

Worker Injured by Excavator

Target audience for this alert

Staff and Contractors involved in civil construction :

- Construction project teams
- Supervisors
- Managers



What happened

The incident happened on Wednesday, 27th March 2013 @ 16:05hrs at the Muara Tank Project Site, BSM Terminal. The project scope was to construct 2 new product storage tanks at Muara Terminal.

The IP, a 32 year old male was involved in the construction of a 1.0m high separator wall between the 2 tanks within the bunded area. A cement-filling activity was ongoing; IP's role was to operate the cement chute from a cement truck and to ensure that cement was properly poured into the excavator bucket. While the excavator to stand in a operator was filling in the separation bund wall with the concrete, the IP moved closer to the excavator to stand in a shaded area. The IP's back was to the excavator. As the excavator repositioned, it moved towards the IP and the excavator crawler track caught both of IP's legs. IP was taken to RIPAS hospital in Bandar Seri Begawan and was diagnosed as having fractured both feet and his left lower leg. IP underwent surgery.

Why it happened

The incident investigation team identified that the immediate causes of the incident were that :

- the project team did not address the tasks and associated risks (especially close man-machine interface) of using an excavator for concrete works
- There was no dedicated signalman appointed and no established communication protocol, and
- Lapse of concentration by the driver & IP

The underlying causes of the incident are :

- MOC process was not initiated to address change to construction method from crane to excavator use
- Inadequate numbers of Work Site Supervisor (WSS) at critical stage, no continuous presence of WSS
- Signalman role is not recognized and assessed as HSE critical position
- Fatigue from extensive working hours (0630hr to 2200hr). Culture of working long hours in construction industry in Brunei
- No recorded testing of project Medical Emergency Response (MER).

LEARNING FROM INCIDENTS

ACTION ALERT

HEALTH, SAFETY AND ENVIRONMENT SECTION
DEPARTMENT OF ADMINISTRATION AND FINANCE
PUBLIC WORKS DEPARTMENT

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ACTION ALERT

Actions

Following the investigation, a number of key actions were identified that can prevent recurrence of such incident :

- Apply MOC process to formalize all changes to the approved construction method statements and HIPs
- Need to improve knowledge of the hazards of moving heavy equipment and necessary mitigation measures among project teams by undertaking following recommendations :
 1. undertake a specific TBT to address risks associated with moving heavy machinery on site
 2. Incorporate heavy machinery movement risks in regular TBTs and strengthen in the site induction pack.
 3. Improve machinery / pedestrian segregation on site to avoid unauthorized access (e.g. via hard barriers)
- Ensure continuous presence of WSS if defined in the permit to work, deputy WSS MUST be formally appointed to each work site where continuous presence is required.
- Establish the role of signalman with respect to operation of mobile mechanical plant on construction site.
- Establish and enforce communication protocol between plant operator and signalman.
- Review the days and hours of work of the construction crew against the Brunei Labour Law. Ensure adequate rest is being given to / taken by the crew.
- MER drills to be conducted on a regular basis to test readiness of team and sharpen response times.

Further information

Gerry Campbell (MPM) is the lead incident investigator and Rommel Rosales (BMD) is the Contract Owner of Muara Tank Project. Both can be contacted for more incident details or more information regarding the lessons learned or actions required.

PREPARED BY : xxx