

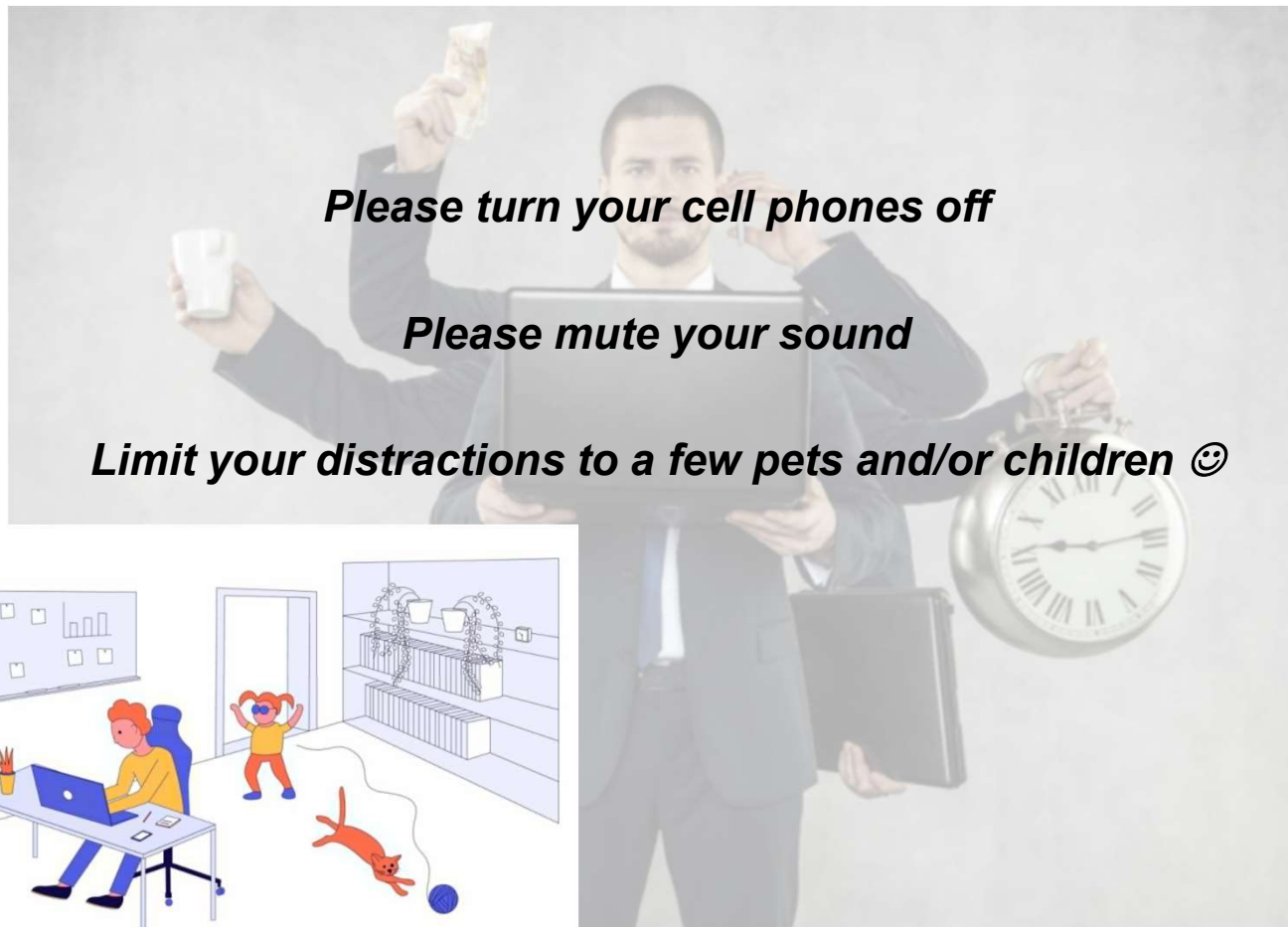
CAMCORP

A MEMBER OF THE SCHEUCH GROUP

THE BASICS OF DUST COLLECTION



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Poll Question

How would rate your knowledge of NFPA as it applies to dust collection and pneumatic conveying?



THE BASICS OF DUST COLLECTION

Poll Question

How would rate your knowledge of NFPA as it applies to dust collection and pneumatic conveying?

- | | | |
|--------|------------|-----------------------------------|
| ▪ 0-1 | Beginner | Little to no knowledge. |
| ▪ 2-3 | Novice: | Some knowledge. |
| ▪ 4-6 | Seeker: | Knowledgeable but can learn more. |
| ▪ 6-8 | Confident: | I can have a conversation. |
| ▪ 9-10 | Expert: | I can educate someone. |

THE BASICS OF DUST COLLECTION

Introductions

Mike Abare – National Sales Manager – Outside Sales Representatives.

