

U.S. Chemical Safety and Hazard Investigation Board




**William E. Wright, Board Member**  
**NASTTPO**  
 October 27, 2010

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U.S. Chemical Safety and Hazard Investigation Board

**THANK YOU COMBINED MEETING OF**



**EPA CEPP**

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U.S. Chemical Safety and Hazard Investigation Board

**Disclaimer**

The PowerPoint presentation given by William E. Wright, Board Member, United States Chemical Safety & Hazard Investigation Board is for general informational purposes only. The presentation represents his individual views and all references, conclusions, or other statements regarding current on going CSB investigations are preliminary in nature and do not represent a formal adopted product of the full Board. Users of this presentation should also note the contents were compiled solely for this presentation. For specific and accurate information on completed investigations, please refer to the final printed version by going to the CSB website at [www.csb.gov](http://www.csb.gov).

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**CSB** U.S. Chemical Safety and Hazard Investigation Board

## OUTLINE

- What is the CSB?
- The beginning...Bhopal
- What we do and how we do it
- Trends and relevant investigations
- Conclusions, Ethical Issues, & Questions

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**CSB** U.S. Chemical Safety and Hazard Investigation Board

## WHAT IS THE CSB?

- An *independent* U.S. federal agency
  - investigating chemical accidents
  - promoting prevention - public knowledge
- Authorized by Congress in 1990
- Modeled after NTSB
- Five Presidential appointed Board Members
- Professional investigation staff
- Located in Washington, DC/Denver

STANFORD UNIVERSITY  
JOHNS HOPKINS UNIVERSITY  
Dartmouth  
Harvard University  
UNIVERSITY OF CAMBRIDGE

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## CSB BOARD MEMBERS



John Bresland      William WRIGHT      William WARK      Rafael MOURE-ERASO      Mark GRIFFON  
Chairman

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## THE BEGINNING..... Dec 2-3, 1984



- Bhopal, India
- Union Carbide
- Methyl Isocyanate
  - ✓ 42 tons
- > 200,000 exposed
- > 2500 dead
- Clean Air Act 1990

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## WHAT DOES THE CSB DO?

- Investigate chemical incidents
- Determine causes
- Make recommendations
- Promote awareness



**Goal is Prevention**

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## CONGRESSIONAL AUTHORITY

- Independently investigate accidents
  - Chemical incidents (toxic gas, refineries)
  - Explosions and fires
  - Confined Spaces involving chemicals
- Make findings public
- Not an enforcement agency
- Do not assess fines or penalties



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## INVESTIGATION CRITERIA



- **Weighted average process**
  - 10 factors – algorithm

**\$847K**



- Death, injury, health effect (Inside & Outside)
- Evacuation, shelter in place, closures
- Property losses (Inside & Outside)
- Ecosystem damage
- Potential for actual consequences
- Lessons learned
- Public/Stakeholder concerns
- Company history

- **Resources**

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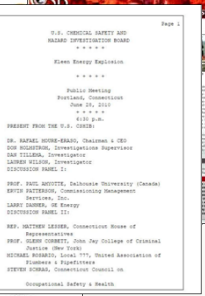
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## AVAILABLE PRODUCTS

- **CSB SAFETY VIDEO**
- **Public Meetings**
- **Investigation Reports**
- **Webinars**
- **Video News Releases**
- **Training Materials**

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## PROMOTE AWARENESS

- Information is essential for safety
- Regular public statements
- Press conferences & public meetings
- Reports, digests, & safety bulletins
- DVDs & videos
- Website [www.csb.gov](http://www.csb.gov)



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## MAKE RECOMMENDATIONS

- OSHA
- EPA
- Congress
- States
- Industry & Trade Associations



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## MERLOT AWARD




Dr Daniel Horowitz  
aka Cecil B D'Horowitz  
accepts the award

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## EPSC AWARD




Dr Daniel Horowitz  
aka Cecil B D'Horowitz  
accepts the  
European Process  
Safety Centre  
Award  
For Safety Videos

Bruges, Belgium  
June 2010

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## REORGANIZATION

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## SAFETY COSTS

*If you think Safety is expensive,  
... try an accident!*

Dr Trevor Kletz  
Adjunct Professor  
Visiting Professor

Authored paper "What you don't have, can't leak" which led to concept of Inherent Safety

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## BPTC SUMMARY

- March 23, 2005
- Blowdown drum
- Liquid hydrocarbon
- Vapor cloud explosion
- 15 deaths/180 injuries
- Largest to date
- Leveraged effort
  - Baker Panel

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## URGENT RECOMMENDATION (Aug 05)

The CSB issued an urgent recommendation that BP form an independent panel to study their safety culture.



