Grain Elevators in Kansas
New Source Performance Standard (NSPS) Guidance Document

What is 40 CFR Part 60 Subpart DD?
The new source performance standards (NSPS) for grain elevators were established by the U.S. Environmental Protection Agency on August 3, 1978. These standards are located in the code of federal regulations (CFR), Title 40 (environment), part 60, subpart DD (written as “40 CFR 60 Subpart DD”). These regulations define the emission limits for a new source, in this case, grain elevators, and the requirements to maintain compliance with the standard.

Does the NSPS standard for grain elevators apply to my facility?
The standards of performance for grain elevators (40 CFR Subpart DD) apply to each affected facility (i.e., each truck unloading station, truck loading station, barge and ship unloading station, barge and ship loading station, railcar unloading station, railcar loading station, grain dryer, and all grain handling operations) at any grain terminal elevator or any grain storage elevator. Therefore, if your facility meets the definition of a grain terminal elevator or grain storage elevator as defined in 40 CFR Part 60 Subpart DD, and it starts construction, modification, or reconstruction after August 3, 1978, then this standard applies to your facility. The Grain Elevator NSPS Flow Chart on page 3 will help determine your applicability to this standard.

Definitions within the standard are very exact. For example, a grain terminal elevator means “any grain elevator which has a permanent storage capacity of more than 88,100 m³ (ca. 2.5 million U.S. bushels), except those located at animal food manufacturers, pet food manufacturers, cereal manufacturers, breweries, and livestock feedlots.” Therefore, even if your facility meets the definition of a grain elevator, it is not required to comply with these standards if the elevator is located at an animal food manufacturer, pet food manufacturer, cereal manufacturer, brewery, or livestock feedlot. If your facility is a grain storage elevator, which means “any grain elevator located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant which has a permanent grain storage capacity of 35,200 m³ (ca. 1 million bushels),” you are also required to comply with this standard.

What are my requirements under this standard?
Since 40 CFR Part 60 Subpart DD is a new source performance standard, it establishes standard emission rates for grain elevator sources. The standards for particulate matter, opacity, and air ventilation rates are located in 40 CFR 60.302. You also have testing requirements to demonstrate you are meeting your emissions standards. Testing requirements under this standard are located in 40 CFR 60.303, but also refer to 40 CFR 60.11, compliance with standards and maintenance requirements. Specific test methods for Method 2 – Determination of stack gas velocity and volumetric flow rate, Method 5 – Determination of particulate matter from stationary sources, and Method 9 – Visual determination of the opacity of emissions from stationary sources, are located in Appendix A of 40 CFR 60.

Now that I have done the tests, what do I do with the information to prove my facility is in compliance?
Notification and recordkeeping requirements are listed in 40 CFR 60.7. The Kansas Department of Health and Environment (KDHE), Bureau of Air (BOA), has the authority to conduct inspections at permitted facilities. You are required to keep records of notification and compliance reports, performance test results, and any other data on hand to show KDHE representatives.

Do I need an air operating permit for my facility?
Whether you are or are not subject to the new source standards for grain elevators, you are required to apply for a Class I air operating permit from KDHE if potential-to-emit (PTE) calculations show your facility exceeds 100 tons per year for particulate matter less than or equal to 10 microns in size (PM-10). However, you can apply for a Class II air operating permit if you are willing to accept federally-enforceable limitations to your operations (e.g., control equipment such as baghouses, cyclones, or oil suppressants, or limitations in the amount of grain you process). The Grain Elevator PTE spreadsheet incorporates the efficiency of control equipment and throughput limitations to see if you would fall below the PM-10 threshold with these limitations.

How do I calculate the PTE for my facility?
There is a flow chart (pages 4 and 5) and the Grain Elevator PTE spreadsheet available to help you calculate your PTE for PM and PM-10. These values are usually in tons/year. A facility’s PTE is used to determine the type of air construction permit to issue – a construction permit or a construction approval – and to determine if the source is a major source (i.e., the facility has a PTE of 100 tons or more per year of PM 10) requiring a Class I air operating permit. The threshold limits for construction permits and approvals and air operating permits are shown on the PTE Threshold Limits Table on page 3.

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The Grain Elevator PTE spreadsheet uses facility-specific information and calculates emissions based on emissions factors associated with the grain-handling process. These emissions factors can be found in the EPA AP-42: Compilation of Air Emission Factors on EPA's website. Emissions factors associated with grain elevators and processes are in section 9.9.1 of this document. The Kansas Small Business Environmental Assistance Program can assist you in this calculation.

Am I a country elevator or terminal grain elevator?
As mentioned above, a grain terminal elevator has permanent storage capacity of MORE than 2.5 million bushels. When determining a facility’s potential to emit pollutants (and in the case of a grain elevator, the primary pollutant of concern is particulate matter), EPA looks at a facility’s design capability, rather than its operational status. Even though a facility may only be operated eight hours a day, five days a week, its design allows for operations 24 hours a day, 365 days a year. Consequently, PTE calculations are based on the worst-case scenario of continuous operations, UNLESS there are inherent physical limitations and operational design features which restrict potential emissions.

In a memorandum dated November 14, 1995 (https://www.epa.gov/sites/production/files/2015-08/documents/grainfnl.pdf), EPA issued a clarification on the PTE calculation for grain-handling facilities. In this memorandum, "The EPA recognizes that country grain elevators are clearly constrained in their operation, to the extent that they are designed to service, and as a matter of operation only service, a limited geographic area from which a finite amount of grain can be grown and harvested." This memorandum also defined a country grain elevator as “any grain elevator that receives more than 50 percent of its grain from farmers in the immediate vicinity during the harvest season.”