Ralph Foiles – Process Protection, Inc.



EXPLOSION PROTECTION NFPA UPDATE 2021

Presented by:

Ralph Foiles

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EXPLOSION PROTECTION UPDATE

- NFPA Standards Updated
 - 61, 654, 664 (2020)
 - 652, 69 (2019)
 - 68 (2018)
- Explosion Protection Solutions
- Applications / Opportunities

NFPA Retroactivity

- ALL these NFPA codes – “the authority having jurisdiction shall be permitted to apply retroactively any portions of this standard deemed appropriate.”

NFPA DHA

Dust Hazard Analysis (DHA)

❑ Facility owner / operator responsible

Completed by:

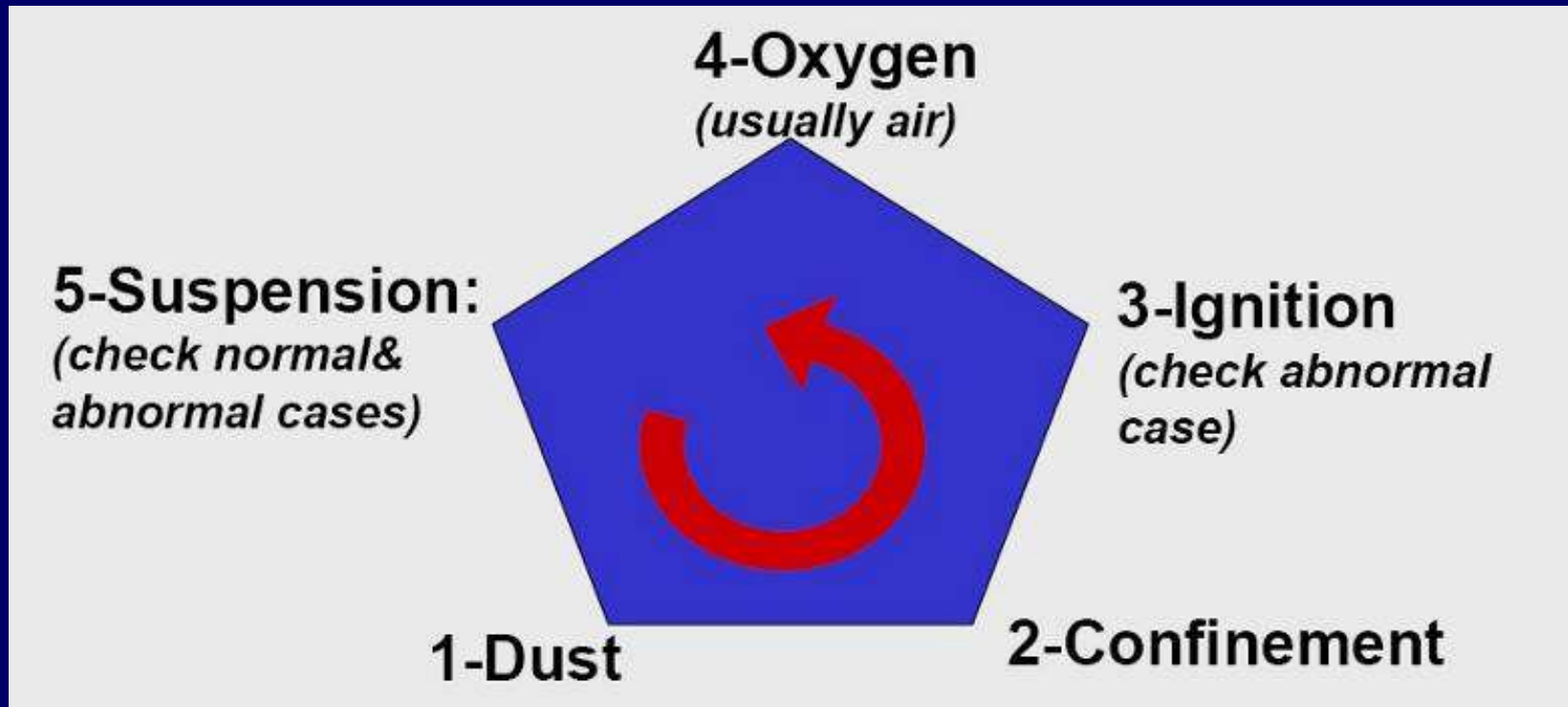
NFPA 652 – 9/7/20

NFPA 654 – 9/7/20

NFPA 61 – 1/1/22

NFPA 664 – not specified => NFPA 652

Explosion Pentagon

