Makeshift Fuse Arcs

An electrical arc ignited dust in a wood flour mill, causing an explosion that burned a worker to death.

The 50-year-old production worker was one of three employees working at the mill in two shifts. They had worked together for nine years. He was working alone at the time of the fatal incident.

Lacking a replacement for an inappropriately-repaired fuse, the victim put it back in. The next day he switched on the mill equipment. The switches were near the fuse-panel room. A hole in the wall had allowed wood dust to enter the room. The rigged fuse arced against its holder, and dust in the panel ignited. Dust nearby exploded in a rapid series that combined into one loud superheated explosion, reaching through the wall hole to the victim. His upper body was severely burned and he inhaled toxic, superheated air. He died in a burn center five days later.

A fire investigator for Oregon Fatality Assessment and Control Evaluation and Oregon Occupational Safety and Health Administration investigated and made the following recommendations.

- Don’t bypass or alter protection devices for electrical current.
- In wood products manufacturing, practice good housekeeping for a dust-free environment.
- Isolate electrical equipment from explosive dust.

Source: Oregon, Fatality Assessment and Control Evaluation (FACE) Program, Case Report 2003-21-1