Presentation Background Materials for the National Grain and Feed Association
Environmental Regulations Impacting Grain Elevators

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1 ENVIRONMENTAL OVERVIEW

The number of environmental regulations has increased dramatically over the last two decades and their impact on grain elevators also increased. We may not be able to operate a grain elevator in the same manner that we did a decade or two ago due to the Environmental Protection Agency (EPA) and state environmental agency regulations. NGFA prepared this information to assist facilities in understanding environmental requirements. This is not an exhaustive list and description of environmental regulations, but is intended to cover some of the common environmental regulations impacting grain elevators.

2 Clean Air Act Requirements

2.1 Air Operating Permits

2.1.1 Overview

Air operating permit regulations are in 40 (Code of Federal Regulations) CFR Part 70 and 71. The purpose of an air operating permit is to reduce violations of air pollution laws and improve enforcement of those laws by compiling air permit requirements into one document, requiring air emission tracking and reports, and making the air operating permit federally enforceable.

2.1.2 Impact on Grain Elevators

Air Operating Permit Exemptions

Some grain elevators may be exempt from the air operating permit requirements depending upon the potential quantity of emissions, the state, and when the facility began operations. If the grain elevator makes modifications to the operations, the exemption may no longer apply.

Air Operating Permit Types

Generally as facility emissions increase, which typically corresponds to an increase in throughput, compliance requirements increase (e.g., recordkeeping, testing, inspection, reporting). Some states have established different air operating permit types to simplify the application and compliance processes. These permit types include, but are not limited to synthetic minor, general permits, standard permits, and permit by rule.

NGFA's Environmental Department will try to apply for the type of air operating permit with the least restrictive requirements. However, sometimes the grain elevator does not qualify for a simpler air operating permit or the simpler air operating permit may have conditions that restrict operations.

Air Operating Permit Requirements

Air operating permits may establish requirements that the grain elevator must comply with including

- Operating control devices when running the facility
- Inspecting facility operations
- Maintaining throughput and/or emissions below certain levels
- Conducting stack tests and visible emissions observations
- Maintaining records including records of:
    - Periodic inspections of the facility operations including haul roads
    - Records of throughput (e.g., grain received, dried, handled, shipped)
    - Regular checks of air pollution control equipment operation (e.g., daily baghouse magnehelic gauge readings)

- Maintenance of air pollution control equipment (e.g., baghouses, cyclones, unloading socks) and documentation of maintenance
- Periodic inventory of emissions (e.g., annual emissions inventory)
- Certification of compliance with the air permit requirements
- Periodic deviation reports identifying departures from air permit requirements
- Record of changes to the facility
- Periodic visible emissions or opacity observations

Some air operating permits expire after a certain number of years (e.g., five to ten) and have to be renewed. A renewal application is typically due six months before a permit expires. Some air operating permits do not expire.

2.2 Air Construction Permits

2.2.1 Overview

Regardless of whether a facility has an air operating permit, certain additions or modifications to a facility may require an air construction permit (40 CFR 60). The following changes may require an air construction permit:

- Addition of air emission sources such as truck and rail loading spouts, truck and rail unloading pits, storage bins and piles, dryers, and conveyors.
- Increasing the loading, unloading or conveyor rates
- Debottlenecking: increasing the effective loading or unloading rate of a unit without modifying the unit, but instead removing a capacity limitation on an associated unit

Each state has various requirements to apply for a construction permit and exemptions. Exemptions fall into a number of categories. One common exemption is based on the quantity of emissions added based on the change.

2.2.2 Impact on Grain Elevators

Air construction permit applications need to be submitted prior to starting construction or modification and most construction and modification activities cannot start until the grain elevator receives the air construction permit. Timeframes for submitting an air construction permit can range from months to a year or longer depending upon the state and the type of construction project.

An air construction permit may also have some of the same requirements as the air operating permit.

2.3 New Source Performance Standards

2.3.1 Overview

New Source Performance Standards (NSPS) regulations [40 CFR 60] include categories of stationary sources, which "cause, or contribute significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare." NSPS regulations set uniform emission limitations for industrial categories or sub-categories of sources. Each NSPS regulation specifies what types of sources are subject and applicability dates.

The NSPS Subpart DD Standards of Performance for Grain Elevators applies to the following facilities:

- Grain elevators with over 2.5 million bushels of permanent storage

- Grain elevators located at wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant with over 1 million bushels of permanent storage

In 2007, the EPA issued an opinion that ground storage piles are permanent storage and therefore apply towards the 2.5 million and 1 million bushel applicability threshold. The grain industry has lobbied against this interpretation and the EPA is considering repealing.

2.3.2 Impact on Grain Elevators

NSPS Subpart DD standard establishes emission rates for grain elevator sources including standards for particulate matter, opacity, and air ventilation rates. The regulation also establishes testing requirements to demonstrate you are meeting your emissions standards including:

- Stack tests on baghouse vents
- Opacity observations of loading and unloading areas, conveyors, dryers, etc.

