New OSHA Sweep Auger Enforcement Policy

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In 2008 OSHA was asked if an unguarded sweep auger could be operated (energized) while a worker was inside the bin.

OSHA’s interpretation letter published on December 24, 2009 was a resounding NO and stated that employees cannot work inside a bin with an energized sweep auger, unless the auger was “completely guarded”.
Background

• They also referenced 1910.272(g)(1)(ii) of the OSHA grain standard that states:

  “All mechanical, electrical, hydraulic and pneumatic equipment which presents a danger to employees inside grain storage structures shall be de-energized and shall be disconnected, locked out and tagged, blocked off or otherwise prevented from operating by other equally effective means.”
Background

• Prior to the letter, it was common practice in the industry to "guard", or cover the top and back of the auger while in operation.
• OSHA did not offer any acceptable alternative procedures for removing grain from a bin if a partially guarded auger cannot be used, nor did OSHA define what is meant by completely guarded or unguarded.
• In other words it was the grain industry’s problem to solve.
Several months later, OSHA stated that the entire auger, including the front, needed to be covered in order for employees to be in a bin with the sweep auger operating or energized.

However, as we all know, a sweep-auger cannot properly function if it is completely guarded.

This caused massive confusion within the industry since many were unsure of what type of sweep auger equipment could be used and the types of procedures OSHA may find acceptable.
Background

• As a result, OSHA issued numerous citations to grain handling facilities for allowing employees to work in bins with “unguarded” operational sweep augers.

• OSHA also issued citations to grain facilities if employees were allowed to enter a grain bin with a sweep auger that was not de-energized and locked out, even though the sweep auger was not being used.

• Many of these citations were classified as “Willful”, one of the higher classifications with a $70,000 penalty.
Citation Contested

• An Illinois grain facility contested a sweep auger citation.

• Attorneys for the company and company officials worked with an OSHA Area Director who was knowledgeable about sweep augers from personal experience in agriculture.

• Discussion ensued to develop a set of safety principles that would satisfy the “equally effective means or methods” language of the Grain Standard.
Citation Contested

• The end result was a settlement agreement that incorporated a set of 10 Sweep Auger Safety Principles, which if satisfied, would allow the company to have employees working inside a grain bin with an energized and operational sweep auger.

• This settlement agreement initially applied only to the Illinois grain facility.

• On May 3, 2013 OSHA issued a new enforcement memorandum that incorporated the 10 Sweep Auger Safety Principles.
Enforcement Memorandum

• The ten items in the memorandum have not been implemented as law through a formal rulemaking process, and represent only good guidance.
• State plan states are not under any obligation to follow this enforcement memorandum and all have indicated they will not do so.
• Wisconsin is a Federal Plan state and will follow the enforcement memorandum.
Enforcement Memorandum

• Enforcement by OSHA will likely be determined on a case-by-case basis.
• Therefore, if an employee is injured or killed inside a bin while a sweep auger is operating, OSHA may find an employee was in the “zone of danger” and the employer issued a citation for allowing that condition to exist.
Enforcement Memorandum

• In other words, the OSHA memo can be useful for a company that has implemented and is following good safety procedures when an OSHA inspection occurs, provided that an inspection is not predicated on an accident involving an employee injury.
Sweep Auger Safety Principles

• The information being presented is taken directly from the OSHA Memorandum issued May 3, 2013.

• Thanks to John Lee of Grain and Feed Association of IL for providing the pictures used throughout this presentation showing examples that can be used to comply with the Enforcement Memorandum.
-- NOTICE --

• If your company has a policy of not allowing employees into bins with the sweep auger running and it is working for you, **DO NOT CHANGE IT AND CONTINUE TO KEEP EMPLOYEES OUT OF THE BIN!!** This is the safest method to follow.
We are not back to “business as usual!”
Absolutely No Longer Allowed!
Step 1: Eliminate All Bin Hazards

Workers may not enter a grain bin until after issuance of a bin entry permit certifying all the precautions in 1910.272(g) have been implemented.

This tower of grain is 65’ tall.
Step 2: Lockout/Tagout Prior to Entry

All energy sources, including the subfloor auger and grain entry points must be de-energized and locked out before the bin is entered to set up or dig out the sweep auger.
Step 3: Ensure All Sumps are Guarded

All sump grates/guards must be in place and secured before sweep operation begins. Guard openings must comply with Table O-10 of Subpart O – Machine Guarding.
### Table O-10 Subpart “O”

