Technical Design Review

MEETING ID: 01K3V1QW6HHCTP6FHGAGQG84A0

HOST: bclymer@alleatogroup.com

ATTENDEES: christopher.w.lopez@gmail.com,bclymer@alleatogroup.com

The meeting focused on fire protection design for a new facility in Vermilion County, Indiana, emphasizing safety for hazardous materials.

SUMMARY

The meeting addressed the fire protection strategy for a 100,000 sq ft building in Vermilion County, Indiana. A three-hour separation wall and a dry nitrogen system are integral to preventing product damage. It was noted that four classes of oxidizers were identified, particularly Class 3 (CLOR MOR), which necessitates in-rack sprinklers due to its higher fire hazard, with a maximum storage limit of 2,700 pounds. The Early Suppression Fast Response (ESFR) system was selected for Classes 1 and 2 oxidizers, while standard racking height is capped at 30 feet. A double interlock pre-action system will be implemented for nitrogen evacuation, with heat detection recommended for reliability. Although the nitrogen system mitigates pipe corrosion, water leakage and condensation risks remain. The meeting concluded with established communication with Chris Lopez and Brandon Clymer regarding NFPA code compliance and pricing inquiries.

🏗️ \*\*Project Overview & Location\*\* (05:07 - 05:17)

Project located near Terre Haute, Vermillion County, Indiana, involving 100,000 square foot building construction

Building will feature three-hour separation wall down center with essentially same layout as previous design

Client requesting dry nitrogen system throughout entire facility to prevent water damage to products

🔥 \*\*Oxidizer Classifications & Requirements\*\* (02:26 - 08:30)

Four classes of oxidizers identified: Class 1 and 2 protected with water under certain conditions, typically dry chemical or CO2

Class 3 oxidizer (CLOR MOR) requires in-rack sprinklers due to elevated fire hazard

Class 3 oxidizers need sprinklers at every level with no height limitations and horizontal barriers

Maximum storage height limitation of 10 feet for Class 3 oxidizers allows for two levels of racking

📊 \*\*Technical Specifications\*\* (05:09 - 21:18)

ESFR (Early Suppression Fast Response) system acceptable for overhead protection of Class 1 and 2 oxidizers

Class 3 oxidizers require K8 sprinklers every 4 feet with one sprinkler at each flue space intersection

Storage limitation of 2,700 pounds total for Class 3 oxidizers in facility

Standard racking height typically limited to 30 feet under normal conditions

🏢 \*\*Building Layout & Product Storage\*\* (04:28 - 07:26)

Facility will store TCCA raw, DCCA raw, TCCA finished, DCCA finished, and packaging supplies

Packaging supplies are standard cardboard and plastic on racking with no special fire protection requirements

Hazardous materials segregation recommended similar to cage setup at other facilities

🔧 \*\*System Design Requirements\*\* (35:53 - 37:08)

Double interlock pre-action system required with two triggering methods: head break to evacuate nitrogen and secondary detection (smoke/heat)

Heat detection recommended over smoke detection for reliability in industrial environment

Nitrogen system prevents pipe corrosion but doesn't guarantee no water leakage - condensation still possible

- Project involves the construction of a 100,000 sq ft building in Vermilion County, Indiana, featuring a three-hour separation wall and a dry nitrogen system to prevent product damage.

- Four classes of oxidizers identified, with Class 3 (CLOR MOR) requiring in-rack sprinklers due to higher fire hazard and no height limitations for storage.

- Class 3 oxidizers need sprinklers every 4 feet and at flue space intersections, with a maximum storage limit of 2,700 pounds in the facility.

- ESFR (Early Suppression Fast Response) system deemed appropriate for overhead protection of Classes 1 and 2 oxidizers in the facility.

- Standard racking height limited to 30 feet under normal conditions, with hazardous materials recommended to be segregated similar to existing setups.

- Double interlock pre-action system necessary, employing two triggering methods for nitrogen evacuation with heat detection favored for reliability.

- Nitrogen system addresses pipe corrosion but does not eliminate the risk of water leakage; condensation remains a consideration in design.

- Packaging materials stored on racking include standard cardboard and plastic, which have no special fire protection requirements.

- Reliable communications established with Chris Lopez and Brandon Clymer for action items related to NFPA code and pricing inquiries.

- Overall fire protection design aligns with industry standards, ensuring safety and compliance for the hazardous materials stored in the facility.

🔥 Fire Safety Measures: A robust fire protection design is crucial for the new facility's safety.

🧪 Oxidizer Classes: Class 3 oxidizers require specific sprinkler systems due to their fire hazard.

🚨 Emergency Systems: A double interlock pre-action system ensures reliable nitrogen evacuation.

🏗️ Construction Details: The facility features a three-hour separation wall and is 100,000 sq ft.

📞 Team Communication: Effective communication with key team members is established for ongoing compliance.