Stack Test on Baghouse Exhaust Vent

A typical stack test can cost around $10,000 since it requires a contractor with specialized equipment. If opacity observations are required, personnel will require opacity training every six months to maintain certification. Opacity observations may be required every day of operation.

Smoke School Opacity Generator Trailer

2.4 National Emission Standards for Hazardous Air Pollutants

2.4.1 Overview

The National Emission Standards for Hazardous Air Pollutants (NESHAPs) regulations are in 40 CFR 61 and 63. These regulations, also referred to as maximum achievable control technology (MACT) standards, establish limitations and controls for emissions of Hazardous Air Pollutants (HAP) from certain operations.

The NESHAPs in 40 CFR 61 regulate a small group of toxic pollutants from specific sources. The NESHAPs in 40 CFR 63 apply to facilities that are major sources of HAPs (i.e., chemicals or chemical categories identified in the NESHAP regulations). A major source of HAPs is a facility that has the potential to emit over 25 tons per year of total HAPs or over 10 tons per year of a single HAP.

2.4.2 Impact on NGFA Grain Elevators

Grain elevators are typically exempt from the NESHAP regulations, but some facilities storing gasoline may be subject to the Subpart CCCCCC NESHAP and be required to maintain records of gasoline receipts. Requirements for tracking gasoline receipts may be incorporated into air operating permits.

2.5 National Ambient Air Quality Standards (NAAQS)

2.5.1 Overview

The Clean Air Act (CAA) requires the EPA set National Ambient Air Quality Standards (NAAQS) for certain pollutants. The CAA established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation, and buildings.

2.5.2 Impact on Grain Elevators

During some air construction and operating permit application processes, the grain elevator has to demonstrate compliance with the NAAQS using computer models that mimic the emissions from the grain elevator. The EPA has lowered the NAAQS for particulate matter, making it more difficult to meet the standard when modeling. If the grain elevator cannot demonstrate compliance with the NAAQS during modeling, the grain elevator may have to install additional control devices (e.g., baghouses, cyclones, enclosures, mineral oil application, etc.) or make other modifications to the grain elevator project design.

Baghouse Control Device

Cyclone Control Device

3 Clean Water Act (CWA)

3.1 Spill Prevention Control and Countermeasures (SPCC) [20 CFR 112.1 to 112.15]

3.1.1 Overview

The Spill Prevention Control and Countermeasures Regulation (SPCC) was a result of the Federal Water Pollution Control Act of 1972. The purpose of the SPCC regulation is to prevent oil from polluting waterways. The SPCC Regulation meets this goal by requiring prevention, control and countermeasures for oil spills. According to the regulation, it "...establishes procedures, methods and equipment and other requirements for equipment to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable waters of the United States or adjoining shorelines."

Facilities subject to the SPCC regulation are required to develop a SPCC plan and implement measures to prevent oil spills from impacting a waterway (e.g., providing containment around storage tanks, conducting inspections, training employees on the SPCC plan, etc.).

Fuel Tanks with Secondary Containment

A facility is subject to the SPCC Regulation if it meets all three of the following criteria:

- Minimum oil storage capacity,
- Under the EPA's jurisdiction, and
- Reasonable spill potential.

These three criteria are addressed further in the following paragraphs.

Minimum Oil Storage Capacity

The oil storage capacity criterion applies to a facility if it meets one or more of the following:

- A total above ground oil storage greater than 1,320 gallons,
- A total below ground oil storage greater than 42,000 gallons (excluding underground storage tanks (UST) in compliance with applicable state or federal UST regulations).

The minimum oil storage capacity criterion includes tanks, transformers, drums, lube and hydraulic oil reservoirs and other oil containers with a capacity equal to or greater than 55 gallons. The minimum oil storage capacity criterion also exempts any facility or part thereof used exclusively for wastewater treatment and not used to satisfy any requirement of this part [40 CFR 112.1(D)(6)].

The EPA has not provided a definitive interpretation of "oil", but based on NGFA's experience and background with the SPCC regulation, oil includes the following:

- Animal, mineral, petroleum, vegetable oils,
- Fuels such as diesel, gasoline, jet fuel and kerosene, and
- Other non-water soluble complex mixtures.

The definition of oil generally does not include:

- Specific organic hazardous substances, such as benzene, xylene, and toluene,
- Water soluble species such as acids and bases, and
- Substances that are gases at atmospheric conditions.

EPA Jurisdiction Criterion

The second SPCC criterion is jurisdiction by the EPA (i.e., not under the Department of Transportation's (DOT's) jurisdiction). Generally speaking for fixed facilities, oil storage and operations used within the facility are under the EPA's jurisdiction and subject to the SPCC regulation.