<table>
<thead>
<tr>
<th>Distance Between Protective Covering and Moving Parts of Equipment</th>
<th>Maximum Vertical Opening (Horizontal Openings are Unlimited)</th>
</tr>
</thead>
<tbody>
<tr>
<td>½ to 1 ½ inches</td>
<td>¼ inches</td>
</tr>
<tr>
<td>1 ½ to 2 ½ inches</td>
<td>⅜ inches</td>
</tr>
<tr>
<td>2 ½ to 3 ½ inches</td>
<td>½ inches</td>
</tr>
<tr>
<td>3 ½ to 5 ½ inches</td>
<td>⅜ inches</td>
</tr>
<tr>
<td>5 ½ to 6 ½ inches</td>
<td>¾ inches</td>
</tr>
<tr>
<td>6 ½ to 7 ½ inches</td>
<td>⅞ inches</td>
</tr>
<tr>
<td>7 ½ to 12 ½ inches</td>
<td>1 ¼ inches</td>
</tr>
<tr>
<td>12 ½ to 15 ½ inches</td>
<td>1 ½ inches</td>
</tr>
<tr>
<td>15 ½ to 17 ½ inches</td>
<td>1 ⅝ inches</td>
</tr>
<tr>
<td>17 ½ to 31 ½ inches</td>
<td>2 ⅞ inches</td>
</tr>
<tr>
<td>31 ½ inches to less than 7 feet</td>
<td>6 inches</td>
</tr>
<tr>
<td>More than 7 feet</td>
<td>Protective covering not required</td>
</tr>
</tbody>
</table>
Table O-10 Example

Maximum guard opening 2 1/8 inches.

Floor

Maximum guard opening 5/8 inches.

X

X = 3.5 to 5.5 inches

X = 17.5 to 31.5 inches

X = Distance from grain bin floor to auger flights or conveyor paddle.
Guarding Sumps

Method to secure sump grate
Elevated Sump Guard
Guarding Center Sumps
Step 4: No “Walking Down” Grain

Employees entering a bin cannot walk on the grain where the depth presents an engulfment hazard per 29 CFR 1910.272.
Step 5: Ensure Guards are in Place

All sweep augers (including all portable sweep augers) must be provided with guards, that protect against contact with moving parts at both the top and back areas. The only unguarded portion of the sweep auger should be the front point of operation.
Guarding

• This sweep auger guard is the one provided by the manufacturer. Does this guard comply?
• Not according to the WI OSHA Area Directors. They say it lacks adequate top guarding.
Sweep Auger Guarded Top and Back
Step 6: Ensure Observer is in Place

A rescue trained and equipped observer, in accordance with 29 CFR 1910.272(g), must always be positioned outside the storage bin monitoring the workers inside the bin.
Step 7: If a worker enters a bin with an energized sweep auger...

“...the employer must utilize engineering controls within the grain bin to prevent workers from coming into contact with the energized sweep auger. Acceptable engineering controls may include:”
Step 7: Option #1

- An attached guard that prevents the worker from contact with the unguarded portion of the auger in accordance with 29CFR 1910 Subpart O Machinery and Machine Guarding.
- As we all know, this is not feasible.
Step 7: Option #2

• A sweep auger equipped with a control mechanism such as a “dead-man” switch or other similar device which will allow the sweep auger to operate only when the operator is in contact with the device.

• If this method is utilized, the worker must be positioned at least 7 feet from the energized sweep auger at all times and the sweep interfaced with an E-Stop switch located outside the bin to allow the observer to shut off power to the sweep if necessary.
Step 7: Option #2

• Do you see anything potentially wrong in this picture?
Step 7: Option #2 “Dead-Man” Switch

Note: Switch must be designed so it is not easily defeated.
Step 7: Option #2

Not a “dead-man” or safety switch. This does not allow for sweep operation only when worker is in contact with the device.
No dead-man switch
Push bar T-handle OK with dead-man or safety switch installed.
Step 7: Option #2

• If a second person will be in the bin using this option, then there needs to be two separate push handles, one for each worker.

• The dead-man switches must be wired so that both must be activated at the same time in order to power the sweep auger.

• If any one of the two switches are then released, power to the sweep auger must be interrupted.
Step 7: Option #3

- Any workers other than the operator of the sweep auger present in the bin while the sweep auger is energized must also be protected in a manner that keeps them out of the zone of danger. For example, this may include the installation of guardrails or catwalks that prevent workers from entering the area within the path of the auger.
Step 7: Option #3

Portable guard rails are allowed however.....
You must maintain a 7 foot safe distance or comply with Table O-10 of Subpart O.

Does this comply?
Step 7: Option #3
Step 7: Option #2 or #3

Control center with a “dead-man” or safety switch.
Step 8: Auger Must be Provided With:

- A positive speed control mechanism or......
- A bin/sweep stop device that prevents uncontrolled rotation around the bin.
Step 8: Continued
Step 8: Continued
Step 8: Continued

- The sweep auger stop shall be secured no closer than seven (7) feet from the bin entry point in the direction opposite to the sweep auger’s direction of travel.
Step 9: Hands & Legs Prohibited!

Workers are prohibited from using their hands, legs or other similar unsafe means to dislodge or otherwise manipulate the sweep auger while energized or in operation.
Step 10: Lockout/Tagout Reinforced

Sweep auger must be unplugged with the person performing the maintenance utilizing Lockout/Tagout procedures.
Note: Days of doing this are over!!!

No longer permitted!
New OSHA Sweep Auger Enforcement Policy

Questions???