

# Best Management Practices (BMPs) for Grain Elevators

(Adopted 12/4/07; Revisions adopted 7/15/14)

## Applicability

The BMPs listed in this document shall apply at all country grain elevators, country grain terminal elevators, and grain terminal elevators as defined below. This document has been adopted by reference in 567 Iowa Administrative Code (IAC) 22.10(455B) and can only be modified or updated after completion of an administrative rulemaking conducted in accordance with the Iowa Administrative Procedure Act (Iowa Code chapter 17A). Facility-wide and equipment specific BMPs are included that apply to both existing equipment and new equipment, unless specified otherwise.

Where requirements for BMPs in construction or operating permits exist that are more stringent than those specified in this document, the more stringent BMPs shall be implemented. The applicable requirements provided in 40 Code of Federal Regulations (CFR) Part 60, Subpart DD, "Standards of Performance for Grain Elevators", as adopted in 567 IAC 23.1(2)"ooo", shall apply for subject grain terminal elevators and grain storage elevators, in addition to the BMPs provided in this document.

As provided for in 567 IAC 23.3(2)"c," the department may, upon notification to the grain elevator's owner or operator, require the owner or operator to implement additional practices and measures not already being implemented as precautions to prevent the discharge of visible emissions of fugitive dust beyond the property line of the facility which the emissions originate on. Additionally, visible emissions from equipment or air pollution control equipment operating at a grain elevator shall not equal or exceed 40 percent opacity (567 IAC 23.3(2)"d"), or the opacity specified in a permit if the equipment is permitted, whichever is lower.

## Definitions

For the purposes of this document, the terms "country grain elevator," "country grain terminal elevator," and "grain terminal elevator" shall have the same meaning as defined in 567 IAC 22.10(1).

## General Maintenance, Upkeep and Repair

- Maintain and operate equipment and air pollution control equipment at all times in a manner consistent with good practice for minimizing emissions. Air pollution control equipment includes but is not limited to, quick closing doors, enclosures, air curtains, wind deflectors, grain oiling equipment, loadout socks and drop-down spouts or sleeves, baghouses and vent filters, and cyclones.
- Equipment and air pollution control equipment malfunctions shall be remedied in an expeditious manner so as to minimize the amount and duration of excess emissions.
- Air pollution control equipment shall be operated when the air emission source is in operation and shall be checked daily for proper operation. This requirement does not apply on days that the air emission source does not operate.
- Routine maintenance of equipment and air pollution control equipment shall be scheduled during periods of process shutdown to the maximum extent possible.
- Clean internal and external areas, including floors, roofs and decks, as necessary to minimize dust to the atmosphere when the facility is receiving, transferring, or loading out grain.
- Clean the yard, ditches and curbs as necessary to minimize accumulation of grain, chaff, and grain dust.

## Grain Handling Equipment

Grain handling equipment includes but is not limited to bucket elevators or legs, scale hoppers, turn heads, scalpers, cleaners, trippers, and headhouse and other such structures.

- Grain handling equipment shall be cleaned, enclosed, or controlled as necessary to minimize visible dust emissions to the atmosphere to 5% or less opacity when the equipment is being operated.
- Operation of aeration fans shall be minimized during loading of grain into storage bins to the extent possible.

## Grain Unloading Stations (Dump Pits) and Grain Loading Stations (Loadouts)

- Dump pits with enclosures shall be maintained and operated so as to minimize the emissions of dust to the

atmosphere resulting from the dumping and handling of grain.

- Dump pits with induced draft fans installed must use fans with a capacity of at least 50 cfm/sq. ft. of airflow at the effective grate surface, where the area of the effective grate surface is the area of the dump pit grate through which air passes, or would pass, when aspirated.
- If feasible, loadouts shall use socks and drop-down spouts or sleeves, or equivalent, which extend at least 6 inches below the sides of the receiving container to minimize grain free-fall distance, except for topping off.
- To the extent possible, the flow of the grain through the spout shall be regulated so as to minimize dust emissions from the receiving container when the container is empty to only partially full.
- If grain oiling is used, grain should be oiled after receipt at the grain unloading station and prior to transfer to bin storage to allow for the maximum control effectiveness. Grain oiling applied elsewhere in the process, instead of at the grain unloading station, will result in a lower control effectiveness and less credit for control in the PTE calculation tool.

#### **Grain Dryers**

- Column dryers shall have screen perforations on replacement screens or new dryer screens no greater than 0.094 inch.
- Grain inlets and grain outlets to dryers shall be enclosed.
- Rack dryers shall have a maximum screen house filter size of 50 mesh on replacement screen house filters or new dryer screen house filters.
- The volume of grain passing through the dryer shall not exceed the manufacturer's recommended capacity.
- Dryer screens should be inspected before each dryer start-up.

#### **Grain Vacuuming (Grain Vac) Operations**

Grain vac operators must employ best management practices as necessary to reasonably prevent the discharge of visible emissions of fugitive dusts beyond the lot line of the property on which the grain vac is being operated. These BMP are examples of reasonable practices to minimize the generation of fugitive dust emissions from grain vac operations:

- For grain loadouts use socks and drop-down spouts or sleeves, or equivalent, which extend at least 6 inches below the sides of the receiving container to minimize grain free-fall distance, except for topping off.
- Operate the vac at times when the wind direction and speed would minimize offsite impact.
- Vary the speed of the vac operations to minimize dust emissions.
- Utilize directional discharge to minimize offsite impact.
- Evaluate the use of additional control measures, such as add on controls, if needed to comply with 567 IAC 23.3(2)"c".

#### **Recordkeeping Requirements**

All grain elevators subject to these BMPs shall record BMPs used during times of grain vac operation. In addition, wind speed and direction and date and time of grain vac operation shall be noted.

With the exception of grain vac operations, there are no other specific recordkeeping requirements associated with BMP for Group 1 facilities. However, owners or operators of Group 1 facilities are encouraged to maintain records as appropriate to demonstrate that applicable BMP are being implemented.