CASE STUDY

CCS Network (ME) Ltd

Sellindge — Pole 3 converter transformer bushing

SITE	CUSTOMEI	DATE OF APPLICATION
Sellindg substati Pole 3 convert	Nationa Grid	October 2010

POLLUTIO TYPE	EQUIPMEN	DURATION
Not pollutio — cascadi rain on an inclined bushing	1 inclined transfor bushing 400 kV	1 day

The challenge

Sellindge lies between the M20 and the main line. Pollution was not affecting these insulators. The inclined 400 kV transformer bushing had flashed over in heavy rain, when water cascaded down the porcelain. The arc reached the fire-deluge pipe, which was later moved. Damaged porcelain had been repaired, and a grease, believed to be silicone, had been put on the inclined face. Grease on half a bushing is not a lasting answer to rain flashover.

The solution

One day in October 2010, from a mobile elevating work platform. The grease covered about half of the inclined face and was saturated with dust and insects. It was removed, the porcelain was cleaned, and three coats of RTV silicone HVIC

were sprayed to about 500 microns. Sheeting caught the waste. The whole intervention was a single day.

The result

The coating was checked and recorded as sufficient. The inclined bushing now carries a smooth light-grey hydrophobic film of about 500 microns, so water beads and runs instead of sheeting down the porcelain as one continuous film.



Before



After

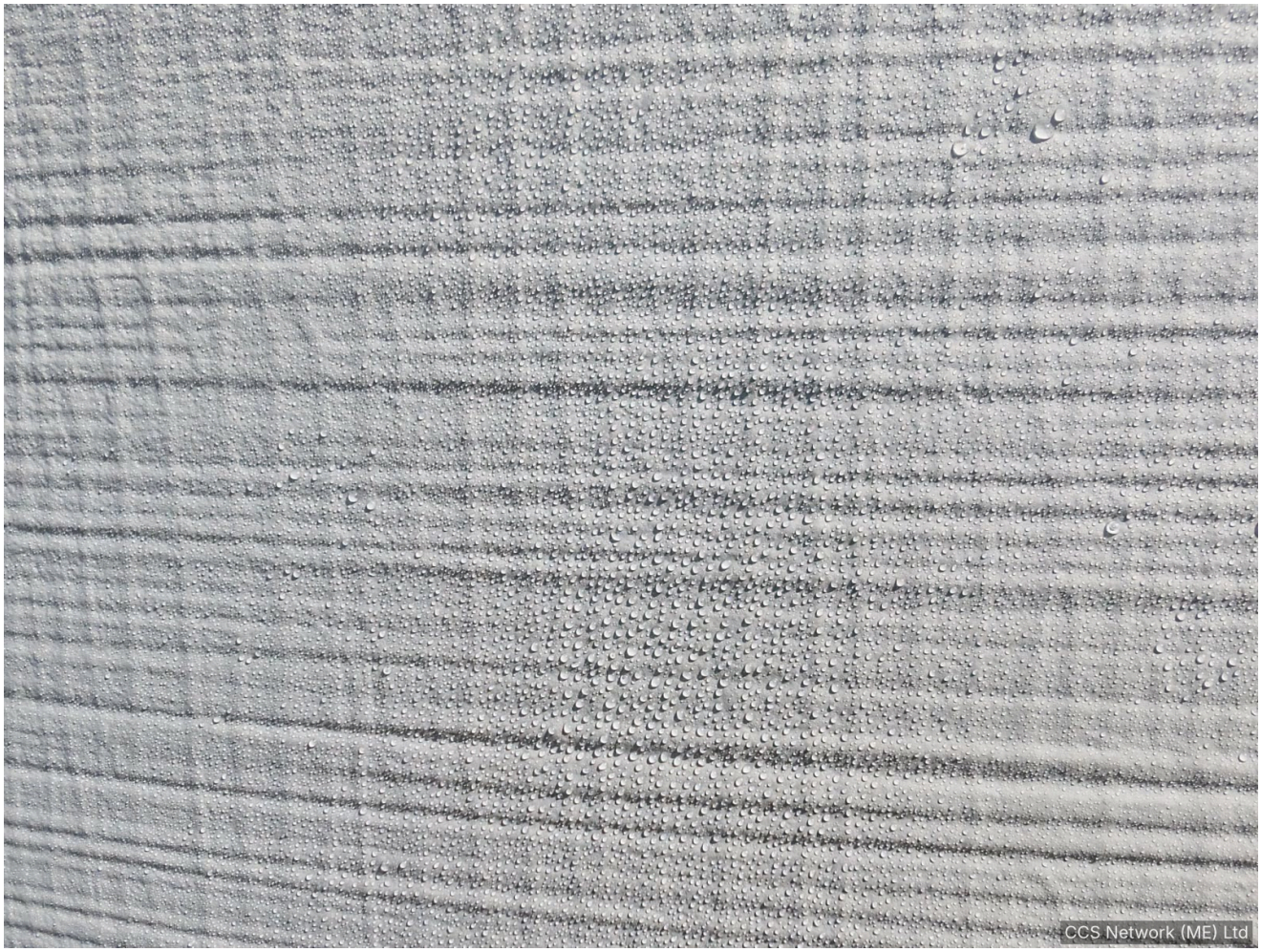
Follow-up

SURVEY DATE	EQUIPMENT	HYDROPHOBICITY
3 April 2025	12 reactor coils, 400 kV, manufacturer pre-coated	HC1 to HC2

THICKNESS
About 150 microns

On 3 April 2025 CCS inspected twelve 400 kV reactor coils at the Sellindge converter station. The coils were supplied already coated by the manufacturer, and were understood to have been installed about one to two years earlier. CCS assessed the film. CCS did not apply it. All twelve were clean and in good condition,

with no degradation, apart from a very small area of physical damage on the 11b blue-phase coil. Thickness was about 150 microns. On the weather face of each coil, hydrophobicity was HC1 to HC2: a fresh hydrophobic surface. Damage of that size can be patch-repaired with RTV silicone HVIC.



Finished coating



Finished coating

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