ACTION ITEMS

\*\*Chris Lopez\*\*

Renew expired NFPA code book subscription to access current fire protection standards (09:21)

Extract relevant code sections and MSDS sheets for oxidizer classifications (33:47)

Provide PDF copy of NFPA code book for project files (34:05)

Generate high-level budget pricing for dry nitrogen system for 100,000 square foot building (34:28)

Contact Potter and ECS for competitive nitrogen system pricing quotes (39:08)

Compile and email all documentation by 1:00 PM after checking into next location (38:43)

\*\*Brandon Clymer\*\*

Determine total volume/weight of Class 3 oxidizer (CLOR MOR) product for facility (32:23)

Identify specific racking location for Class 3 oxidizer storage (38:33)

Create explanatory video for client covering fire protection requirements and system design (38:33)

Obtain pricing for in-rack sprinkler system (microsoft) for Class 3 oxidizer areas (38:33)

KEYWORDS

oxidizer-classifications

in-rack-sprinklers

nitrogen-dry-system

ESFR-protection

fire-suppression-design

hazardous-materials-storage

PROMPT SUGGESTIONS

What specific challenges were identified in implementing the fire protection measures?

How will the nitrogen system be monitored for efficiency?

What are the implications of the maximum storage limit for Class 3 oxidizers?

Can you elaborate on the reliability of the double interlock pre-action system?

What steps are being taken to address the risks of water leakage and condensation?

How will communication be maintained moving forward with Chris Lopez and Brandon Clymer?

Transcript:

https://app.fireflies.ai/view/Vermilion-Rise-Fire-Sprinkler::01K3V1QW6HHCTP6FHGAGQG84A0

Transcript File:

https://download-ff.s3.us-east-2.amazonaws.com/01K3V1QW6HHCTP6FHGAGQG84A0/downloads/transcript/transcript-59311bb6-f80f-4635-92ce-ae09bac840cc-2025-08-29-14-42-13.docx?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAWZAJLUBIVRJ35B6I%2F20250829%2Fus-east-2%2Fs3%2Faws4\_request&X-Amz-Date=20250829T144213Z&X-Amz-Expires=21600&X-Amz-Signature=53dbb5193861a0ecee5a199da646dede9796e6e36166ea43e9d5a0ed60ab19c9&X-Amz-SignedHeaders=host

Audio:

https://cdn.fireflies.ai/01K3V1QW6HHCTP6FHGAGQG84A0/audio.mp3?Expires=1756651334&Policy=eyJTdGF0ZW1lbnQiOlt7IlJlc291cmNlIjoiaHR0cHM6Ly9jZG4uZmlyZWZsaWVzLmFpLzAxSzNWMVFXNkhIQ1RQNkZIR0FHUUc4NEEwL2F1ZGlvLm1wMyIsIkNvbmRpdGlvbiI6eyJEYXRlTGVzc1RoYW4iOnsiQVdTOkVwb2NoVGltZSI6MTc1NjY1MTMzNH19fV19&Signature=pnPyFVk~4gFP-N5Yp0FYweviMNC1l~Hzx0KWkR86O8KZ2uf4ZcQHbNQdqhPUDtjM~E2BZLQFhyuNbyAEwf2lVbh5Gi2MPRD0-lHj46CE3mTAvZLBy~LJsOzFhfHbVU2tvX25gjc3RDih4tcD16L8xlLMRRK7wH57m8oZPlpIvSYr3B~quz1ZcKf43M70PTOBtY7~Tw2M~aGPg3BYehNs42K54YjbGB7QgPMIOf8zAFSoZjlFtLzL969~mvEmFN3bRUYX4q4M517AZx2wn2XTNDplDzgorA~7ZJ-z9bcU-4KGndzqkNQH~0Kf2wQejKzJ1Ng4mJDIJXh3Tdq5~GGfLQ\_\_&Key-Pair-Id=K25ZJR0UZVF4CM

Video:

https://cdn.fireflies.ai/01K3V1QW6HHCTP6FHGAGQG84A0/video.mp4?Expires=1756694445&Policy=eyJTdGF0ZW1lbnQiOlt7IlJlc291cmNlIjoiaHR0cHM6Ly9jZG4uZmlyZWZsaWVzLmFpLzAxSzNWMVFXNkhIQ1RQNkZIR0FHUUc4NEEwL3ZpZGVvLm1wNCIsIkNvbmRpdGlvbiI6eyJEYXRlTGVzc1RoYW4iOnsiQVdTOkVwb2NoVGltZSI6MTc1NjY5NDQ0NX19fV19&Signature=f42h5UA8UsJi3D7O9gzZcVN3G8MMR7eZnU51O655AeAYPTvXeCv1u7sT~KH6BKqOdzvqRegMltegEofQ87kUw0T9Z5PFaMCWbgAQujl~DYlN3zlaHoTgTBxVhlwzTr8FQ64joYEZsMjhRipyc0ETT5BIgjLiZ1LxCKn5TuELmJTdvcxpySrI-V6rfVdv6eYnseHhQnBe5bmO1mC3c97J4K0Y-ZYzDZuZXzFGXRW0HnQ~UmU6MaKv-k9eQeQ3dZPnkJQrUVU9odCZr51Dp8bSvYz5teTecO333WVYL03O~Bmr3fDsvInQJBHz8Miy5aukAzpROreAdSpPBhlpFqJvJg\_\_&Key-Pair-Id=K25ZJR0UZVF4CM