SAFETY FEEDBACK NOTICE
ACCIDENT ON MUD BLENDER

DGEP / HSE	Ref: 18 - 2005	Issued: 27/09/05

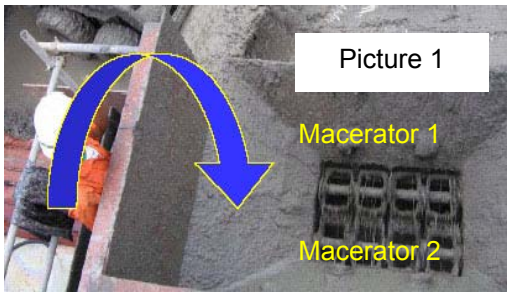
THINK SAFETY FIRST

Introduction

A man was seriously injured when cleaning a mud blender on a barge during a project of river crossing and river bank pipeline reinstatement. The accident occurred on a barge producing CSMP (Cement Stabilized Mud Paste) used for this project. This Safety Feedback Notice describes the accident circumstances and gives recommendations to prevent recurrence.

Incident description

During normal operation, the mud blender is operated by 3 operators: leader, mud blender and mud pump operators. During a night shift, the lead operator (who coordinates mud loading to the blender, mud screw elevator and mud blender) was absent, and a pipe fitter who had never worked on the mud blender took the initiative to assist the other operators. At approximately 21.40 the machine was stopped because the mixers were full and the mud blender was stuck with debris from the mud. Two persons cleaned the equipment without knowing about each others work:

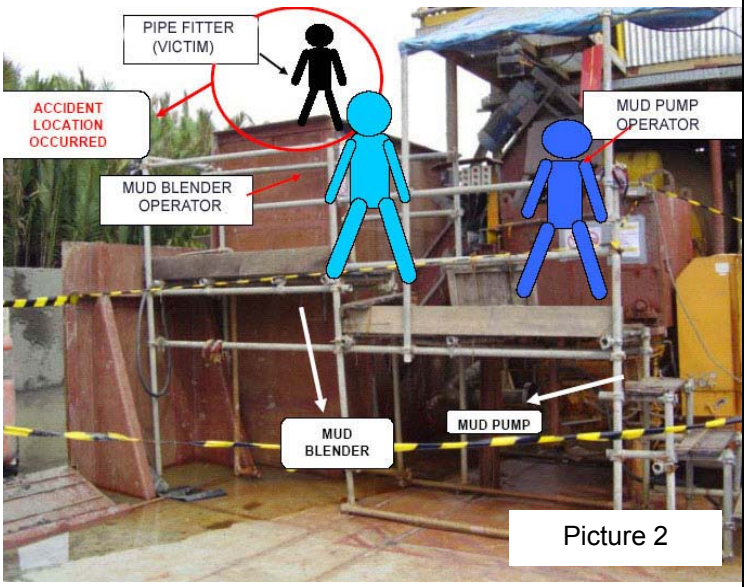


Picture 1

1. The pipe fitter cleaned the mud blender by entering the mud blender through the top of the equipment (temporary platform provided). *Picture 1.*
2. The mud pump operator cleaned the mud pump, assisted by the mud blender operator with his flashlight (the lighting on those locations was minimal, barely enough for work)

At approximately 22.45, the mud pump operator went out of mud pump while the mud blender operator went to the mud blender to provide more lighting for the pipe fitter. *Picture 2.*

Without clear instructions, the mud pump operator switched on macerator 1 of the mud blender. The pipe fitter who was standing on the mud blender between the 2 macerators was hit by macerator 1 on his face and upper body, while fortunately macerator 2 was not started.



Picture 2

The mud blender operator reacted quickly when he heard the victim shout and immediately switched off macerator 1 and asked for help to take the victim out of the blender. Medical response was also done in a prompt manner; the injured man was taken to the barge clinic and then evacuated to hospital.

Immediate causes

- Lack of risk awareness. The injured man was a pipe fitter, without any specific training for the equipment on the barge (he had only received a basic Safety Induction). He tried to assist the operators in charge. He was also in a dangerous position when he cleaned the mud blender. No one identified the hazards.

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- The cleaning procedure was not implemented. The cleaning of mud blender was through the top of mud blender, while normal procedure should be via an access door at the bottom of the blender, and only the barge safety officer who is authorized to open it.
- The access to the top of mud blender is possible. There was not risk assessment in this particular activity, thus this hazard was not detected and there were not precautions implemented.
- The operating procedure was not implemented. The machine was started by mud pump operator, while operating procedure stated that only the leader operator is authorized to start the machine.
- The isolation procedure was not implemented. There was not tag and interlock in the machine switch, as part of the requirement of isolation. Thus, the machine was possible to be started at any time.

Essential causes

- Supervision and organization of work on site was not properly prepared and controlled. The lead operator was absent but there was no substitute to supervise two other operators.

  Further consequence, coordination among workers cannot be obtained: two persons cleaned the equipment without knowing about each others work.
- Lack of safety awareness and safety culture (no assessment to the risk associated with the job, no implementation of some procedures …).

Recommendations

- The role of Supervisors to ensure their teams are working safely is critical.
- Work must be properly coordinated, to ensure conflicting tasks are identified and appropriate safety measures taken.
- Reinforce the implementation of tool box meeting, to be held as often as required, with the purpose to remind all workers about risks associated with the job, precautions to be taken, relevant procedures to be implemented and other HSE-related subjects.
- Implement the HSE training matrix for site personnel. Their competency, both in HSE and professional work to be regularly evaluated.
- Provide maintenance and repair procedures for each item of equipment and reinforce its implementation.
- Perform specific risk assessment such as Job Risk Assessment (JRA) as may be required, for the different activities on the barge. The guideline for which type of activities required JRA is described in GM HSE 010 Job Risk Assessment.
- Ensure access to moving/dangerous parts of machinery is not possible.
- Despite works on the barge being categorized as a single job (i.e. a set of interrelated tasks to be carried out by one team in one area) which is covered by a permit to work, it is recommended to reassess the necessity to issue individual Permits to Work, as may be required, for all works on the barge. Otherwise, works not requiring a Permit to Work must be referenced in a written procedure.
- Investigate the implementation of training and audit of Permit to Work and associated procedures (isolation procedure …).

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