

# OVERHEAD POWERLINE INCIDENT

**Incident:** Crane boom contact with 110KV Overhead Power line

**Date of Incident:** 08/06/2015

## **Brief Account of Incident:**

On June 8, 2015 a contractor work crew consisting of a crane crew and pipeline fabricators were preparing to continue construction of a 32 inch pipeline. The activity involved utilizing a Terex all-terrain crane.

At approximately 11.15 am, the crane operator was instructed by the Banksman to reposition his crane to the southern end of a pre-strung pipeline within a designated work area identified by demarcation posts. During this repositioning activity, the crane operator moved the crane to the opposite side of the 32 inch pre-assembled pipeline outside and beyond the designated work area. During this maneuver, the crane boom tip, which was in a raised position, came into contact with a 110 KV overhead power line.

The surge of power resulted in three of the crane tyres rupturing and one of the cab side windows shattering. The ruptured tyres rendered the crane immobile. No one was injured during the incident

## **What Went Wrong (Critical Factors):**

1. No physical barriers to prevent entry into the High Voltage (HV) zone
2. The construction plan was changed without adequate change management and appropriate planning
3. Uncontrolled crane movement entering the HV zone

## **What Barriers Failed?**

- 1. Barrier management & Signage:** There were no physical ground level barriers to establish a safety zone to keep people & machinery away from the High Voltage power lines and signage demarcating the overhead high voltage hazard was missing.
- 2. Hazard communication not effective:** The hazards associated with working in proximity to overhead power lines were not fully understood or communicated between Client, Contractors and the relevant working groups including HSE, Lifting, Piping, and construction teams.
- 3. Risk assessment not effective.** Lack of task specific risk assessment. Generic risk assessments were used which did not identify all hazards, safeguards and procedural requirements related to the work activity.

**4. Self-verification and Job Oversight not effective:** There are processes in place for both contractor self-verification and Company oversight however it was not applied effectively to this work activity.

**5. Leadership:** The construction plan was changed without adequate change management & the appropriate planning. Management did not ensure scope specific readiness review prior to start of work front.

**6. Contractor Enforcement of Standards/Procedures/Practice not effective:** Overhead power line controls were included in a ground disturbance procedure which was not used by the crew as the activity did not involve excavations.

#### **Immediate Actions:**

1. Barrier off 110kv route at ground level with appropriate barriers/signage based on HSE guidance.
2. Hold stand-down to re-enforce the hazards and associated risks of power lines across the site
3. Establish a specific procedure for working in the proximity of overhead power lines or otherwise. Incorporate this procedure into the contractor self-verification plan.
4. Conduct a readiness review ahead of restart of works in corridor to be signed off by PM.

#### **Further Actions from Incident:**

1. Expand the existing process of work area zoning to cover the entire work site. For each zone identified Project (Client & Contractor) to systematically review against the project HAZID document and ensure that all safeguards relevant to the work zone are in place.
2. Project to review the self-verification and oversight process to ensure it is focused on high risk activities and applied systematically to the project activity set.
3. Project to reinforce the requirement to ensure that all activities are subject to an appropriate level of change management, systematic and comprehensive readiness review prior to commencing the work.
4. Develop an educational campaign on risks associated with working in the vicinity of overhead power lines and roll out to the Client project team, contractor and subcontractor staff.
5. Contractor to ensure point forward that the lift plan, Tool Box Talk, Risk Assessment are owned by the contractor management and signed off by all parties involved in the work activity.
6. Project to ensure that a specific risk assessment is developed for the activities working adjacent to overhead power lines.

#### **Key Learnings to Share:**

- Changes made to the construction plan require project management to ensure the appropriate level of change management and planning is applied. The appropriate readiness checks must be rigorously applied prior to the commencement of work;
- Placement of barriers to segregate people & work activities from overhead power cable hazards.

**Photos:**

Ruptured Tyres and Shattered Cab Window

