

**U.S. Chemical Safety Board  
News Conference August 25, 2010  
Denver, Colorado  
Xcel Energy-RPI Coating, Inc. Accident Investigation Final Report**

WILLIAM WARK REMARKS

Good afternoon. A horrible tragedy occurred on October 2nd, 2007, up in the mountains west of here at the Xcel Energy hydroelectric plant in Georgetown.

Five workers died as a result of a flash fire and smoke filling the confined space tunnel they were in, blocking their escape to the one and only exit available to them.

Painting contractors from RPI Coating, Incorporated --- working for Xcel Energy --- were recoating a portion of a 4,300 foot water tunnel, or as it is called in the industry, a penstock.

Another five workers – those on the tunnel exit side of the painting platform, were able to escape – though three were injured.

My deepest sympathies go out to the loved ones, friends, and colleagues of those who died in this terrible accident.

This tragedy should never have happened. There were significant hazards involved with working deep inside a confined tunnel space with flammable liquids, no nearby rescue crews, and no adequate planning for escape. These hazards were not properly controlled. Our investigation found there was little effective planning for the dangers of bringing significant amounts of flammable liquids into the tunnel, which was a hazardous confined space. Doing so was an unacceptable deviation from good safety practices.

The penstock had only one egress point – the tunnel entrance. Yet published safety guidance for penstocks includes the importance of alternative escape routes. Xcel and RPI did actually identify this as a major concern in their planning. But despite this, no remedial action was taken: no plans were made for rescue on the other end of the tunnel, and no rescuers were immediately available who were qualified to enter this environment.

The CSB has made several important safety recommendations as a result of this accident. We will outline those in a few minutes. But first I would like to introduce my colleague, fellow CSB Board Member Mark Griffon.

MARK GRIFFON COMMENTS

Thank you Member Wark.

I too want to express sympathy for the loved ones and colleagues of those who died in this accident.

Even before the operation began, the stage was set for disaster.

One important cause of the accident was Xcel's method of selecting a painting contractor. Xcel selected RPI Coating, Inc. even though it had the lowest possible safety rating ... a zero. The selection was done mostly on the basis of cost – RPI had the lowest bid.

Our investigation found that Xcel hoped to compensate for RPI's safety record by closely supervising the contract work, but did not do so even when the company learned of safety issues during initial penstock work.

Another cause was the lack of planning and training for hazardous work by Xcel and its contractor, RPI. Absent proper planning, Xcel and RPI allowed flammable liquids to be introduced into a permit-required confined space without taking the necessary precautions.

The Occupational Safety and Health Administration, or OSHA, has a rule, governing flammable atmospheres in confined spaces like the one in the Xcel tunnel.

If Xcel and RPI had followed current OSHA regulations which include requirements for defining safe work conditions as well as conducting continuous air monitoring this incident may have been avoided.

OSHA regulations require permits and the company should have included "safe work conditions" in the permit. However, we feel OSHA should go further with its regulation and specify safe work conditions for working with flammables in permit required confined spaces.

The CSB is recommending that OSHA establish a fixed maximum percentage of the Lower Explosive Limit (LEL) for entry so that work in potentially flammable atmospheres would be prohibited.

Establishing an enforceable regulatory limit will, we believe, give workers and companies essential direction on planning and controlling hazards within confined spaces.

I will now turn the podium over to investigations supervisor Don Holmstrom. Mr. Holmstrom is in charge of the CSB investigation of the BP Deepwater Horizon blowout. And he led the two-year investigation of the BP Texas City refinery accident that killed 15 workers in 2005. Mr. Holmstrom.

## DON HOLMSTROM REMARKS

Thank you Mr. Griffon and Mr. Wark.

Our investigation found that Xcel and RPI managers were aware of the plan to operate an epoxy sprayer and of the need to use solvent to clean the sprayer and other equipment in the tunnel. However, neither company performed a hazard evaluation of the epoxy recoating work.

As a result, the companies failed to identify serious safety hazards involving the use of flammable liquids within the confined space.

We would now like to play for you our new CSB safety video detailing the causes of this accident. It is called "No Escape: Dangers of Confined Spaces." We hope this video will get wide usage in industry throughout the country as confined space hazards are ubiquitous.

[PLAY VIDEO](#)

## MR. HOLMSTROM CONTINUES:

The CSB found the OSHA confined space rule does not prohibit entry or work in dangerous atmospheric environments where the concentration of flammable vapor exceeds ten percent of the lower explosive limit.

The Board is recommending that OSHA strengthen its regulations to prohibit entry in potentially dangerous atmospheres. This regulatory change, if adopted by OSHA and implemented by companies, will save lives in the future.

I point out, however, the lack of such a rule did not absolve Xcel or RPI of the responsibility to have done a hazard analysis, which in the view of the investigation team would have clearly showed that there was no way to work safely in an environment in which this much flammable solvent was brought in to a confined space.

Let me just add that nationally, this is not an isolated incident. Our investigation found there are approximately three million linear feet of penstocks in service in hydroelectric plants in North America. They have to be recoated and relined to maintain water tightness. This work, as we saw at Xcel, presents special hazards to workers.

For confined spaces in general, the CSB identified 53 serious incidents involving fires and explosions caused by a flammable atmosphere since 1993. These caused 45 deaths and 54 injuries – the majority of them just since 2001. So it is a national problem.

Now Board Members Wark and Griffon will discuss some of the rest of our safety recommendations, which were approved by the Board in a vote on Monday.

#### WILLIAM WARK COMMENTS ON RECOMMENDATIONS

Thank you.

Besides OSHA, the CSB made recommendations to nine other entities, including the Governor of Colorado, the Colorado Public Utilities Commission, Xcel and RPI.

The Board recommended the governor implement an accredited firefighter certification program for technical rescue, including confined space rescue.

We are recommending that the Colorado Public Utilities Commission require regulated utilities such as Xcel Energy to investigate all incidents resulting in death, serious injury or significant property damage, and to submit written findings and recommendations to the Commission within one year of the accident.

And we are making a recommendation we consider especially important on the role of contractors: The board recommended that the Colorado Public Utilities Commission require regulated utilities to adopt provisions for selecting contractors based on safety performance measures and qualifications.

The Board recommended that Xcel revise its policies for solicitation and procurement of services by contractors to emphasize safety, and to require a comprehensive review and evaluation of contractor safety policies and procedure such as for work in confined spaces.

Numerous recommendations were made to RPI Coating, particularly aimed at revising its confined space entry program and guidance.

Finally, we want to comment on the difficulties the CSB encountered in the investigation as a result of actions by Xcel Energy and RPI Coating.

These companies made numerous, unprecedented attempts to impede the investigation and prevent its release. Those efforts and the CSB's response are detailed in a letter from Chairperson Rafael Moure-Eraso to the Xcel chairman, which we made public on Monday. Copies of that letter are available at the back of the room.

We will now take your questions. Please state your name and affiliation.