SHES Bulletin 168

Issuing Manager/Department: Neil Jackson / Distribution Network Strategy
Approved Bob Watson, SHE Manager UK Distribution

FLOODLIGHT CORROSION

INCIDENT

Recently at a UK Distribution Gas operational site an explosion protected floodlight broke away from its fixings and was left hanging by its supply cable. (Notification - COMPASS Incident No 19556/07/NG)

SCOPE

This bulletin has been prepared under the governance of the Gas requirements Manual and is for UK Gas Transmission, UK Distribution, and LNG.

It is for sites that use the Chalmit 469 (or similar), LM6 marine grade aluminium explosion protected floodlights with the standard swivel mounted side bracket or the pole mounted fixings, see photograph No.1.

Photograph No. 1
Chalmit 469

Photograph No. 2
Corroded swivel mounted side bracket
(close up of bracket foot)

WHAT HAPPENED AND WHY

On inspection it was found that the aluminium supporting brackets had suffered from serious localised corrosion leading to the complete failure of the floodlight fixings, see photograph No. 2.

It is suspected that this corrosion took place as a result of dissimilar metals being used – the fixing bolts were zinc plated and the floodlight housing and bracket aluminium. This resulted in electrolytic action and significant aluminium metal loss that, over time eventually gave rise to the failure condition. These fittings are over fifteen years old and for this to take place there must also have been direct contact between the dissimilar metals, usually this is aided by an electrolyte e.g. wet salty atmospheric conditions.

ACTION

All staff who maintain electrical equipment should be made aware of this potential corrosion problem and reminded that all apparatus fixings shall be inspected in accordance with T/PM/MAINT/11.

Any fittings found with corrosion or signs of fatigue shall have their bracket replaced or the complete fitting exchanged.

These mounting brackets are available as a spare part from the manufacturer, the ordering code is: C4001-0004.

Please advise Graham Sims of any light fittings found corroded as described in this Safety Alert.

For any light fittings identified as having the potential for significant corrosion to take place in this way, then where necessary fit plastic/rubber sheeting between the mounting feet and the base metal. For the mounting bolts a protective tape should be wound round the part of the bolt that would normally come into contact with the casting. This work should only be undertaken after ensuring that earth continuity is maintained i.e. the metallic lamp post is earthed at the base and the light fitting supply cable has an internal earth.

LESSONS LEARNED

To help alleviate this type of corrosion then the use of dissimilar metals should be avoided or where necessary shielded from each.

Avoid installing products using dissimilar metals in wet atmospheres and do not site directly where pools of water may build up during wet weather conditions.

SUPPORTING INFORMATION AND TECHNICAL SUPPORT

These persons will provide technical advise if required

UKT – Steve Law
UKD – Graham Sims

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Chalmit Lighting - Victor Lighting - Transtar

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For further information regarding this Bulletin please contact your Line Manager