How does being a terminal/country grain elevator affect the PTE calculations for my facility?
Grain terminal elevators do not have the inherent operational and geographical constraints identified for country grain elevators. Therefore, PTE calculations for terminal grain elevators are based on their ability to process grain in bushels per hour (bu/hr) and use a full year (8,670 hours) to determine how much grain is processed in a year.

The EPA does not recommend the same PTE calculations for country grain elevators, given their inherent operational and geographical constraints, and recommends PTE calculations based upon a more realistic estimate of the maximum amount of grain that could be received during a record crop year in the geographic area served by the grain elevator. Therefore, PTE calculations for country grain elevators are based on the highest amount of grain received during the previous five years, multiplied by an adjustment factor of 1.2. The EPA believes this process constitutes a realistic upper bound on the amount of grain a country grain elevator could receive.

How do I submit an application to get approval or a permit to construct/modify my facility?
If you construct, modify, or reconstruct a grain elevator, you may need to contact the KDHE BOA for a construction permit or approval. The table on page 3 shows the PTE thresholds that trigger the requirement for construction permits or approvals. If your facility’s PTE is above these thresholds, you must apply for a construction permit or approval through KDHE BOA. Applications must be submitted online through the "Kansas Environmental Information Management System (KEIMS).” Information about KEIMS and the online portal can be found at https://www.kdhe.ks.gov/249/KS-Environmental-Information-Management-. The Grain Elevator PTE Flow Chart on pages 4 and 5 indicates which forms should accompany your permit application.

Contact Information

<table>
<thead>
<tr>
<th>KDHE Bureau of Air</th>
<th>US EPA Region 7 - Air Branch</th>
<th>K-State Small Business Environmental Assistance Program</th>
</tr>
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<tr>
<td>1000 SW Jackson, Suite 310</td>
<td>11201 Renner Blvd.</td>
<td>133 Ward Hall</td>
</tr>
<tr>
<td>Topeka, KS 66612-1366</td>
<td>Lenexa, Kansas 66219</td>
<td>Manhattan, KS 66506-2508</td>
</tr>
<tr>
<td>Phone: 785-296-6024</td>
<td>Phone: 913-551-7003</td>
<td>Phone: 800-578-8898</td>
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<td></td>
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<td><a href="http://www.sbeap.org">www.sbeap.org</a></td>
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While every effort was made to accurately reflect the requirements of 40 CFR Part 60, Subpart DD, if any conflicts appear in this guidance document, the federal and state regulations will take precedence.

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Potential-to-Emit (PTE) Threshold Limits Table

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Construction Permit</th>
<th>Construction Approval</th>
<th>Class I Air Operating Permit</th>
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<td>Non-agriculture</td>
<td>Agriculture-related</td>
<td></td>
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<tr>
<td>PM</td>
<td>&gt; 25 t/yr OR</td>
<td>&gt; 100 t/yr</td>
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<tr>
<td>PM10</td>
<td>&gt; 15 t/yr</td>
<td>Included above</td>
<td>&gt; 100 t/yr</td>
</tr>
</tbody>
</table>

Grain Elevator NSPS Flow Chart

Use this flow chart to determine whether your facility is subject to the requirements of the new source performance standards for grain elevators (40 CFR Part 60 Subpart DD).

1. Is your facility a grain elevator (plant or installation at which grain is unloaded, handled, cleaned, dried, stored, or loaded)?
   - If yes, Standard applies. Comply with standard requirements. Use PTE flowchart to calculate PTE and determine if you need an air operating permit.
   - If no
     1. Is your facility a grain storage elevator (located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant which has a permanent grain storage capacity of 1 million bushels)?
        - If yes, Is the elevator located at an animal food manufacturer, pet food manufacturer, cereal manufacturer, a brewery, or livestock feedlot?
          - If yes, Standard does not apply. Use PTE flowchart to calculate PTE and determine if you need an air operating permit.
          - If no, Standard does not apply. Use PTE flowchart to calculate PTE and determine if you need an air operating permit.
        - If no, Is your facility a grain terminal elevator (permanent grain storage capacity of more than 2.5 million bushels)?
          - If yes, Standard does not apply. Use PTE flowchart to calculate PTE and determine if you need an air operating permit.
          - If no, Is your facility a grain terminal elevator (permanent grain storage capacity of more than 2.5 million bushels)?
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Enter your five year high into PTE spreadsheet. It will calculate the maximum possible grain that can be processed in a year. This will be used to calculate your PTE.

Enter your maximum capacity that you use at your grain elevator in the PTE spreadsheet. Terminal grain elevators base their PTE on a maximum capacity (in bu/hr) and 8760 hours a year.

Continue to next sections. Fill in each percentage to the correct section of the PTE spreadsheet.

How is grain received?

By Truck

% Hopper Truck
% Straight Truck
% By rail

How is grain shipped?

By Truck

% Hopper Truck
% Straight Truck
% By rail
Grain Elevator PTE flow chart (continued)

% of grain cleaned

Type of Dryer

Internal grain handling has a constant emission factor.

% dried by Column

% dried by Rack

% dried by Oven

Control Equipment Used

Baghouse efficiency

Cyclone efficiency

Oil Suppressant efficiency

Do you use insecticides or fumigants? See KDHE form 3-2.0 Grain Elevators *

If no, do you use other pest control?

Yes, I use

No

Please list the maximum amount of these chemicals used and list any others that must be reported to the KDHE and % active ingredient

a. ethylene dichloride ____________________________
b. carbon bisulfide ________________________________
c. methyl bromide (bromomethane) ____________________
d. ethylene oxide ___________________________________
e. phosphine_____________________________________

* https://www.kdhe.ks.gov/339/Process-Equipment-Description-Forms

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