CONVENTIONAL SILO FIRE DECISION TREE

Conventional Silo Confirmed

Dispatch Silo Team
Lock out/Tag out all power to unloading equipment
Complete Silo Worksheet

Visible sign of fire (flames, embers, heavy smoke) in unloading chute?

No
Yes

Thermal imaging camera available?

No
Yes

Use camera to locate hot zones around silo perimeter.

Heavy smoke observed coming from silage surface?

No
Yes

Raise and secure silo unloader

Direct water stream at flames and heavily smoking area of silage surface with straight tip nozzle.

Use piercing nozzle from outside the silo into hot zones.

Await silo team for technical assistance

Flames observed on silage surface from filling platform?

No
Yes

Direct water stream via straight tip nozzle through burned out silo doors from the chute and/or from the filling platform.

Has smoke from chute subsided?

No
Yes

Enter chute to check integrity of silo doors and unloader wire for signs of electrical shorts.

Extinguish visible fire with water.

Wash down chute area to remove dust and combustibles.

End Operation

Has smoke from chute subsided?

No
Yes

Await silo team for technical assistance.

Flames observed on silage surface from filling platform?

No
Yes

Visible sign of fire (flames, embers, heavy smoke) in unloading chute?

No
Yes

Extinguish visible fire with water.

Wash down chute area to remove dust and combustibles.

Enter chute to check integrity of silo doors and unloader wire for signs of electrical shorts.

End Operation

From bottom of silo chute, are any silo doors burned through?

No
Yes

Direct water stream via straight tip nozzle through burned out silo doors from the chute and/or from the filling platform.

Has smoke from chute subsided?

No
Yes

Enter chute to check integrity of silo doors and unloader wire for signs of electrical shorts.

End Operation

Will farm operator unload silo to below suspected hot area?

No
Yes

Unload silo. Prepare for flare-ups during unloading-observe from loading platform and bottom of chute with charged hand lines.

In conjunction with farm owner, continue to monitor silo.

PRECAUTIONARY STATEMENTS

- CONFINED SPACE PROCEDURES MUST BE FOLLOWED FOR ANY SILO ENTRY
- NEVER FLOOD A SILO WITH WATER
- PROTECT ADJACENT STRUCTURES BY CUTTING AWAY ANY STRUCTURES THAT ARE TOUCHING THE BURNING SILO
- SILOS SHOULD BE EMPTIED BELOW THE BURNED AREA
- DO NOT ATTEMPT TO COOL THE EXTERIOR OF A BURNING OR HOT SILO
- SLOWLY BURNING SILAGE MAY CONTINUE TO BURN FOR SEVERAL WEEKS WITHOUT ANY STRUCTURAL DAMAGE

Disclaimer...The authors make no warranties, expressed or implied, concerning the accuracy, application, or use of the information mentioned or described on this chart. Nothing on this chart is intended as legal advice. Competent professionals should be consulted in any silo fire situation as well as on any medical or legal issues, if any, arising from the use of the information contained on this chart.

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OXYGEN LIMITING AND MODIFIED OXYGEN LIMITING SILO FIRE DECISION TREE

Confirm Oxygen limiting or Modified Oxygen limiting silo

Close and latch silo unloader chute door

Climb silo to close (do not latch) top silo hatch if not already closed

Instruct farmer to keep silo closed for 3 weeks. Observe periodically for smoke or heat.

Inject CO₂ or liquid Nitrogen per recommendations in NRAES-18, Table 4.1 or according to manufacturers directions.

Is smoke or heat still present?

Yes

Stay off silo

Does smoke and/or rumbling observed at silo, and/or side of silo hot to touch?

Yes

No

Heavy smoke and/or rumbling observed at silo, and/or side of silo hot to touch?

Yes

No

Climb silo to close (do not latch) top silo hatch if not already closed

Instruct farmer to keep silo closed for 3 weeks. Observe periodically for smoke or heat.

PRECAUTIONARY STATEMENTS

- NEVER INJECT WATER OR FOAM INTO AN OXYGEN LIMITING OR MODIFIED OXYGEN LIMITING SILO
- NEVER COMMIT PERSONNEL TO ENTER A BURNING OR PARTIALLY BURNING OXYGEN LIMITING OR MODIFIED OXYGEN LIMITING SILO
- PROTECT ADJACENT STRUCTURES BY CUTTING AWAY ANY STRUCTURES THAT ARE TOUCHING THE BURNING SILO
- DO NOT ATTEMPT TO COOL THE EXTERIOR OF A BURNING OR HOT SILO
- ONLY TRAINED INDIVIDUALS SHOULD ATTEMPT TO INJECT GASES INTO OXYGEN LIMITING SILOS

SILO EMERGENCY WORKSHEET

EMERGENCY:

--------FIRE--------RESCUE

SILO TYPE (as originally constructed):

--------CONVENTIONAL--------OXYGEN LIMITING

CONSTRUCTION:

--------STEEL--------CONCRETE STAVE--------CONCRETE BLOCK
--------POURED CONCRETE--------TILE--------WOOD
--------OTHER-----------------------------

MANUFACTURER:---------------------------------------------------------------------------------------

TIME CONTACTED:--------------------------------------------------------------------------------------------

MATERIAL IN SILO: CORN SILAGE--------HAYLAGE--------SORGHUM--------

HIGH MOISTURE GRAIN:--------OTHER-----------------

DATE OF LAST FILLING:-----------------------------------------------------------------------

WAS NEW MATERIAL PUT ON TOP OF OLD MATERIAL?-------YES-------NO

SILO SIZE:-----------------------------HOW FULL IS SILO?-----------------------------

REMINDERS:

☐ LOCK OUT/TAG OUT SILO POWER
☐ RAISE UNLOADER OF CONVENTIONAL SILO DURING FIRE OPERATIONS
☐ RESTRICT AIR FROM ENTERING SILO DURING FIRE OPERATIONS
☐ RUN SILO BLOWER DURING RESCUE OPERATIONS

FOR TECHNICAL ASSISTANCE CALL PEMA EOC
800-424-7362