

MNM Fatal 2014-14

- Explosion of Gas
- June 18, 2014 (South Carolina)
- Sand & Gravel Mine
- Production Supervisor
- 41 years old
- 19 years of experience

Overview

The victim was killed while he and two contract mechanics were attempting to replace an impeller on a waste water slurry pump. After several failed attempts by the mechanics to loosen the impeller by prying and hammering, one of them used a torch to apply heat to the sealed impeller hub in the center area of the impeller, but the impeller did not loosen. The victim then took the torch and applied heat to try to loosen the impeller hub. The center of the impeller suddenly exploded and metal fragments struck him.

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Root Cause

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Corrective Action: Management established Standard Operating Procedures (SOP) for persons to safely perform maintenance work on waste water slurry pumps. All miners were trained regarding the SOP's to be used when performing maintenance on a slurry pump.

Best Practices

- Establish and discuss safe work procedures before beginning work. Identify and control all hazards associated with the work to be performed and use methods to properly protect persons.
- Train all persons to understand the hazards associated with the work being performed.
- Do not apply heat or open flame where enclosed spaces such as impeller hubs, mounted tires, suspension struts, or tanks may be subject to explosion except as directed by the manufacturer.
- Always examine materials before applying heat, cutting, or welding to ensure gases from the applied heat can vent.
- Never apply heat to materials before ensuring that flammables/combustibles/explosive materials are not present.
- Never apply heat to materials where pressure build up is possible.
- Do not apply heat or open flame where lubricants, oil, or grease are present.
- Use special tools, provided by the manufacturer, to loosen an impeller on a pump.
- Refer to the maintenance manual, warning labels on the pump, or contact the manufacturer for special safety precautions.