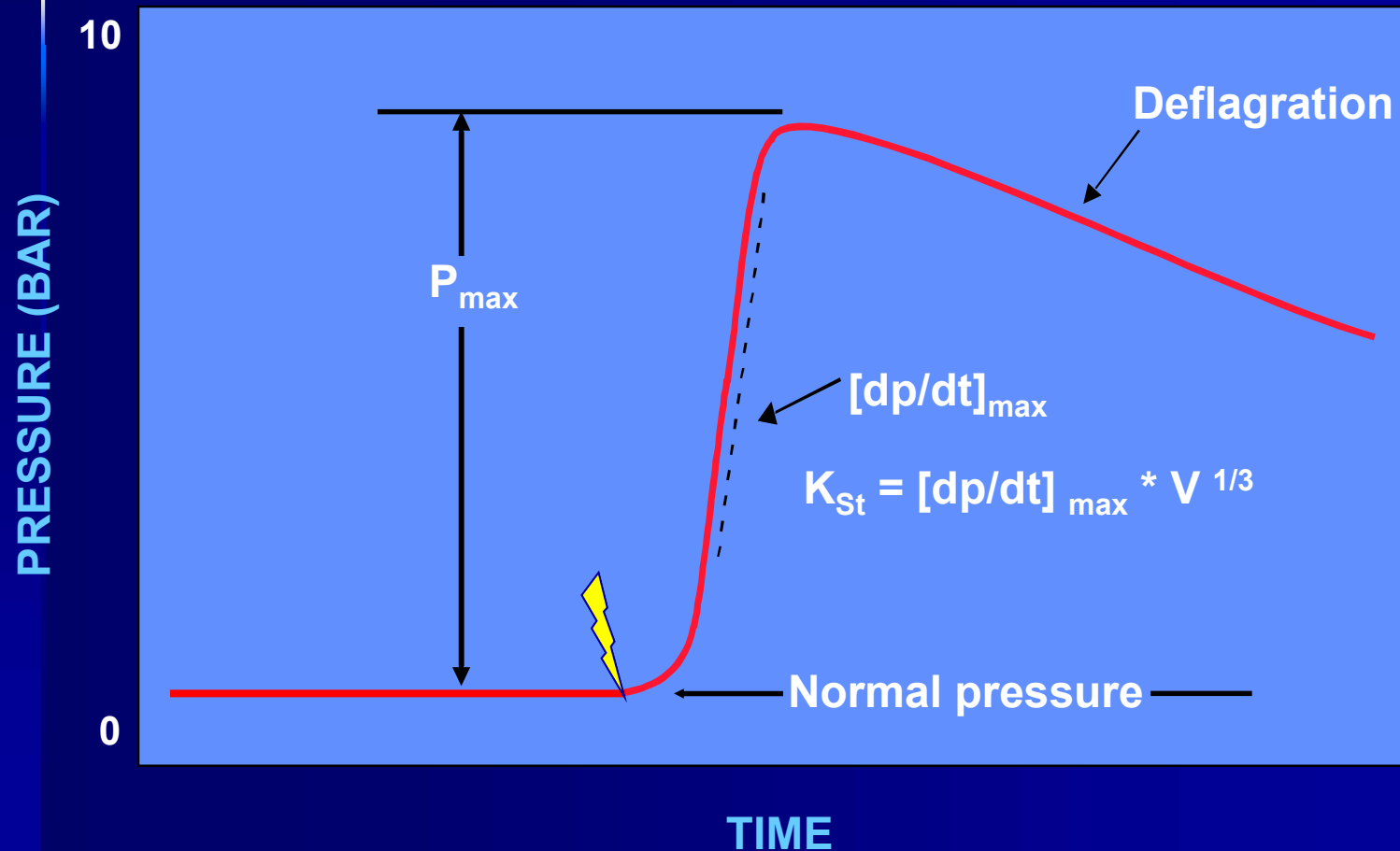


Explosibility Data

NFPA 68, Section 8.1.2

“Where actual material is not available for test, vent sizing shall be permitted to be based on K_{st} values for similar composition materials of particle size no greater than the specified particle size range.”

Deflagration Pressure Curve



Explosibility Data

MATERIAL	Particle Size Microns	P _{MAX} bar	K _{St} bar-m/sec	Hazard Class
COAL	24	9.2	129	1
SUGAR: granular	152	6.2	66	1
SUGAR: powder	45	7.0	122	1
CORNSTARCH	11	7.9	186	1
ALUMINUM	29	12.4	415	3

Source: NFPA 652

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Trivia Question #1

For explosion protection of a dust collector, what are the 3 most practical solutions allowed by NFPA?

