



# MONTHLY ELECTRICAL INCIDENTS

**ASP Manufacturing**

**December 2021**



**Date: 1/12/2021**

**Location: Building Components - Queanbeyan**

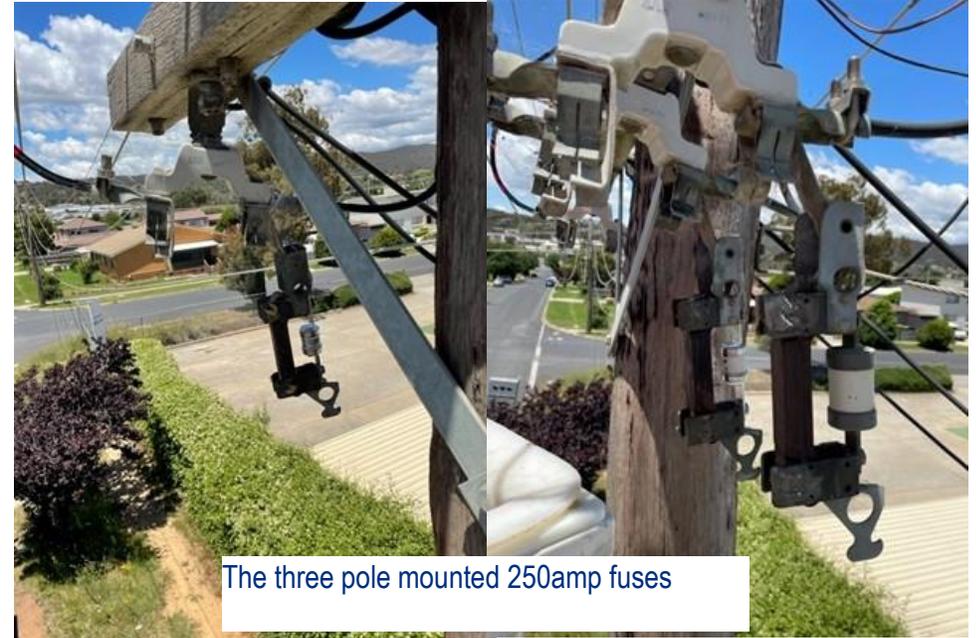
**Reference: I2027182**

Operators have noticed the main metal pole, for the electrical service to the site, to be sparking at the top of the pole and a loud bagging noise coming from within the pole. Essential Energy have attended the site and found two of the supply 250 amp fuses blown, which are mounted on the Essential Energy wooden pole adjacent. A level 2 electrician has found the four single core single insulated 120mm<sup>2</sup> cables which run down inside the pole and in underground conduit to have had insulation failure. Two of the phases have short circuited together and severely damaged the cables. During repairs the neutral-earth connection was found on top of the pole with one end of an earth cable joined to the neutral connector and the other end connected to the metal support arm. This was removed and placed correctly inside the main switchboard for the site with the pole earthed by a separate earth conductor.

As per AS3000 section 5.3.5 every installation shall have a MEN connection at the main switchboard.



The site metal service pole with the Essential Energy wooden pole behind



The three pole mounted 250amp fuses



The two damaged single insulated conductors

The neutral-earth connection found with the earth conductor joined to the neutral connection and the metal arm of the pole

