

Brief description

A Recent death and near hits in the industry whilst removing tramped metal such as shovel teeth from crushers identified the risks from stored energy and the potential for tramped material to suddenly fly out during the process of removing it.

This sudden release of uncontrolled energy could send a lethal projectile amongst men working close by and even penetrate bullet proof glass etc.

Working with our contractors and fitting team a bright idea emerged on controlling and managing this risk which is detailed below - this included the fabrication of a energy containment bracket in the event of a sudden release of energy.

METHOD STATEMENT FOR: Clearing stalled Primary Crusher (XG02)....Caused by lost tooth off Cat 992 bucket.

This specifically refers to the safe use of a “Thermal Lance” to release a trapped bucket tooth and the fabrication of a restraining bracket to *contain* any release of stored energy when the tooth was released, as well as involvement and co operation of all team members

NOTE!....This is a particularly hazardous task due to the potential for the release of stored energy which may result in the “tooth” being propelled with great force in any direction - refer to recent death on ‘you tube’

The following pages identify the strict procedure to be followed and include photographs of the task being safely carried out on 15th November 2012

Strict Method to be adopted:

As previously identified, this method relates specifically to the removal of a trapped bucket tooth using a “Thermal Lance”.

The removal of rock from the crusher bowl to expose the trapped tooth is covered in a separate “Method Statement”.

- 1) The measures to prevent the tipping of rock into the task area while rock is being removed **MUST** stay in place until work to remove the trapped tooth is completed.
- 2) The “Isolation (locking off) procedure to prevent the starting of the crusher while rock is being removed **MUST** stay in place until work to remove the trapped tooth is completed.
- 3) **BEFORE** starting the task the hydraulic head positioning system must be operated to lower the head and hence remove any hydraulic pressure attempting to lift the head.... After this operation the “Head adjustment power pack” must be switched off and isolated.
- 4) It is important that the “tipping box” is cleared of rock as well as practicable to remove tripping hazards and allow unobstructed movement to persons within the “tipping box”.



- 5) Only when the above is completed should any person enter the tipping block.

- 6) The first stage of the operation is to install a physical barrier over the trapped tooth to arrest any upward movement if there is a sudden release of stored energy.

- 7) This will be achieved using the Jib crane to lower a purpose designed, crescent shaped steel plate to a position over the trapped tooth. When in position the lifting chains will be left connected to the crescent plate. **Do not enter the crusher bowl to detach the chain slings.** Lower the crane “block” so it rests on the crescent plate to add additional weight.



- 8) If the position of the crescent plate allows, place the “Pecker” blade on or above the plate to provide more weight.

- 9) The lancing of the trapped tooth **MUST** be done from the tipping box and **NOT** from within the crusher bowl. This will mean that 2 lance sections will be fitted to the lance and 2 persons will be required in the tipping box, one to direct the cutting and one to support the weight of the lance. 2 persons is the **MAXIMUM** allowed in the tipping box, **ALL** others **MUST** retreat to a safe area outside the box.

- 10) The 2 persons carrying out the task **MUST** wear safety harnesses attached to fixing points on the walls of the tipping box which will prevent them falling into the crusher bowl.

- 11) Access for the lance to the trapped tooth is provided by slots in the crescent plate which also provide a guide for the control of the long lance.



Strict Method to be adopted:

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The removal of rock from the crusher bowl to expose the trapped tooth is covered in a separate “Method Statement”.

- 12) The measures to prevent the tipping of rock into the task area while rock is being removed **MUST** stay in place until work to remove the trapped tooth is completed.
- 13) The “Isolation (locking off) procedure to prevent the starting of the crusher while rock is being removed **MUST** stay in place until work to remove the trapped tooth is completed.
- 14) **BEFORE** starting the task the hydraulic head positioning system must be operated to lower the head and hence remove any hydraulic pressure attempting to lift the head... After this operation the “Head adjustment power pack” must be switched off and isolated.
- 15) It is important that the “tipping box” is cleared of rock as well as practicable to remove tripping hazards and allow unobstructed movement to persons within the “tipping box”.