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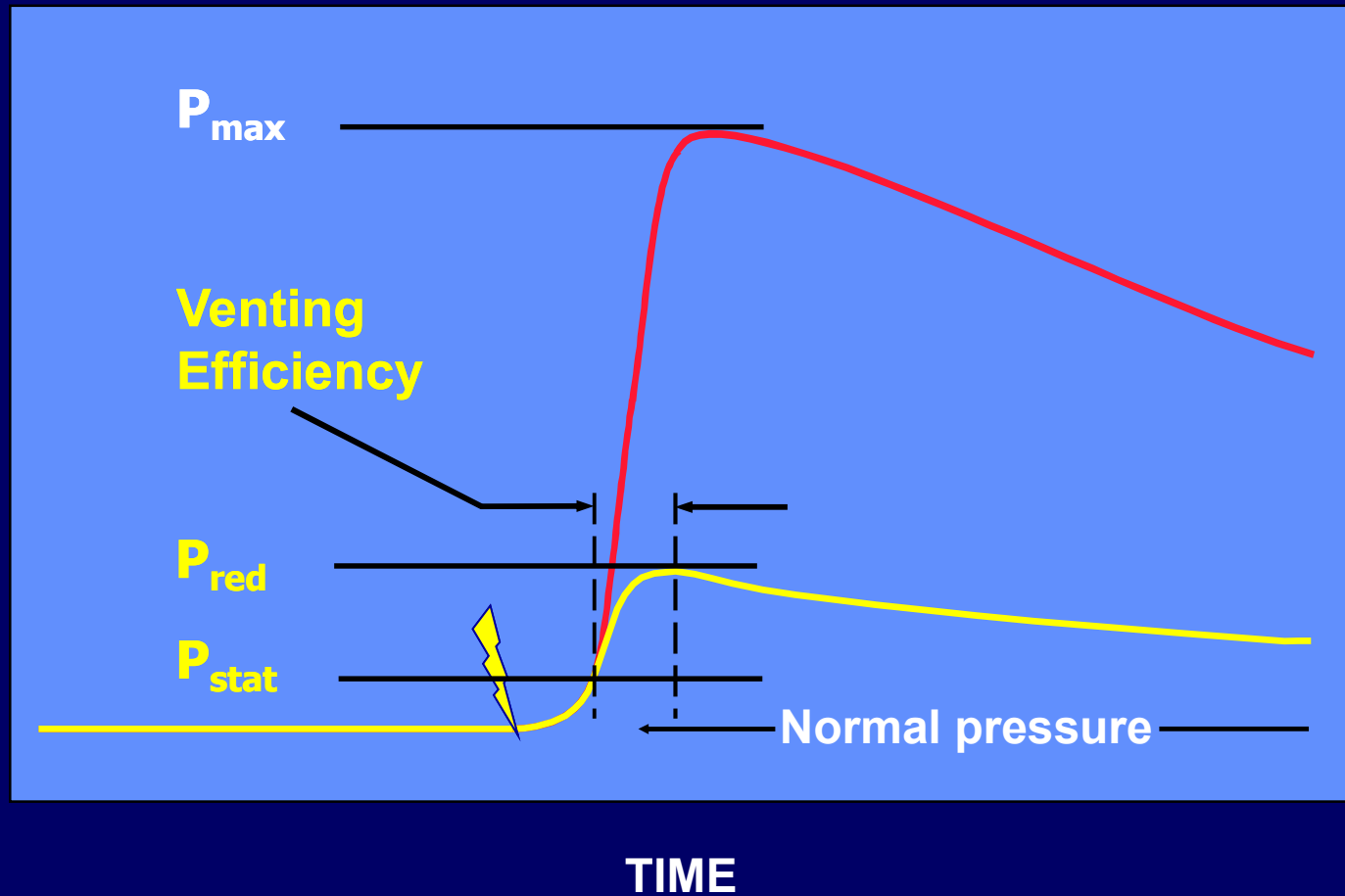
- Explosion venting
- Explosion venting with an arrestor
- Suppression

NFPA Explosion Protection Requirements

- ❑ Oxidant Reduction (Inerting)
- ❑ Explosion Venting
- ❑ Venting with flame-arresting
- ❑ Pressure Containment
- ❑ Explosion Suppression
- ❑ Fuel Dilution w/ noncombustible dust

