

# Xcel Energy Company Hydroelectric Tunnel Fire

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<https://www.csb.gov/xcel-energy-company-hydroelectric-tunnel-fire/>

## Activity

Xcel Energy Company is located in Georgetown, Colorado and owns electricity-generating turbines. On August 25, 2010, industrial painting contractors were tasked with a job to coat the inside of a four-foot diameter pipe with epoxy. This pipe is underground and several feet long connecting a reservoir with the turbines.

## Hazard

Hazards associated with confined spaces are the chance of toxic atmosphere, oxygen deficiency, oxygen enrichment, flammable or explosive atmospheres, or excessive heat.

According to the Safety Data Sheet for methyl ethyl ketone, the hazards are:

- Highly flammable liquid and vapor.

- Causes serious eye irritation.

- May cause drowsiness or dizziness.

- Keep away from heat/sparks/open flames/hot surfaces.

- Keep container tightly closed.

- Take precautionary measures against static discharge.

## Preventative Actions and Safeguards

Perform the proper analysis before beginning any task especially those requiring confined spaces.

## Contingency Plan/ Mitigating Actions

Have the proper response team on site in case of an emergency needing immediate response.

## Initiating Event

The industrial painting contractors began their work without proper hazard evaluation of bringing significant amounts of this flammable solvent into the confined space of the underground pipe.

## Incident

A flash fire unexpectedly erupted as the vapor from the flammable solvent, used to clean the epoxy spraying wands, ignited due to the static spark from the spraying machines near by. The fire grew rapidly, igniting the other buckets of the solvent, methyl ethyl ketone (MEK), and other epoxy materials stowed nearby. Five people were killed due to smoke inhalation while three other were injured from the fire.

## Lessons Learned

Multiple causes of the accident have been identified. They are the lack of preparation and training for hazardous work by Xcel Energy Company and their painting contractors. The painting contractor that they decided to hire had the lowest possible safety rating among the other contractors they could

have went with. There was also the mistake of permitting volatile flammable liquids to be brought into a permit required confined space without required special precautions. Proper hazard analysis should have been done before bringing significant amounts of flammable into a confined space, showing the importance of proper documentation and acquiring proper permits. When dealing with confined spaces, there should be a qualified rescue team on stand by in case of any emergency. The lives of the men who died could have been saved if the proper emergency response team was present from the start.

