Coal mine worker fatally injured performing maintenance on a large excavator bucket

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What happened?

A coal mine worker, who was fatally injured while carrying out repairs on a large excavator bucket (Fig. 1), had been arc air gouging a large wear plate on the bottom of the bucket so it could be removed in small sections.

Fig. 1 Bucket and wear plate

How did it happen?

While the exact cause of the accident has not been determined at the time of publishing this alert, the stored energy in the plate, and the resulting uncontrolled spring action of the plate, impacted on the coal mine worker causing fatal injuries.

Comments

This alert should be actioned by site senior executives (SSEs) and the need to recognise and quantify the magnitude of stored energy that maybe present when completing similar tasks communicated to workers.

Recommendations.

It is recommended that mines' SSEs:

1. Review the safety and health management system, including the following:
    a. Any procedures for the identification of stored energy situations
    b. Any standard operating procedures and associated controls for hot work, cutting and welding.
2. Develop specific work instructions for dealing with similar wear packages.
3. Ensure any permit systems include controls for stored energy hazards.
4. Ensure 'line of fire' is identified.
5. Ensure tasks that may identify critical hazards are fully assessed by appropriate persons.
6. Make persons carrying out similar tasks aware of the extent of the stored energy hazard.
7. Review and assess potential risk from different types of wear packages fitted to buckets.
8. As part of bucket repair tasks ensure previous repair history is assessed before commencing work.
9. Conduct comprehensive non-destructive testing to identify the condition of the bucket and include findings in the task assessment.

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