Construction News - Engineering

EFACEC RMUs – Transition to 22kV Fuses in 11kV units

- Essential Energy is transitioning to the use of 22kV fuses in EFACEC Fluofix Ring Main Units (RMUs), including in 11kV units across the Network
- The rear fuse tulip contacts are to be checked for damage whenever fuses are removed and if found Essential Energy staff are to raise an eMWL to replace the rear fuse tulip. If identified by an Accredited Service Provider (ASPs), contact Tyree.
- Any of the 11kV fuse extenders that are replaced are to be correctly disposed of in the metal recycling bin
- A six-months grace period will apply to ASPs to allow the use of already purchased units

Background – what happened?

There have been several bent rear fuse contact tulips found in the EFACEC RMUs used in the Tyree padmount substations. Whilst these bent tulips are not causing a serious concern now, the poor contact is resulting in partial discharge, which will lead to operational issues in the long-term. From investigations undertaken, the damage is believed to be caused from the design of the 11kV fuse extenders.

An example of the damage to the rear fuse cap can be seen pictured to the right. The worst area of damage is visible at the top of the fuse contact where the finger has been bent inwards (orange arrow). Other key signs of damage are where the fingers have been splayed outward as indicated by the orange circles.

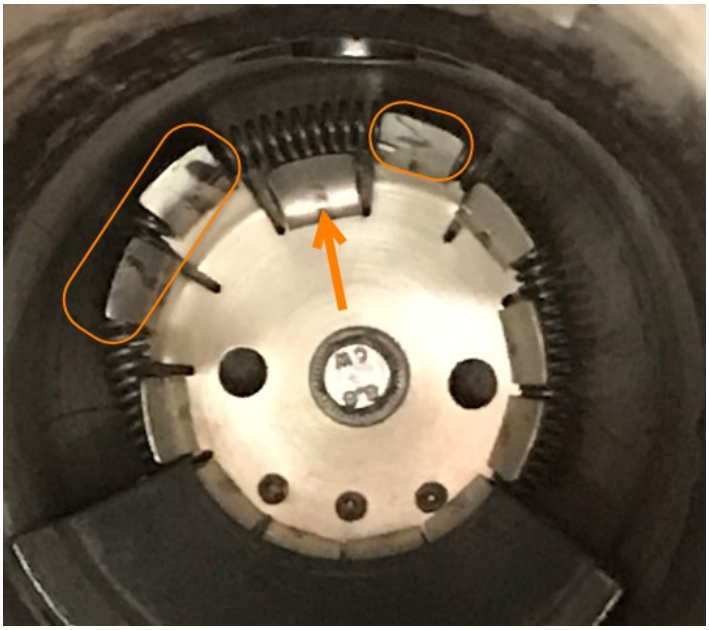

Figure 1 Bent rear fuse contact tulip in-situ

Investigations for suitable solution

A range of options to fix the problem have been investigated. These include covering the end of the fuse extenders in several ways, having the kick plate extended to a full circle, and the use of 22kV fuses.

After considering these options, Engineering has established adopting 22kV fuses and abandoning the use of fuse extenders for 11kV units to be the most suitable option.

Damage to the fuse contacts is addressed by the replacement of the bent rear fuse contact tulips when found. For existing units, this approach will continue when this type of damage is identified. As the 22kV fuses are used in more units the issue is expected to diminish over time.

What happens now?

Any new RMUs will not be supplied with fuse extenders. They will be fitted with 22kV fuses when commissioned, even if the RMU is to be used in 11kV applications.

In the case of already installed RMUs, when a fuse blows, all fuses must be replaced as per standard practice but will now be replaced with 22kV fuses even in the RMUs is part of the 11kV network.

What do you need to do?

Before inserting the new fuses, the existing contacts are to be examined for damage, if damaged is found an eMWL for the replacement of the rear fuse tulip contacts must be raised. If an ASP identifies any damage to a unit, contact Tyree to report it. Once the new 22kV fuses have been installed, all fuse extenders are to be disposed of as scrap metal.

Fault and Emergency crews that have EFACEC RMUs in 11kV networks will need to have a set of 22kV fuses on the vehicles use to investigate outages so that blown fuse sets can be changed over to 22kV fuses.

All ASPs are to be advised that they are to use 22kV fuses when installing any 11kV EFACEC RMUs. A six-months grace period will apply to ASPs to allow the use of already purchased units.

More information is available on Standards Online. If you have any questions, please contact: David Shephard, on 0407 139 698 or Wayne Johnson on 0400 186 964.