



# Learning Event



## WORKING WITH ELECTRICAL EQUIPMENT

### HAZARD

Electrical  
(Low voltage)

Contact  
with Live  
Electricity

### CONSEQUENCES

Actual: No harm to persons  
Potential: This could have caused a fatality

## WHAT ARE YOU DOING TO MANAGE RISKS ASSOCIATED WITH LOW VOLTAGE ELECTRICAL EQUIPMENT THAT IS SUBJECT TO HIGH WATER EXPOSURE?

### What Happened?

A technician was confirming the position of an emergency stop switch (e-stop) on a lift pump. When the technician placed their hand on the e-stop, they experienced an electric shock. The e-stop was inspected and a 188V charge was identified. The technician was not injured.

### Why did it Happen?

Water had entered the e-stop enclosure, causing the external metal bracket to become electrified. The design of the e-stop is prone to degradation. This can lead to water ingress over time. Current specifications do not prescribe any additional protection for areas with high water exposure.

### What did they Learn?

- E-stops have been identified in high water exposure areas that are inconsistent with their Ingress Protection (IP) rating.
- Water ingress into e-stops had not been identified through failure trending and analysis. Logging information into the maintenance system allows better trending and analysis.
- The maintenance system did not correctly identify the e-stops as 'integrity critical' and 'fail to danger'. The work order to replace the e-stop received a lower priority and work had not been performed in a suitable timeframe.
- Update electrical design specifications to prescribe additional protection for e-stops in these locations with high water exposure (e.g. water shedding / shielding to prevent water pooling around IP seals).



### IOGP Life-Saving Rules

- ✓ Understand and use safety critical equipment and procedures which apply to the task



### Ask yourself or your Crew:

- Do you have emergency stop switches (e-stops) in your workplace? Are they subject to high water exposure? Have e-stops subject to high water exposure been inspected for water ingress? Do they have the correct IP rating?
- What steps would you take if a team member receives an electric shock?

### Further information:



SCAN ME

AS 60529: Degrees of Protection Provided by Enclosures (IP Code)



SCAN ME

Safe Work Australia - Electrical Safety Overview



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