GEC Alstom VMX 11kV Switchboards

GEC Alstom VMX switchgear (OEM now Schneider) has been known to be prone to Partial Discharge (PD) under poor environmental conditions. At the time of this safety express issue, SPD have 9 units and SPM have 892 units installed on the network.

Four separate incidents have occurred in SPEN in recent months. On two occasions there was audible discharge and the switchgear was de-energised to allow an investigation and repairs. Two other incidents resulted in disruptive failures, where no personnel were in the vicinity at the time.

This express is a reminder that all personnel should be aware of the potential dangers that this switchgear in particular can present, when it is located in poor environmental conditions, eg dusty, damp. Exposure during switching shall be kept to a minimum where reasonably practicable (as per standard operational practice).

During prolonged work that needs to be carried out in a switchroom containing VMX (for example to replace a cable end box), then the site shall be surveyed using PD equipment in advance of undertaking any work and again at 1 hour intervals.

Signage will be affixed to all substations that contain VMX switchgear and PowerOn will be updated with TLRs, to ensure the authorised person considers the civil condition of the switch room upon entry as part of their risk assessment. Any defects found shall be reported and if required a full PD survey carried out.

Prioritised inspections are now under way to assess the switchgear condition and civils of all VMX switchboards. The captured data will be used to decide next stages of remedial action based on risk, from immediate maintenance to prioritising investment programmes.



Damaged VMX cast resin bushing owing to PD



Failed VMX moving portion

Recommendations and action points

- EATL PD equipment is available in districts to allow site PD surveys to be carried out in line with guidance as detailed in SWG-10-003.
- Additional PD Ultra-TEV instruments are currently on order, which will be deployed to Licence Programmes Compliance for use by all authorised staff. A separate communication will be issued when deliveries are received and the items are registered.
- Staff will be familiarised with the operation of PD instruments at the time of issuing.