**Known as the Baker Panel**

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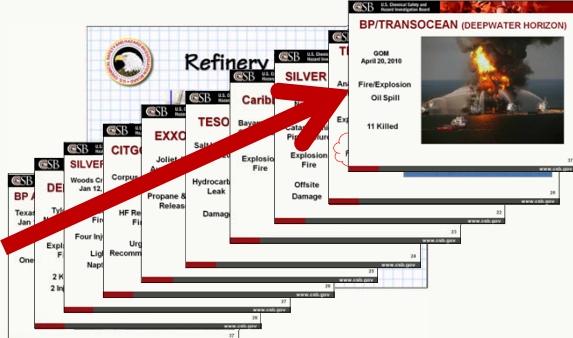
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## CURRENT REFINERY INVESTIGATIONS



BP/TRANSOCEAN (DEEPWATER HORIZON)  
April 20, 2010  
Fire/Explosion  
Oil Spill  
11 Killed

Refinery SILVER

Carib

TESO

EXXC

CITG

DE

BP

Woods Cross  
Propane Release  
Hydrocarbon Leak  
Explosion  
Fire  
Offsite Damage

11 Killed

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## CURRENT TRENDS - INVESTIGATIONS



3 Killed  
Injured  
An  
B

Reportedly threw victim 75-100 feet

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## HOT WORK

- Consider alternatives to hot work
- Monitor before and during operations involving hot work
- Perform comprehensive hazard assessment
- Eliminate potential sources of flammables
- Use written permits
- Provide Safety supervision
- Train personnel on hazards of hot work

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## CURRENT TRENDS

**Manufacturing Incidents**

<b>BAYE</b> Institu Aug Exp Residu 2 Fat	<b>NDK</b> Phosgene Leak 1 Killed	<b>DUPON</b> Zinc Recycling 2 Fatalities	<b>HORSEHEAD HOLDING COMPANY</b> Explosion 22, 2010
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## CURRENT TRENDS - INVESTIGATIONS

**C&EN** Negligence Caused: State safety and health...  
**L.A. NOW** UCLA got off too easily in student's death, family says

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# XCEL ENERGY

**Georgetown, CO  
Oct 2, 2007  
Aug 28, 2010 Report**

**Epoxy Coating Operation  
MEK  
Enclosed Space Fire  
5 deaths smoke inhalation  
4 injured**

**PROFILE**

## Xcel's 2007 fatal Cabin Creek draws grim animation, angry rebuke from safety board

By Monroe Rosen, The Aug. 24, 2010 @ 2:02 PM  
Company Website News

Members of the U.S. Chemical Safety Board are scheduled to vote tomorrow to talk about safety recommendations prompted by the investigation into a 2007 accident at Xcel Energy's Cabin Creek hydroelectric plant, which took the workers there down.

And there's one powerful audio-visual aid — an animation of the workers' final moments, based on the video below.

Xcel reports it wants to block the release of the safety board's report until after a criminal trial on the deaths. When that didn't work, the company lodged a draft document to the Denver Post and others. This strategy is considered bad news for the CSB, because it would prevent the release of information to Xcel employees. Patrick C. Kelly is a veteran in a town that suggests his underlying frustration.

Here's a [video summary](#) which shows Xcel to Xcel Energy, owner of West Virginia's Big Bend nuclear power station, which was killed by an explosion, which took nearly the entire town of the energy Louisiana.

**Legal Actions to Block Publication of Report**

Instead of accepting the repeated requests to help expedite the investigation, Xcel took the unprecedented step of going to federal court to block the publication of the CSB report just going to the public. The company's lawyers argued that Xcel's right to privacy outweighs the public's right to know the findings and recommendations.

Based on the evidence presented at the June 24, 2008 hearing, the arguments, and the applicable law, the CSB's preliminary report to be published. However, the CSB's preliminary report is not an official report of the CSB until it has been approved by the CSB. The CSB's preliminary report is not an official report of the CSB until it has been approved by the CSB. The CSB's preliminary report is not an official report of the CSB until it has been approved by the CSB.

**Unethical Disclosure of Partial Draft Report**

The CSB, as Xcel attorney, is clear violation of CSB's restrictions contained in the CSB cover letter, provided with a complete press release of the CSB report to the media on the day of the Board's

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United States Chemical Safety Board**

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