Vented Explosion

PRESSURE

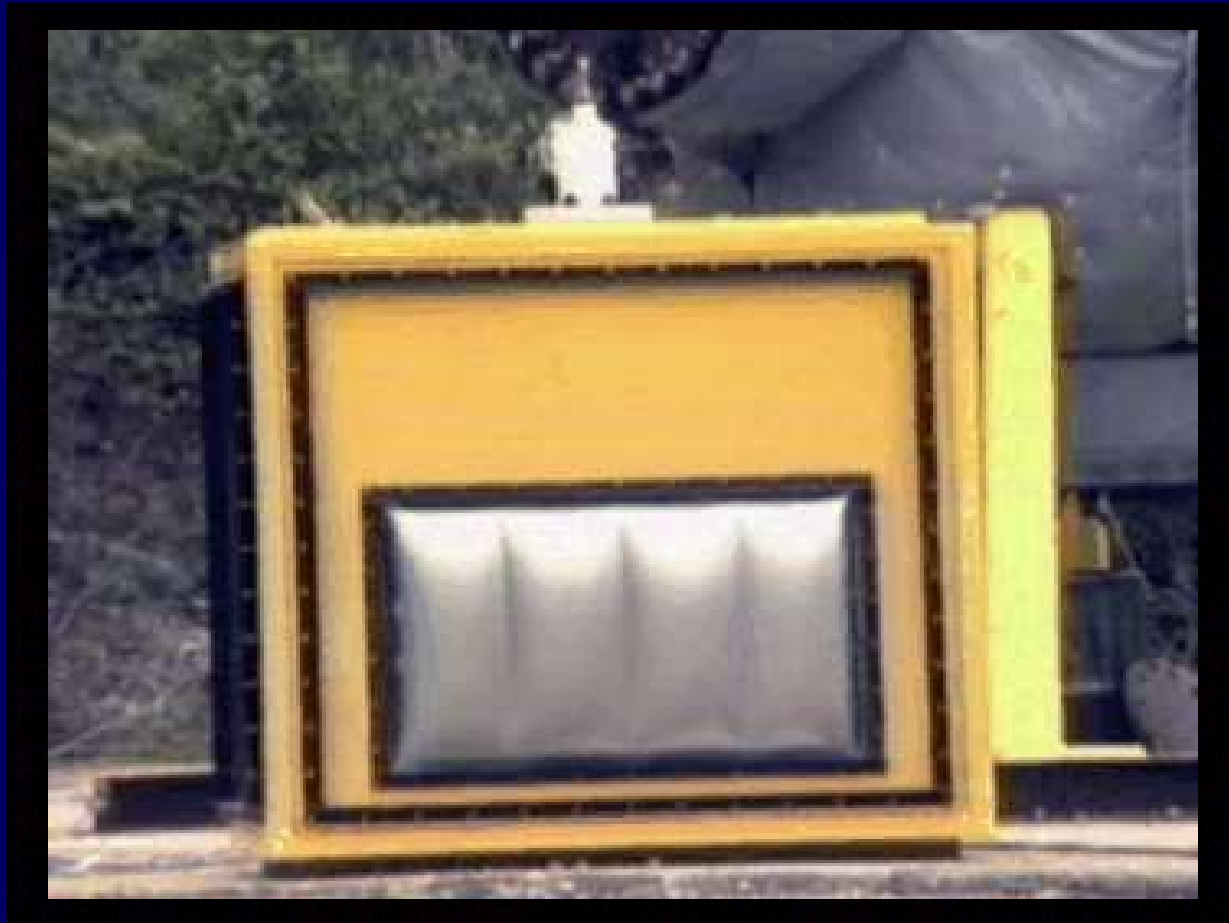


Explosion Venting



Propane Deflagration

Explosion Venting



Cornstarch Deflagration

Dust Collector Located Outdoors



Explosion Vent Deflector Plate



Dust Collector Located Indoors, Near an Outside Wall



Explosion Venting with Discharge Duct

- NFPA 68, section 6.8.6
- Vent ducts with total lengths of less than 1 hydraulic diameter, irrespective of the duct area, shall not require a correction to increase the vent area.

