



INCIDENT ALERT

General Information

| | |
|------------------|-----------|
| Date of Incident | 20/9/2016 |
| Type of Incident | Fatality |

About the Person

| | |
|------------------------|------------------------------|
| Occupation of Person | HPWJ Drain Cleaning operator |
| Experience of Person | Unknown |
| HPWJ Training Level | Unknown |
| Other Training | Unknown |
| No. of Hours Completed | Unknown |

About the Incident

| | |
|----------------------------|--|
| Time of incident | |
| Result of Injury/Damage | Fatality |
| Lost Days | |
| Description of Incident | Drain cleaning operator was struck on the head by a drain cleaning pressure hose that had failed at a joint coupling. |
| What Equipment Category | Drain Cleaner |
| Equipment Used | The drain cleaning system comprised drain cleaner fitted with a hydraulic hose reel, pressure hoses and a nozzle |
| What Was Person Doing | A service provider was engaged in drain cleaning/vacuum work using high pressured water at a yard in Suva, Fiji. |
| What happened unexpectedly | At the time of the incident the HPWJ system was pressurised to around 207 bar (3,000psi). The hoses were an orange hose which was rated at 173bar (2,500psi) and a blue hose which was rated at 207bar (3,000psi). The orange hose failed at the ferrule joint of the hose coupling. The hose failed as it was being reeled in (under pressure and tension) due to the pressure and load exerted. The remaining hose and connectors (still attached to that end of the hose) whipped back striking the operator on the right side of his head while he was standing at the controls by the truck hose reel. The hose assemblies had been repaired some eight days earlier but had not pressure tested to any standard. There were four joints on the two pressure hoses. |

Corrective Action

| | |
|-----------------------|---|
| What Immediate Action | The Operator was taken to hospital, but never recovered. The job was stopped and an investigation began immediately. |
| Causal Factors: | <ul style="list-style-type: none"> • Use of a hose rated under the maximum operating pressure; • Connector joints (ferrules) not tested or certified after repair; • Damaged pressure relief gauge; • No operator protection from hose burst line of fire; • Lack of formal SOP • Lack of operator training; • No hard hat worn and/or protection from 'line of fire'. |

Preventative Action

| | |
|--------------|--|
| Elimination | |
| Substitution | Retraction of the hose under pressure should be done via a remote control that allows the operator to be removed from the direct line of the activity. |

| | |
|------------------------------|--|
| Isolation or barriers | Where operation of the reel retraction system is manual and adjacent to the reel, adequate protection devices such as exclusion zones, guarding must be stipulated in the JSEA or SWMS for the activity; |
| Engineering | For all underground water jetting there shall be one long continuous length of pressure hose (generally around 100 metres) and a much shorter sacrificial leader hose around 3 metres that is connected to the nozzle, because whip socks are not practicable in this situation. |
| Administration | Suppliers and subcontractors demonstrate their compliance with AS/NZ 4233 prior to engagement. Where on pre-inspection a hose has joins other than to the leader hose the equipment is to be removed from site until a new hose can be fitted, or further controls are implemented such as exclusion zones that are greater than the exposed length of hose. For work using pressurised hoses in all other applications, hose joints and connections must be controlled with whip socks. |
| PPE | PPE suitable for the job is to be worn, E.G Safety helmet. |

LEARNINGS

- High pressure water jetting systems are reviewed so that pressure management and hose and joint integrity is in accordance with the company Hose Restraint Standard, AS/NZS 4233.1 High pressure water jetting systems Part 1: Safe operation and maintenance and AS/NZS 4233.2 High pressure water jetting systems Part 2: Construction and performance;
- High pressure hose joints on or above ground are to have hose restraints attached, rated to a higher pressure than the hose and fitted in accordance with AS/NZ Standards;
- Emergency relief valves and pressure gauges are operational and conform to AS/NZ Standards;
- Hose ends and ferrules are matched in pressure, form and function and in accordance with the hose supplier's specification;
- Hose assemblies have been pressure tested to AS/NZ Standards and are rated to or above the operating pressure;
- HPWJ units are fitted with a pressure relief valve (PRV) that is set 10% above the working pressure;
- High pressure water jetting activities have a JSEA or SWMS produced detailing safe operating methods, inclusive of the above points and suitable operator protection.