**Date: 4/12/2021**

**Location: Western Port – MCL4**

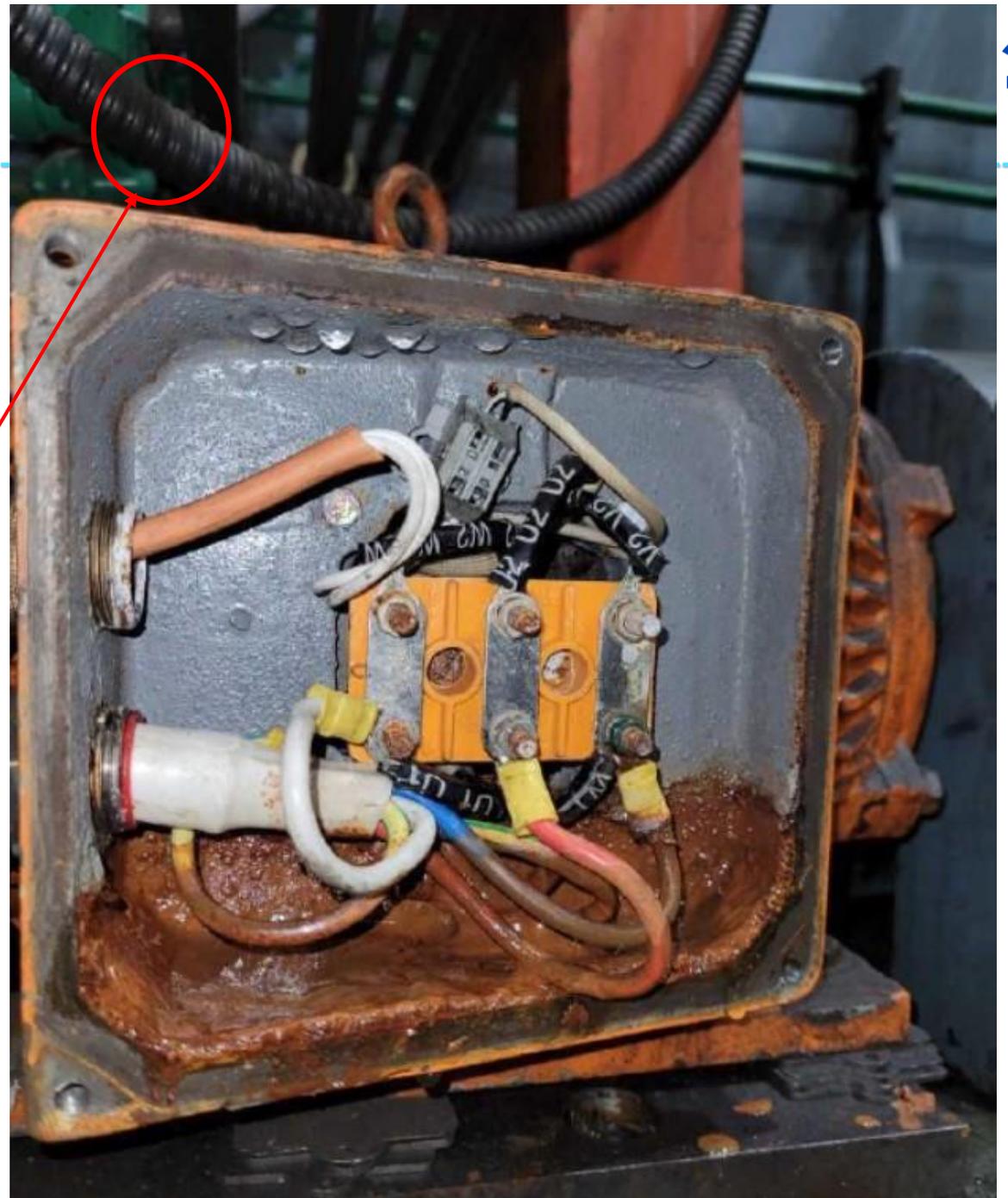
**Reference: I2027879**

An electrician doing AC motor megger checks has found the Welder traverse motor to have irregular megger readings. An inspection of the motor terminal box revealed water inside the box. The bottom of the box was heavily corroded with rust indicating the water or moisture had been there a long time. As the motor is mounted in a dry indoor area, with the cable glands and gasket of the box in good condition, the only source of the water ingress has to be through the cable flexible conduit. The fact the flexible conduit from the motor sits vertically at the cable rack end with an open end and a previous incident in 2020 where a water main had a major leak and drenched the area near the welder is the likely cause. The motor has been running normally since that time.

As per electrical installation manual section 4.5.1 cable protection such as flexible conduits should be installed correctly as to prevent water ingress.

Note the motor cable run in flexible conduit from above which possible allow water to run down into the box

The motor terminal box opened up to reveal water dripping from the top, rusted terminals, and a tide line at the bottom.



A contract supervisor has found an damaged extension lead lying in a corner of the precipitator during a shutdown with the damage not being reported. The female plug of the lead had been forcibly removed leaving the three internal cores with exposed ends. Potentially this “suicide lead” was left in a condition were an unsuspecting person could attempt to use this lead. The lead had a tag on it which did not comply with AS3760 for compliance and inspection.

All damaged electrical equipment should be reported, tagged out of services and repaired where practically possible.



