

MDG 41 - Fatal Incidents from Fluid Powered Systems

Incident Information	Agent of Fatality	Events	Recommendations
26/7/2006 Australia New South Wales Coal Underground	Uncontrolled Release of Energy	While collecting samples from a pump station, he received a hydraulic fluid injection at 305 bar, striking him in the face.	Ensure training is provided to contractors, identify non-conformances of work tasks, remove and reduce risk of hydraulic fluid injection. Providing of purpose designed sampling points.
15/7/2005 Australia Victoria Non-Coal Open-Cut	Contact with Moving or Rotating Plant (Guarding/Access to Danger Zone)	Fatally injured when the fixed jaw liner of a primary crusher fell on him. He was in the crusher trying to leverage a jammed fixed jaw liner while applying hydraulic pressure at the same time. The liner was not supported and dropped off the mounts fatally injuring the maintenance contractor.	
14/11/1991 Australia New South Wales Coal Underground	Uncontrolled Release of Energy	The engineer sustained fatal injuries when a jet of hydraulic fluid, under extreme pressures, escaped the cylinder and hit him in the abdomen. The incident occurred when a support leg was being installed. The oil injection was caused by intensification.	
1955 Australia New South Wales Coal Underground	Contact with Moving or Rotating Plant (Guarding/Access to Danger Zone)	Repairs were being effected on the hydraulic system of a mobile loader when the deceased was crushed between the body and boom of the loader.	Equipment should be isolated correctly before any maintenance is performed.
1985 United Kingdom Non-Coal Open-Cut	Contact with Moving or Rotating Plant (Guarding/Access to Danger Zone)	Was crushed and killed when he entered the space between the hopper section and the rear end of the body. The hydraulic system failed and allowed the raised hopper to fall without warning.	Equipment should be isolated correctly before any maintenance is performed.
1981 United Kingdom Coal Underground	Uncontrolled Release of Energy	Had connected a standard 25mm double braided pressure hose with a safe working pressure of 206 bars to a hydraulic bolting tool. When a working pressure of 170 bar was applied the hose burst suddenly and projected a soluble oil water solution from close range, causing fluid injection internal injuries.	
1955 Australia New South Wales Coal Underground	Contact with Moving or Rotating Plant (Guarding/Access to Danger Zone)	Repairs were being effected on the hydraulic system of a mobile loader when the deceased was crushed between the body and boom of the loader	
23/3/2007 United States Non-Coal Open-Cut	Contact with Moving or Rotating Plant (Guarding/Access to Danger Zone)	Crew were adjusting cable for an aerial tram when anchorage point failed and victim was struck by the cable. This may have been due to an excess system hydraulic pressure.	Identify correct steps for maintenance projects, possible problems which may occur and ensure that staff are task trained. When using hydraulic systems, ensure that the maximum allowable pressures and the settings of the relief valves are established by a qualified individual.

12/6/2006 United States Non-Coal Open-Cut	Other	Operator was fatally injured while trying to repair a hydraulic line on a front end loader without any training or chocks to keep the boom up. It fell and crushed him against the frame.	Risk assessment for safe maintenance practices and following correct operating procedures. Also receive training to perform maintenance. Equipment was not isolated adequately.
5/5/2001 United States Non-Coal Open-Cut	Unintended Operation of Equipment	A mechanic was fatally injured performing maintenance on a front wheel of a loader. He was moving hydraulics to access wheel by extending boom to full. He then disconnected the hydraulic line allowing boom to fall and pin him against ground. Equipment was not properly isolated.	Maintenance should not be performed unless the power is isolated and the machinery components are blocked against motion. Manufacturers' service guidelines should be consulted and followed.
4/12/2000 United States Coal Underground	Uncontrolled Release of Energy	A longwall tailgate shearer operator was fatally injured when he was hit by a high pressure hydraulic line and fitting. Victim had completed a mining pass and was standing on a shield when a staple-lock fitting broke in half allowing it to swing wildly.	High pressure hoses to be guarded against uncontrolled whipping motion in event of failure. High pressure hoses to be located to minimize risk of exposure to miners. Safety chains to be used at connection points. Minimize the amount of connection points.
19/9/2000 United States Coal Open-Cut	Uncontrolled Release of Energy	A mechanic was fatally injured installing a new track to a dozer when a chain broke and hit him. Dozer was lifted by blade and ripper and idlers were suspended by overhead crane. Dozer hydraulics bled off allowing dozer to lower, causing overloading on chains. The equipment was not adequately isolated.	Suspended loads to be blocked before working below. Persons to maintain a safe clearance away from tensioned devices in event of failure. Equipment not to be used beyond design capacity. Maintenance procedures use proper equipment and accessories.
1/8/1998 United States Non-Coal Open-Cut	Uncontrolled Release of Energy	A mechanic was fatally injured performing maintenance on the hydraulic system of a front-end loader when a sudden release of hydraulic pressure caused the bucket support arm to fall, pinning him against the loader frame. The equipment was not adequately isolated.	Maintenance should not be performed unless the power is isolated and machinery components are blocked against hazardous motion.
26/4/1997 United States Non-Coal Open-Cut	Unintended Operation of Equipment	A welder was fatally injured relocating a portable welder with a loader. Travelling uphill, the hydraulic pressure dropped lowering welder to drag on ground, which stalled loader. Loader rolled backwards and victim tried to jump but was run over by loader.	
21/4/1997 United States Non-Coal Open-Cut	Contact with Moving or Rotating Plant (Guarding/Access to Danger Zone)	A contractor was fatally injured repairing a loader bucket. He was working off a step ladder placed between the loader bucket and the loader frame. He apparently disconnected the hydraulic controls which allowed the pivot arm to fall and strike him. The equipment was not adequately isolated.	

<p>23/12/1995 United States Coal Underground</p>	<p>Unintended Operation of Equipment</p>	<p>A continuous miner operator was attempting to tighten a hydraulic fitting on a boom elevator jack. The miner was under the elevated boom when the boom fell, resulting in fatal crushing injuries. The boom had not been blocked against motion. The equipment was not adequately isolated.</p>	<p>Before maintenance is carried out on continuous miner be sure to correctly isolate and block machine up to eliminate the possibility of accident. Regular maintenance and inspections should be carried out on equipment prior to and during its working life.</p>
<p>9/12/1995 United States Non-Coal Open-Cut</p>	<p>Unintended Operation of Equipment</p>	<p>While operating a haul truck the victim drove the truck over the berm on an elevated waste dump. Truck overturned several times coming to rest at the bottom of 120ft slope. Upon rest, truck burst into flames from ruptured hydraulic lines and storage tank. The truck may have been out of control due to a brake failure?</p>	
<p>9/10/1995 United States Non-Coal Open-Cut</p>	<p>Unintended Operation of Equipment</p>	<p>A truck driver was fatally injured when he unhooked an empty trailer from a modified tractor. Tractor had been modified to dump from trailers absent of hydraulic systems. He was run over by a wheel of the tractor as it started to roll down a slight grade.</p>	<p>All employees are to be inducted and fully trained in their work place and with work place equipment prior to commencing work. Additions of functions not according to manufacturers' guidelines should not be performed.</p>
<p>30/6/1970 United States Coal Open-Cut</p>	<p>Gas Ignition Explosion</p>	<p>An hydraulic oil explosion from hose of a strip shovel</p>	