

Air Permits for Grain Elevators: Do You Need One?

SCS ENGINEERS

Environmental Consultants and Contractors

By Ann O'Brien

Do you know if you're meeting air permit requirements to operate your grain elevator? Don't let air permitting become a stumbling block. Protect yourself against the legal, financial and reputational risks of environmental non-compliance.

If you operate a grain elevator (grain storage facility or grain processing facility) you may need an air permit from the Wisconsin Department of Natural Resources (WDNR) before you build or operate any of the following emission units or processes: grain storage, grain cleaning, grain drying, blending, and loading and unloading grain to and from trucks, rail cars and barges, and any other process that may have a potential to emit an air contaminant, such as bees' wings or other forms of particulate matter (e.g. dust).

If you have particulate matter emissions from grain elevator operations, or other air contaminant emissions from grain dryers, there are two categories of permits that may apply to you: construction permits and operating permits. Wisconsin Statutes require a facility with a potential to emit any regulated air contaminant to secure a construction permit from the WDNR before you build an emission unit or process, unless you qualify for an exemption. Similar to construction permitting, before starting up an emission unit or process with a potential to emit a regulated air contaminant,

the facility must secure an air operation permit from the DNR.

In general you must secure an air permit unless you qualify for one of the following exemptions:

Construction Permit Exemptions Based on Grain Receipts

Grain receipts of 5,500 tons per month or less: If you operate a grain storage facility, you are exempt from the requirement to secure a construction permit if your facility receives an average tonnage of grain of less than 5,500 tons per month, including those with rack dryers designed



to dry grain at a rate of not more than 1,500 bushels per hour at 5% moisture extraction, or rack dryers equipped with at least 50 mesh screens, or column dryers. Average monthly tonnage is calculated by dividing the cumulative tonnage of grain received since January 1 of each year by 12. The average monthly tonnage of grain received does not include product that the facility sells, acting as a broker, which is never actually received or dried at the grain storage facility.

Grain receipts of 4,500 tons per month or less: If you operate a grain processing facility, you are exempt from the requirement to secure a construction permit if your facility receives an average tonnage of grain of less than 4,500 tons per month, including those with rack dryers designed to dry grain at a rate of not more than 1,500 bushels per hour at 5% moisture extraction, or rack dryers equipped with at least 50 mesh screens, or column dryers. Average monthly tonnage is calculated by dividing the cumulative tonnage of grain received since January 1 of each year by 12. The average monthly tonnage of grain received does not include product that the facility receives that is packaged when received and remains packaged.

If your grain receipts are less than the thresholds noted above, but you are otherwise subject to the New Source Performance Standards for grain storage facilities or grain terminal elevators, the exemption is voided and you either have to (a) secure a construction permit from the WDNR or (b) qualify for another exemption category from the list below.

*You are subject to the New Source Performance Standard for grain elevators (s. NR 440.47, Wis. Adm. Code) if you operate 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 and which has a permanent grain storage capacity of 35,200 m³ (ca. 1 million bushels).*

You are also subject to the New Source Performance Standard for grain elevators (s. NR 440.47, Wis. Adm. Code) if you operate **a grain terminal 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.

Other Available Construction Permit Exemptions

Natural gas and oil-combusted grain dryers: If your facility is equipped with a grain dryer(s) and the only fuel combusted or capable of being combusted by the dryer(s) is natural gas, each dryer is exempt from construction permitting if the rated heat input of the dryer is 25 million Btu per hour or less. If the dryer(s) burns or is capable of burning distillate oil, an exemption applies if the rated heat input of the dryer is 10 million Btu per hour or less. Note that the dryer may be exempt from permitting, but other operations at your facility may still be subject to permitting if they don't otherwise qualify for an exemption.

Actual particulate matter emissions less than 1,666 pounds per month: Your facility is also exempt from construction permitting if the facility operates under the authority of an air operation permit issued by the WDNR and particulate matter emissions (e.g. bees' wings, roadway dust generated by vehicle traffic, grain dust) do not exceed 1,666 pounds per month as averaged over any consecutive 12-month period from all emissions units and processes at the facility.

Maximum theoretical particulate matter emissions of 5.7 pounds per hour or less: Finally, your facility is exempt from construction permitting if all of the emission units and processes operated

at the facility in total emit 5.7 pounds per year or less of particulate matter emissions calculated as a maximum theoretical emission (MTE) rate. MTE is based on the assumption of the maximum emission rate of each emission unit and process assuming an operating schedule of 8,760 hours per year.

