

# Oops! We did it Again

Reducing Human Error-Induced  
Truck Unloading Events

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# Oops, We did it Again: Reducing Human Error-Induced Truck Unloading Events



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We like to listen... but do we learn?

Find at least one thing to take back to  
your facility to share with others.



# Outline



**Oops! We did it again.**



**Brain-Centered Hazards**



**Ways we can prevent mistakes**



# Improper Mix: Harcros and MGPI



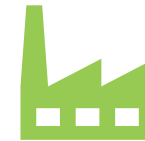
- Truck (Harcros) unloaded material into the wrong tank (MGPI) and incompatible materials reacted to form a chlorine gas cloud
- 11,000 residents sheltered, 140 people sought medical attention, each company paying \$1 million in fines (\$2 million total)

 [Watch Video here](#)



## Human Factors

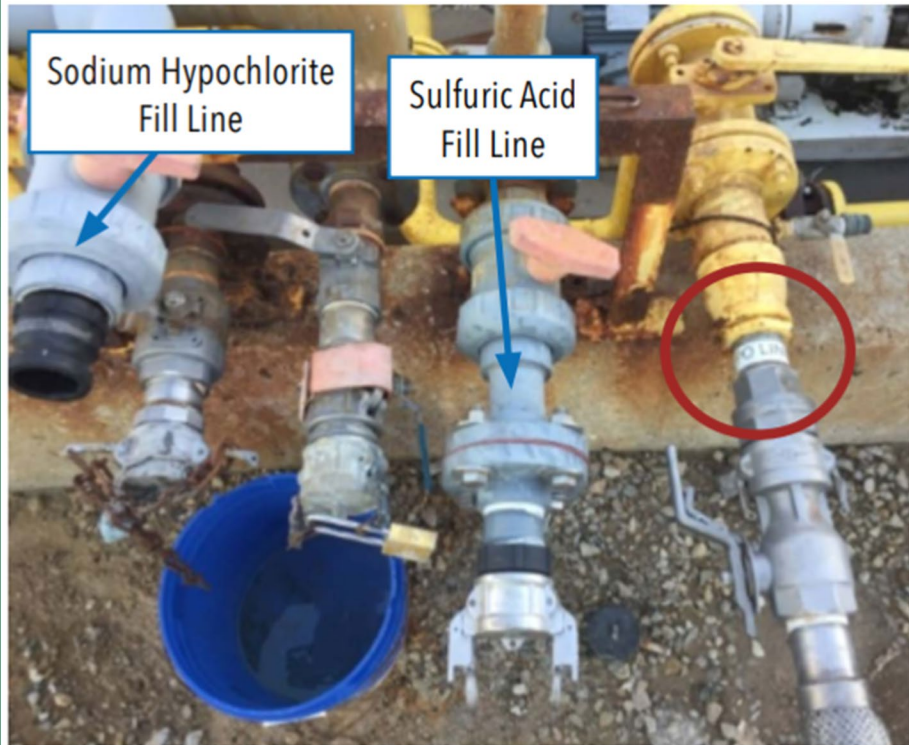
- Hose connections near each other, not marked
- No reactive chemistry hazard recognition or controls



## Equipment

- No automated or remote shut-offs

# A Closer Look



**Figure 11.** Neither sodium hypochlorite nor sulfuric acid fill lines had pipe markers or identification tags affixed at connection points. MGPI did have a pipe marker on the propylene oxide (PO) fill line near the connection point (circled) (Source: CSB).

