



**DEPARTMENT OF MINES
WESTERN AUSTRALIA**

SIGNIFICANT INCIDENT REPORT NO. 9

GOLD ROOM EXPLOSION – MOLTEN METAL BURNS

INCIDENT

An operator was badly burnt by hot metal during the direct smelting of cathode sludge. An explosion occurred when additional cathode material was being charged to the furnace by the goldroom operator. The explosion sprayed molten material injuring a second operator who was standing by the goldroom door.

CAUSE

The principal cause of the accident was adding wet cathode sludge to already molten material in the furnace crucible. This caused the explosion which snapped 4 bolts holding down the furnace lid, propelled it several feet through the air, and sprayed molten material around the gold room, initiating several small fires and injuring the operator.

The injured operator was not wearing suitable protective clothing while the goldroom operator charging the furnace was.

The gold room was equipped only with an eyewash not a safety shower.

COMMENTS AND PREVENTATIVE ACTION

1. In the direct smelting of cathodes, or the smelting of filtered residue after acid digestion of cathodes the correct written procedure must be followed. No damp material must be added to an already molten charge.
2. At least one safety shower should be installed in each goldroom and should be maintained in good working order.
3. A fire extinguisher should be installed in a goldroom.

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SAFETY AWARENESS SAVES LIVES