NFPA Explosion Protection Requirements

- ❑ Venting with flame-arresting

Dust Collector Located Indoors, Not by an Outside Wall



With and Without Flame Arrestor



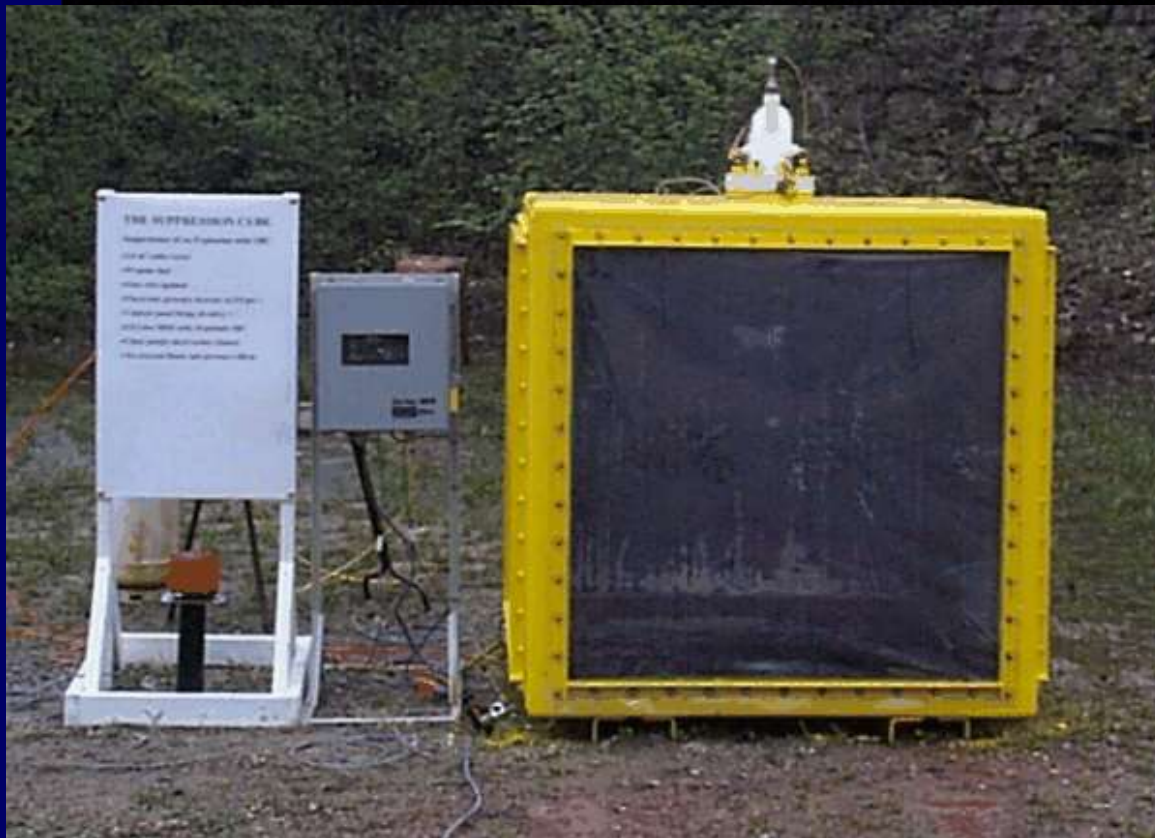
NFPA Explosion Protection Requirements

- ❑ Explosion Suppression

To Vent or not to Vent

- Why use suppression in lieu of venting?
- High K_{st}
- Toxic Material
- Extinguishes the Flame

Explosion Suppression



Suppressed Propane Deflagration

Explosion Suppression



NFPA Explosion Protection Requirements

Where an explosion hazard exists, isolation devices shall be provided to prevent deflagration propagation between connected equipment and/or work areas in accordance with NFPA 69.