Reasonable Spill Expectation Criterion

The last of the three SPCC applicability criterions is a reasonable expectation of a spill reaching a waterway in order for the facility to be subject to the SPCC regulation. However, this spill expectation excludes man-made structures that hinder a spill, but includes man-made structures that help a spill reach a waterway. Secondary containment systems, such as berms and dikes are ignored, but drainage ditches and storm drains are to be considered. The EPA has taken a conservative view of the reasonable spill expectation criteria and facilities are seldom excluded based on this criterion.

3.1.2 Impact on Grain Elevators

Grain elevators may be subject to the SPCC regulation if they have a mineral oil tank or fuel storage. The following is a summary of the general SPCC Plan requirements for the grain elevators:

- Provide secondary containment for bulk oil storage (e.g., containers with a capacity of 55 gallons or greater)
- Update the SPCC Plan to reflect the changes to the facility within six months of making the changes.
- Prepare and maintain a copy of the SPCC Plan on-site and provide it to the EPA or State environmental department personnel upon request.
- Review the SPCC Plan every five years to make sure that the SPCC Plan is up-to-date and the facility's SPCC provisions are in place.
- Periodically train relevant personnel on the applicable requirements of the SPCC Plan.
- Periodically inspect oil storage areas, equipment, containers, pipes and transfer areas, and clean up oil leaks, drips and spills.

4 Emergency Planning and Community Right-To-Know Act (EPCRA)

4.1 Tier II Reporting [40 CFR 370]

4.1.1 Overview

The Emergency Planning and Community Right-To-Know Act (EPCRA) requires that a Tier I or a Tier II form be completed for hazardous chemicals or EHS present at the facility that exceed their TPQ at any one time during a reporting period (i.e., January 1 to December 31) [40 CFR 370.25].

Copies of the Tier II forms must be submitted to the SERC, the LEPC and the local fire department. These reports are due on an annual basis by March 1 for the preceding calendar year. Tier II forms supply the SERC, the LEPC, the fire department and the public with information about hazardous chemical storage at the facility (e.g., facility identification information, persons to call in the event of an emergency, chemical names, physical states, hazard categories, maximum and average storage amounts, storage containers, storage locations, etc.).

4.1.2 Impact on Grain Elevators

Grain elevators typically have the following hazardous chemicals or EHS that require Tier 1 or 2 submission:

- Anhydrous ammonia (i.e., for grain elevators that share property with fertilizer facilities)
- Diesel fuel
- Gasoline
- Mineral oil (exempt for food grade so submission is optional)

The following table identifies the approximate reporting thresholds for some typical grain industry materials.

Material	Reporting Threshold (pounds)
Aluminum Phosphide (Phostoxin)	500 (Approximately 250 to 375 containers)
Diesel (Light Fuel Oil)	10,000 (Approximately 1,600 gallons)
Gasoline	10,000 (Approximately 1,600 gallons)
Kerosene (Light Fuel Oil)	10,000 (Approximately 1,600 gallons)
Mineral Oil (Food grade is exempt and not required to be reported)	*10,000 (Approximately 1,300 gallons: exempt if food grade, but can be reported)*
Propane	10,000 (Approximately 2,040 gallons)

5 Toxic Substance Control Act

5.1 Asbestos [400 CFR 763]

5.1.1 Overview

Because exposure to asbestos, as well as asbestos containing material (ACM), has been documented to cause lung diseases, the use of asbestos is regulated under TSCA [40 CFR 763 Subparts E, G and H]. Asbestos is a naturally occurring mineral, three varieties of which (e.g., chrysotile, amosite, crocidolite) have been used as fireproofing or binding agents in construction materials. Regulatory agencies have generally defined ACM as a material containing greater that one percent asbestos.

Federal and state regulations [40 CFR 61.145] require that either all suspect building materials be presumed ACM or that an asbestos survey be performed prior to renovation, dismantling, demolition, or other activities that may disturb potential ACM. Notifications are required prior to demolition and/or renovation activities that may impact the condition of ACM in a building. ACM removal may be required if the ACM becomes damaged or is likely to be disturbed or damaged during demolition or renovation. Abatement of friable or potentially friable ACM must be performed by a licensed abatement contractor in accordance with state rules and NESHAP. Additionally, OSHA regulations for work classification, worker training and worker protection will apply.

5.1.2 Impact on Grain Elevators

Grain elevators may have ACM including, but not limited to:

- Caulk (Between sheets of corrugated steel bins)
- Ceiling tiles
- Coatings
- Felt paper under roof tiles

- Floor tile
- Insulation
- Siding
- Tar

Prior to demolition activities, the grain elevator may need to have a consultant survey areas for ACM. If the consultant identifies ACM, the ACM may need to be removed prior to demolition activities.

Sites with known ACM that has not been removed need to implement an asbestos management plan that requires the following:

- Periodically observing asbestos-containing materials for signs of damage.
- If damage is observed, contacting an asbestos abatement firm and have the damaged material removed and disposed of in accordance with applicable regulations
- Informing employees about the hazards of asbestos and ACM at the facility