

SAFETY ALERT



BROKEN CHAIN CONNECTOR RESULTS IN SERIOUS INJURIES

INCIDENT

A mine worker suffered severe head injuries when struck by section of a chain and hook assembly.

CIRCUMSTANCES

The mine was using considerable pulling power from a cutting and loading machine (longwall shearer) to try and remove slack from a steel chain conveyor. Two chain and hook assemblies were being utilised to connect the shearer to the conveyor chain.

A chain and hook assembly failed at a component connector and part of it struck the mineworker.

INVESTIGATION

A detailed investigation of cause and circumstances is being conducted by the Mineral Resources Investigation Unit.

RECOMMENDATIONS

- All mines review all operations, which utilise chain assemblies for pulling or lifting equipment.
- Identify hazards, assess risks and identify controls for these operations. Give particular attention to the safe "working load limit"(WLL) for the chain assemblies and the positioning of personnel involved in these operations.
- Consider compliance with Australian Standards AS2321, 3775, 3776, and 3777 during this review.
- Identify the maximum available force when pulling or lifting.
- Identify the weakest link between the load and the force to be applied. Ensure an adequate factor of safety exists.
- Refer to the Australian Standard AS3775.1 Clause 5.7.2 which states:-
"Each end of each joining device shall not have in use more than one load -bearing component, unless specifically designed to do so by the manufacturer of the joining device".

Report No: SA 04 09

File No: 04/1351 ID No 310785000

Date: 3 June 2004

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- During assembly of chain slings, limit to one for each end of the connector, the number of load bearing items attached unless it is specifically designed for more than one load. This is to avoid side loading of the connector.
- Where necessary use an additional connector or substitute a connector capable of taking loads in multiple directions.

R Regan
ASSISTANT DIRECTOR SAFETY OPERATIONS



Photo 1: Acceptable assembly using chain connectors.



Photo 2: Avoid this chain connector assembly arrangement, because the connector is not designed for side loading.

Find Safety Alerts at: <http://www.minerals.gov.au/safety/safalert.htm>

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