

Investigation information release

Date: August 2024

Dangerous incident involving an explosion in a reclaim tunnel after use of an electrofusion welder

Incident date: 22 July 2024

Event: Dangerous incident involving an explosion in a tunnel under a reclaim stockpile at a metalliferous mine.

Location: Cadia Valley Shared Services Infrastructure, Cadia Mine, Orange District NSW.

Overview

An explosion occurred after 2 workers completed an electrofusion welding task involving high-density polyethylene (HDPE) components.

The mine

Cadia Valley Shared Services Infrastructure is a crushing and ore processing operation within the broader Cadia Valley gold mining operations. The mine is operated by Cadia Holdings Pty Ltd, which is ultimately held by Newmont Corporation.

The incident

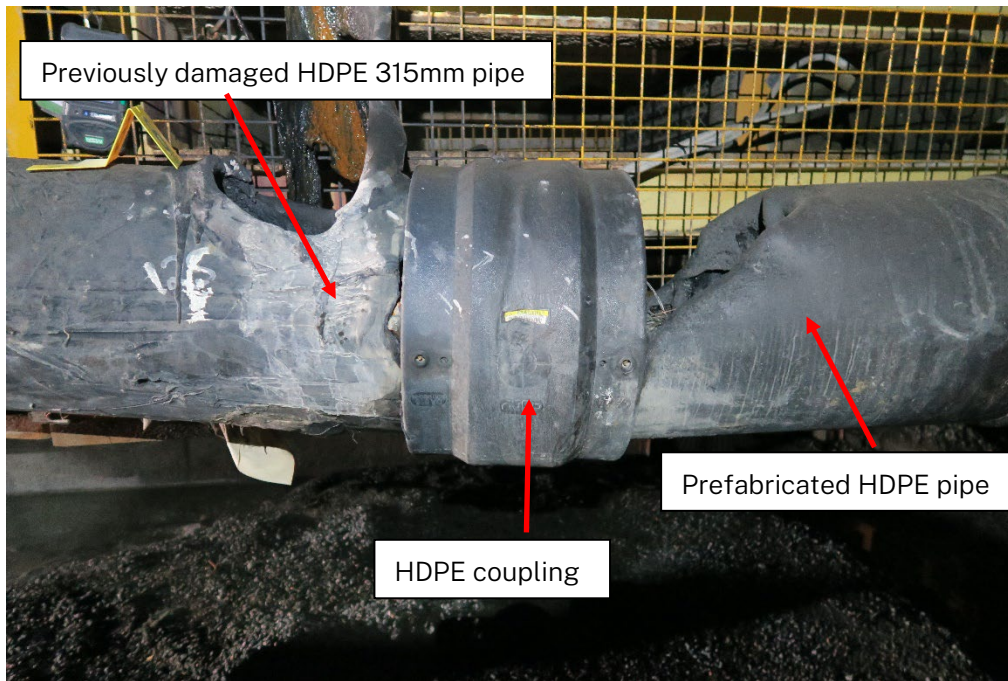
Two workers attended the Concentrator No 2 scats reclaim tunnel to extend the existing HDPE piping that connected to the underpans of a conveyor feeder and ran towards the back of the tunnel. Part of the task involved fitting a HDPE coupling to an existing length of HDPE pipe and another prefabricated length of HDPE pipe. The end of the existing length of HDPE pipe had been damaged by mobile plant.

To prepare the pipe surfaces before the electrofusion welding process started, the ends of the 2 pieces of pipe were cleaned using an abrasive sanding pad affixed to a handheld grinder and the ends were wiped with paper towel product (WypallX80).

The workers also placed this paper towel product into the existing pipe to help stop a slow leak of water coming from further up the pipe towards the welding area.

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Figure 1 - Heat damaged HDPE coupling and connecting pipes



Once the coupling and 2 pipe pieces were fitted together, the workers set up the electrofusion welding unit by connecting the electrodes to the coupling. The workers then scanned the supplied barcode that was affixed to the coupling. The barcode provided the product information the welding unit required to automatically adjust the welding settings. In this instance, the welding unit determined the applicable welding time to be 1040 seconds.

Figure 2 - The electrofusion welder used in the work task



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After the welding process was complete, the workers disconnected the welder from the coupling. At this point, the workers left the area to obtain sealant to apply to any gaps around the fittings. They were away from the tunnel for about 15 to 20 minutes. Upon their return to the tunnel, they saw thick smoke coming from the top of the tunnel. The workers immediately retreated from the area and made an emergency call via the site radio.

While the emergency response was being mobilised, an explosion was seen and heard coming from the end of the tunnel. The explosion caused some damage to equipment and infrastructure immediately in front of the tunnel and scattered debris over a distance of 60 metres. The explosion was captured on CCTV.

Figure 3 - CCTV footage of the tunnel explosion (top right of photo)



There were no injuries as a result of the incident.

The investigation

The Resources Regulator has commenced an investigation to determine the cause and circumstances of the incident. The investigation will canvass the effectiveness of controls to eliminate or minimise the risks to health and safety of workers arising from the electrofusion welding process including:

- planning the work
- materials and processes used in preparing component surfaces for welding
- instruction, training, experience and supervision of the workers
- adequacy of risk assessments, work instructions and procedures
- adequacy of controls to minimise the risk of fire and explosion
- the tunnel work environment.

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Further information

Please refer to the following guidance materials:

- [PPTEU Safety Alert - HDPE Electrofusion Fire Hazard](#)

About this information release

The Regulator has issued this information to draw attention to the occurrence of a serious incident in the mining industry. Further information may be published as it becomes available.

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- learn more about our work on causal investigations and emergency response
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