) (for boilers at area HAP sources - not gas-fired boilers).
 - 40 CFR 63 (NESHAP), Subpart CCCCCC (6C) (gasoline dispensing facilities at area HAP sources).
 - 40 CFR 63 (NESHAP), Subpart DDDDDDD (7D) (prepared feeds manufacturing facilities that use materials containing chromium and/or manganese).



Grain Elevators Operating Under an MSOP

Reporting requirements:

- Annual notification (shall be submitted no later than March 1 stating whether the source is in operation and in compliance with the terms and conditions contained in this permit).
- Malfunction report (required for any malfunctions that last more than one hour).

*Note: These are state reporting requirements. There could be additional reporting requirements contained within an applicable NSPS or NESHAP.



What Emissions Are Not Included in a Permit?

Combustion emissions from the following are not part of the "source" and are not included in the calculation of a source's PTE:

- **Mobile sources**: Combustion emissions from transportation engines such as motorcycles, cars, trucks, and buses. These are commonly referred to as "tailpipe" emissions. However, fugitive dust emissions from vehicle traffic on paved and unpaved roads are considered part of the source.
- **Nonroad Engines**: Engines that meet the definition of "nonroad engine" under 40 CFR 1068.30
 - It is used in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (e.g., off-highway mobile cranes and bulldozers). However, fugitive dust created by the equipment may be considered.
 - It is used in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers).
 - By itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. Additionally, it will not remain in a location for more than 12 consecutive months (e.g., portable/transportable generators that are moved every 12 months).