POWER SUPPLY INFRASTRUCTURE

A nation's power supply infrastructure has to be maintained to the highest standards and Enviropeel was identified by Siemens as being a far better way of preventing water ingress in their switchgear than the system they were using.

In an electric power system, switchgear is the combination of electrical disconnect switches, fuses or circuit breakers used to control, protect and isolate electrical equipment. Switchgear is used both to de-energize equipment to allow work to be done and to clear faults downstream.

Enviropeel were asked to provide ingress protection on high voltage gas and air-insulated switchgear to prevent the escape of SF6, a greenhouse gas contained within the switchgear.

Gas-insulated switchgear (GIS) uses a pipeline-like exterior structure to contain the switchgear and insulating gas. In most cases, GIS substrates do not require corrosion protection as they are constructed from a light alloy and use stainless steel bolts. However, the structure is relatively lightweight and flange seals are vulnerable to damage resulting from water ingress between joint surfaces.

Top: access requirements can sometimes be severe

Above: a section of GIS with all flanges, hatches and other potential leak points protected with Enviropeel.

Below: Enviropeel on air-insulated switchgear

A coating was traditionally applied to the joints to protect them from water damage but it was not always able to prevent ingress and required constant maintenance.

So, after a series of successful trials, in 2011, Enviropeel started an intensive and ongoing programme of application on gas and air-insulated

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switchgear and other power transmission infrastructure around the country.

Enviropeel application personnel had to undergo considerable training to be able to work in such hazardous locations with a range of additional safety and security requirements, especially for working on nuclear sites.

Above: successfully using a large mobile platform to access the complex GIS structure requires training and experience.

Left: although most Enviropeel applications use grey material, some locations require different colours - for example, the yellow shown here on a nuclear power station.