Air Operation Permit Exemptions Based on Grain Receipts

Grain receipts of 5,500 tons per month or less: If you operate a grain **storage** facility, you are exempt from the requirement to secure an air operation permit if your facility receives an average tonnage of grain of less than 5,500 tons per month. Average monthly tonnage is calculated by dividing the cumulative tonnage of grain received since January 1 of each year by 12. The average monthly tonnage of grain received does not include product that the facility sells, acting as a broker, which is never actually received or dried at the grain storage facility.

Grain receipts of 4,500 tons per month or less: If you operate a grain **processing** facility, including facilities with column dryers or rack dryers, you are exempt from the requirement to secure an air operation permit if your facility receives an average tonnage of grain of less than 4,500 tons per month. Average monthly tonnage is calculated by dividing the cumulative tonnage of grain received since January 1 of each year by 12. The average monthly tonnage of grain received does not include product that the facility receives that is packaged when received and remains packaged.

If you are your grain receipts are less than the thresholds noted above, but you are otherwise subject to the New Source Performance Standards (NSPS) for grain storage facilities or grain terminal elevators (see NSPS applicability discussion for construction

New to Permitting?

Go to <http://dnr.wi.gov/topic/SmallBusiness/primer/> for an interactive one-stop shop permit primer to help manage your environmental requirements.

permits), the exemption is voided and you either have to (a) secure an air operation permit from the WDNR or (b) qualify for another exemption category from the list below.

Other Air Operation Permit Exemptions

Natural gas and oil-combusted grain dryers: If your facility is equipped with a grain dryer(s) and the only fuel combusted or capable of being combusted by the dryer(s) is natural gas, the dryer is exempt from air operation permitting if the rated heat input of all the dryers at the facility in total is 25 million Btu per hour or less. If the dryer(s) burns or is capable of burning distillate oil, an exemption applies if the rated heat input of all of the dryers at the facility in total is 10 million Btu per hour or less. Note that the dryer may be exempt from permitting, but other operations at your facility may still be subject to permitting if they don't otherwise qualify for an exemption.


Actual particulate matter emissions of 10 tons per month or less: Your operations are also exempt from air operation permitting if the facility emits no more than 10 tons per month of particulate matter.

Maximum theoretical particulate matter emissions less than 5.7 pounds per hour: Finally, your operations are exempt from air operation permitting if all of the emission units and processes operated at the facility in total emit 5.7 pounds per year or less of particulate matter emissions

calculated as a maximum theoretical emission (MTE) rate.

MTE is based on the assumption of the maximum emission rate of each emission unit and process assuming an operating schedule of 8,760 hours per year.

There are other factors you may need to take into consideration when evaluating if your grain elevator is subject to air permitting in Wisconsin. You may have other emissions sources that require an air permit such as backup generators, large tanks that store chemicals, and other processes that may emit other air pollutants.

The air permitting process can be complicated, but there are tools and people that can help. Environmental engineering firms can help guide you through the process and offer direct support. Or you can use self-serve tools on the WDNR website to help determine what level of permitting is applicable to you, and complete the necessary permitting forms and backup calculations specific to the type of permit you're applying for. You may be able to submit the application online, or you can submit hard copies to the WDNR. Securing the proper air permits will help safeguard you against the legal, financial, and reputational risks of non-compliance. 

MAKE YOUR
VISIONA CONCRETE
REALITY

Let our experts help you with:

- Containment System Design and Construction
- Investigation and Remediation
- Emergency Spill Response
- Agricultural Chemical Cleanup Program (ACCP)
- Storm Water Management
- Water and Air Permitting
- Environmental, Health, and Safety Management
- Property Transaction Site Assessments



Contact Sam Cooke, PE, CEM
608.216.7382
scooke@scsengineers.com
www.scsengineers.com

SCS ENGINEERS

For help understanding and applying for an air permit for your grain elevator, contact Ann O'Brien at aobrien@scsengineers.com or 773-775-6362 or Cheryl Moran at cmoran@scsengineers.com or 608-216-7325. Ann O'Brien is a Project Manager with SCS Engineers with more than 30 years of experience in the industrial sector.