## Key Conditions

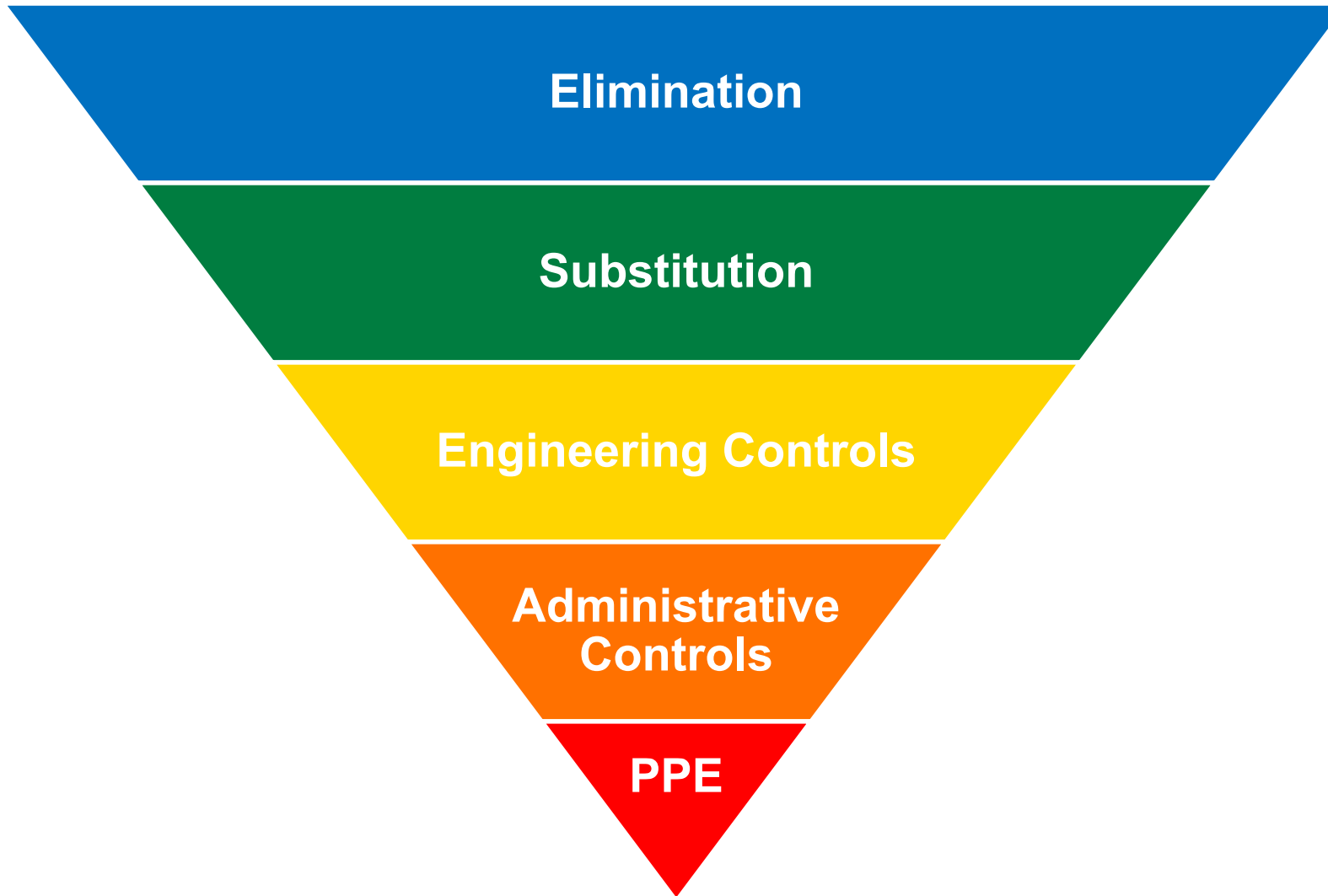
- No Remote Shutoffs
- Driver in the Cab
- Procedures did not align with Operator Practice
- Distracted Operator (Shift Change)
- Confusing Layout

CSB Investigation report [here](#)



# Hierarchy of Controls

Most effective



Least effective



# Human Performance Reliability

Accomplishment of job tasks in accordance with agreed-upon standards of accuracy, completeness, and efficiency.

“Everyone does the job right the first time, every time.”







Some mistakes are easy for us to diagnose.



But not all mistakes are the same.



**CBS NEWS**

**NEWS** ▾

**SHOWS** ▾

**LIVE** ▾



# Officials warn people not to fill plastic bags with gasoline amid panic over gas shortage

**BY CHRISTOPHER BRITO**

UPDATED ON: MAY 12, 2021 / 7:21 PM / CBS NEWS



<https://www.cbsnews.com/news/gas-shortage-plastic-bags-warning/>

# The Seven Brain-Centered Hazards™



## Fast Brain Functioning

Conducting important tasks without conscious thought and reliance on habits.



## Social Think

Our innate need to go along with our group/tribe prevents us from approaching others.



## Visual Recognition

Missing important information due to the human visual system.



## Fatigue

Our conscious attention cannot function when we do not get high-quality sleep.



## Divided Attention

Attempting to multi-task leads to missed information and error.



## Stress & Urgency

When we notice hints of urgency from others, we put pressure on ourselves to complete tasks.



## Memory

Operating on information that feels correct in the moment and relying on our memory system.



# Scenario #1: Driver completes a routine unload at the end of her shift

Fast Brain Functioning

Fatigue

Visual Recognition



# How might we mitigate the hazards?

Visual recognition strategies

Techniques to engage  
Slow Brain Thinking

Address Driver Fatigue

- Shift or hour analysis (and limits!)
- Individual Fatigue Assessment
- Fatigue Risk Management Training



# Scenario #2: Plugged line during the transfer



Social Think

A photograph showing four construction workers in white hard hats and safety harnesses working together to lift a large, heavy wooden beam. They are outdoors, and the beam is being positioned horizontally. The workers are wearing tool belts and safety gear.

Stress/Urgency

A photograph showing a person from behind, looking down at a massive, towering stack of papers and documents. The stack is so high that it obscures the person's face, suggesting a feeling of being overwhelmed or stressed by a large volume of work.



# How might we mitigate the hazards?

Align on risk

Build team communication and intervention capabilities

Develop a strong human performance reliability culture

Implement stress / distraction management strategies

# Let's Use what we Learned

We Can Accurately Predict What People Will Likely Do

- 1 Identify the problems worth solving.
- 2 Change your worldview regarding errors and gain Leadership Support
- 3 Become aware of Brain-Centered Hazards
- 4 Use Data, Worker Engagement, and Expertise to go solve problems!



# Thank you!



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