NFPA 652 - 9.7.4

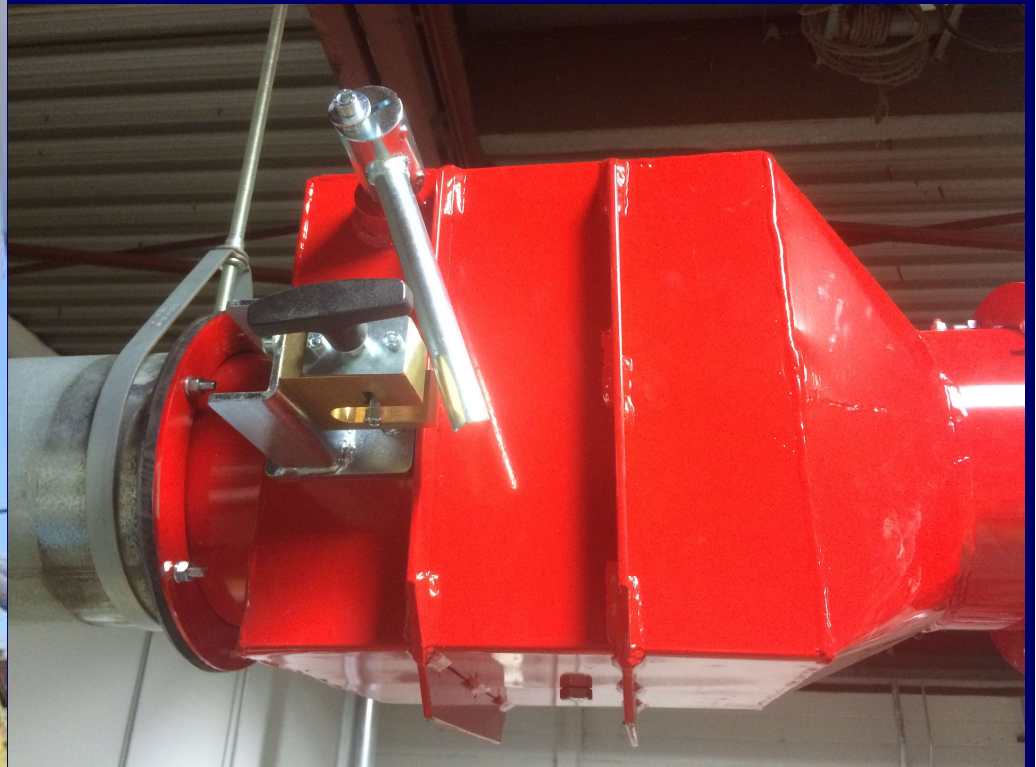
NFPA 654 – 9.7.2

NFPA 61 – 9.7.4

Explosion Isolation Flap Valve



Explosion Isolation Flap Valve



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Introductions

Trivia Question #2

When do you need to isolate the clean air exhaust from a dust collector?

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Trivia Question #2

When do you need to isolate the clean air exhaust from a dust collector?

When the clean air needs to be returned into the building.

Recycling Dust Collector Exhaust back into Buildings

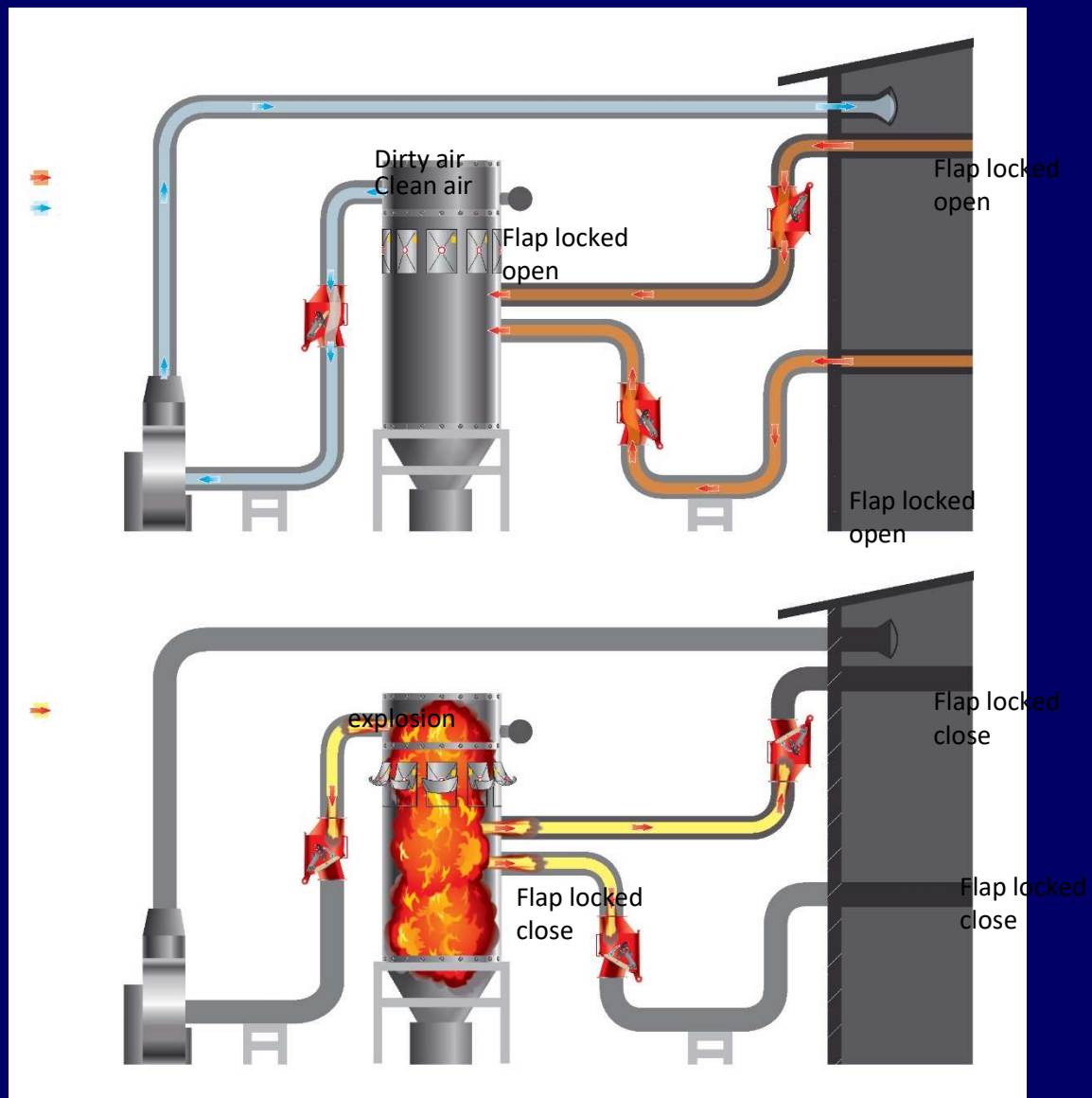
- Prevent flame & pressure from a deflagration back into building
- Prevent smoke & flame from a fire back into building