The lead as found after the warning tag had been attached



A close up of the end of the lead where the female plug used to be.  
Note the exposed ends and the other damage marks on the lead

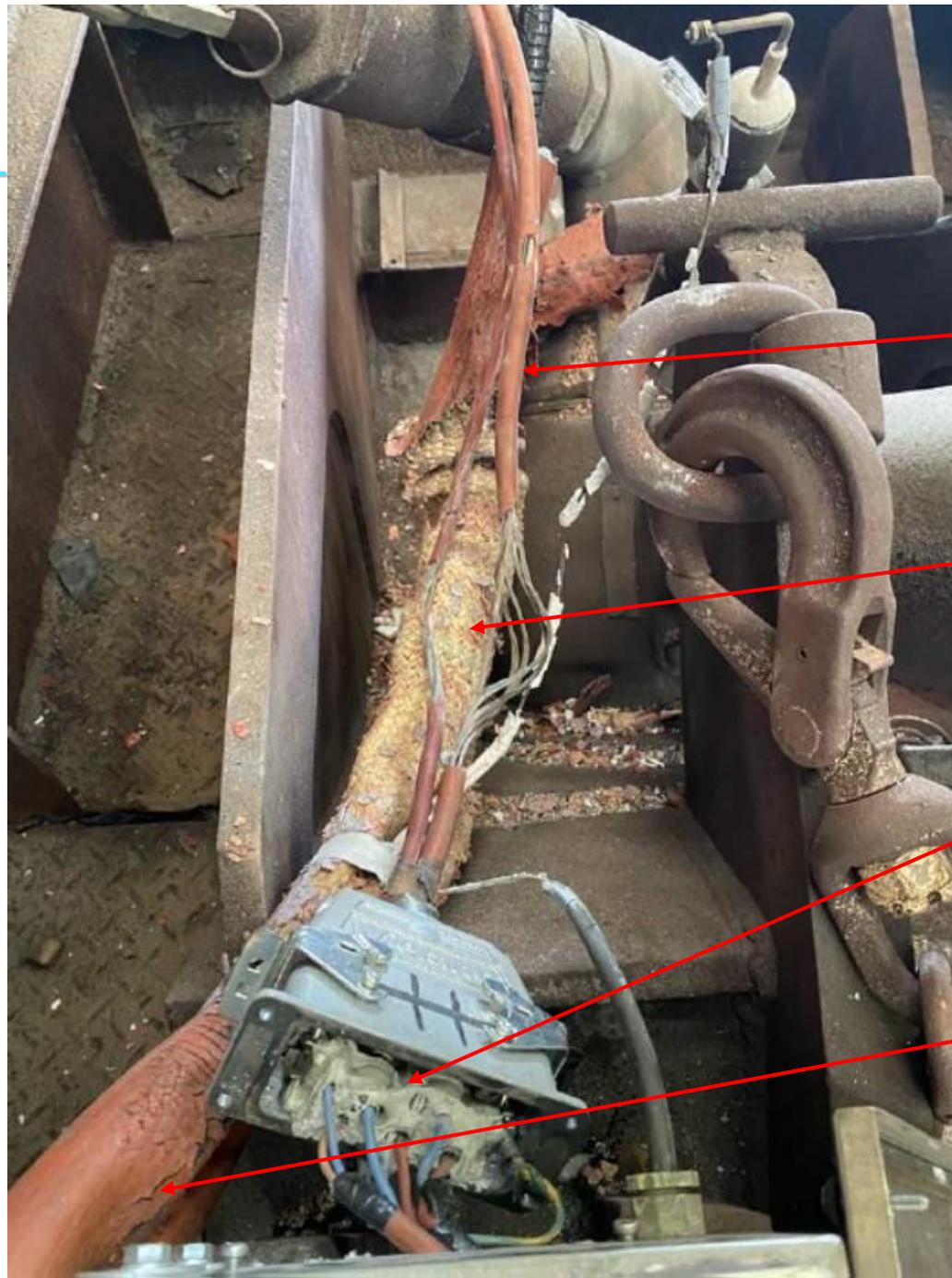


The identification tag on the lead but not an AS3760 compliance tag

**Date: 19/12/2021**  
**Location: Slabmaking Refractories**  
**Reference: I2035354**

The drying device for the tundish machines would not start due to flame failure issues. An inspection of the device found the cabling to be severely heat affected and the connecting Harting plugs all melted together. This is surprising due to all the cabling being rated to 180 degrees and insulated with high temperature heat socks due to the nature of the process. Further investigation found the three thermocouples used were all placed next to each other at the back of the tundish, rather than being placed in 3 different locations. This incorrect feedback to the drying device compromised the equipment and caused the damage.

Correctly rated and installed electrical equipment must be used as it was intended and designed.



The damaged cabling and plugs.

The 180 degree rated cabling

Where the high temperature heat socks have failed

Melted internals of the plugs

The high temperature heat socks used