NFPA 652 – 9.3.4.3.3

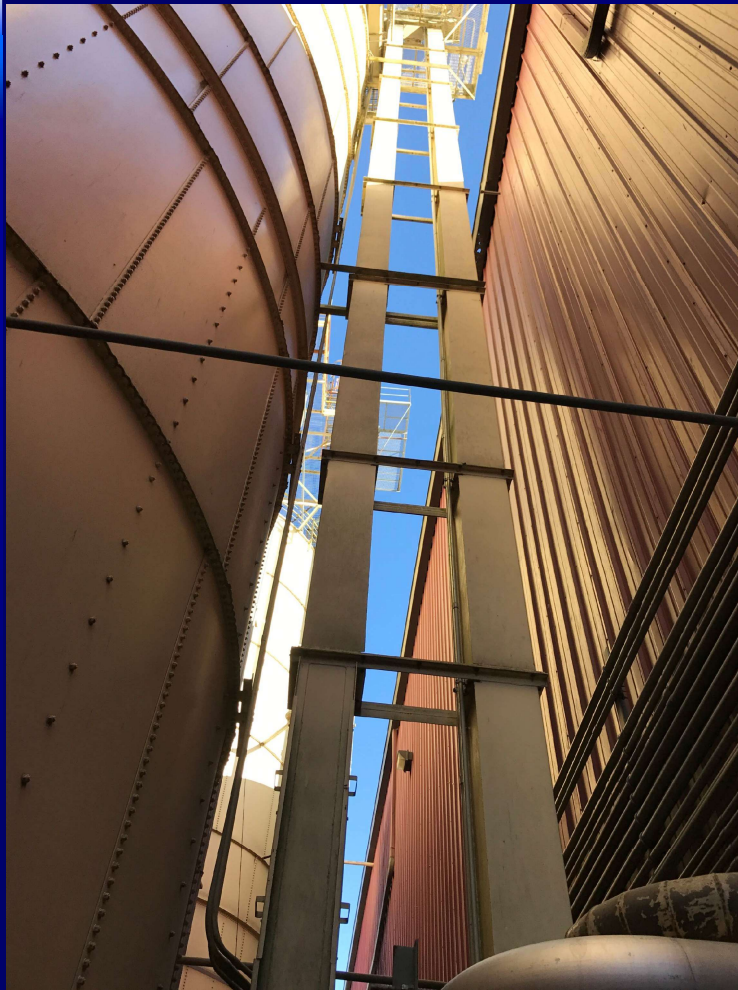
- Prevent transmission of energy from a fire or explosion to the building

NFPA 61 – 9.3.5.1.1

EV-VF SERIES - EXPLOSION ISOLATION VALVE



Bucket Elevator Explosion Protection



EXPLOSION PROTECTION UPDATE

Questions / Comments?

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Poll Question

What areas do you feel you could still use more training in?



THE BASICS OF DUST COLLECTION

Poll Question

What areas do you feel you could still use more training in?

- Dust collection principles
- Product knowledge (dust collectors, fans, airlocks, NFPA, etc.)
- CAMCORP vs. Competition
- Applications (Where to use CAMCORP's dust collectors)
- Laws and Regulations
- Selling skills

THE BASICS OF DUST COLLECTION

HOME > REP HUB



REP Hub



TRAINING



REP KIT

We are constantly looking for concept, ideas, and tools in our efforts to support our valued representatives. If you have any items (sales ideas, strategies, concepts, tools, etc.) you wish to share with the other reps, please contact [Mike Abare](#).

SUBMIT A PROJECT PROFILE



THE BASICS OF DUST COLLECTION

CAMCORP Dust Collection Technology – Upcoming Training

The background of the slide features a faded image of industrial dust collection equipment, including large vertical silos and complex piping systems with yellow safety railings.

UPCOMING TRAINING

***Mid June - Pneumatic Conveying
August 2021 – Dust Collection***

Dates and Topics subject to change.

BASICS OF DUST COLLECTION



Questions?

The image shows a large industrial facility, likely a power plant or manufacturing site, featuring several tall, cylindrical dust collectors or silos. These structures are interconnected by a network of pipes and walkways. The entire system is supported by a sturdy metal framework. In the background, there are other industrial buildings and structures, suggesting a complex industrial environment. The word "Questions?" is overlaid in a large, green, italicized font across the center of the image.

BASICS OF DUST COLLECTION

THANK YOU!

