

# Proactive PD Survey Helps Prevent Future High-Voltage Asset Failures

## The Challenge

A luxury hospitality and events venue in Abu Dhabi requires exceptionally high energy reliability to support critical infrastructure and high-profile functions. Its electrical infrastructure must meet strict operational and safety standards to support high-profile functions and ensure continuous service delivery.

Protecting the performance of high-voltage assets in demanding environments means staying ahead of potential issues. Detecting early signs of insulation degradation or environmental stress is key to preventing partial discharge (PD), reducing the risk of failure, and building long term resilience into your electrical network.

## The Solution

EA Technology conducted a benchmark PD survey of 11 high-voltage switchboards at the client's Abu Dhabi venue, supporting a broader condition-based maintenance strategy and paving the way for future 24/7 monitoring. Using the UltraTEV Plus<sup>2</sup> and Locator<sup>2</sup>, our engineers tested for transient earth voltage and ultrasonic PD activity while assessing each substation's suitability for permanent monitoring.

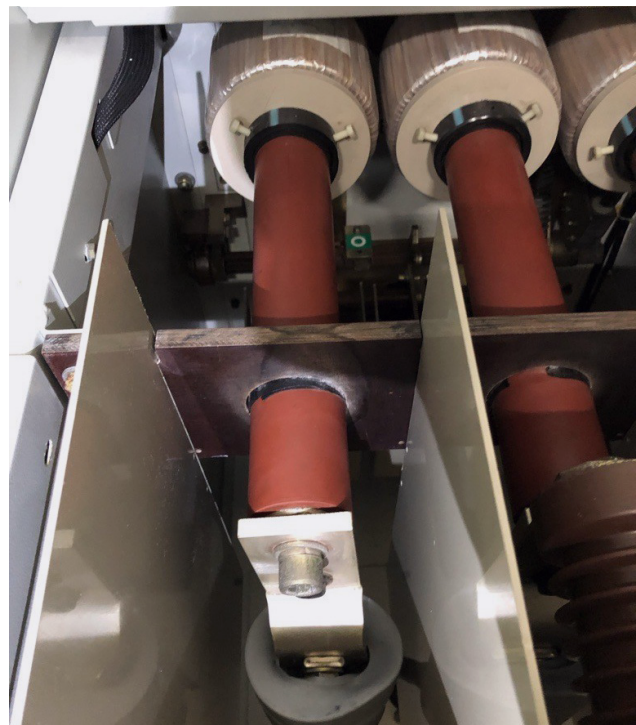
## The Results

Key findings included:

- Insulation defects were identified on critical panels across multiple substations. A surface discharge issue on one switchgear panel was confirmed via a switching exercise and resolved on-site by the manufacturer. A follow-up survey showed the problem had been successfully addressed.
- Elevated humidity levels were detected across multiple substations, with readings as high as 73% relative humidity (RH). This condition increases the risk of surface discharge and was flagged as a key environmental concern.
- High electromagnetic interference was observed around generator switchboards, potentially masking PD activity. Dual-probing techniques were used to isolate the interference source.
- All high-voltage switchboards were confirmed suitable for Astute Monitoring installation, enabling continuous tracking of insulation conditions and early fault detection.



*Aerial view of Abu Dhabi*



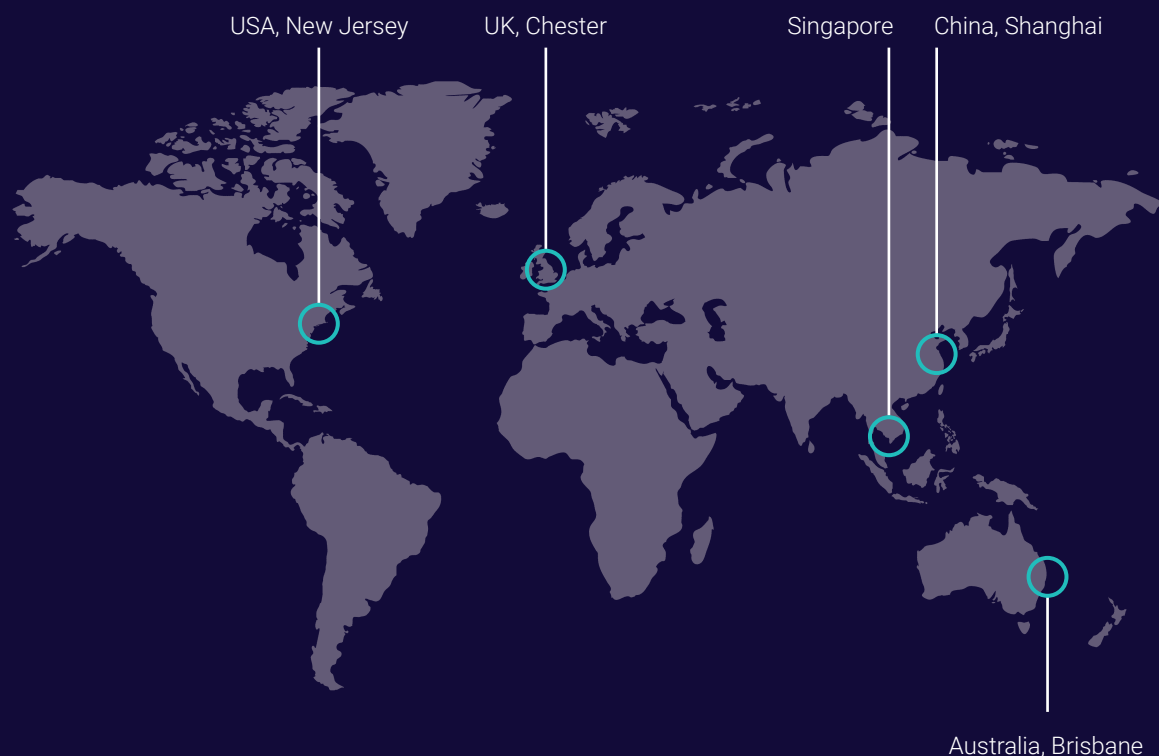
*Surface partial discharge (PD) visible as white deposits around the area where the busbar penetrates the segregation board.*

## Conclusion

The project demonstrates the value of early diagnostics and expert intervention at high-profile, mission-critical locations. By identifying developing issues and environmental risks, EA Technology supported the prevention of failure, enhanced operational resilience, and laid the groundwork for long-term condition monitoring.

# Global Footprint

EA Technology is an engineering and technology business that provides intelligent energy solutions for designers, installers, operators, and owners of power network assets.



**Founded in 1966 we have over 50 years' experience in the industry and 5 regional offices around the world to support our global customer base.**

We work with a lot of our clients on a long-term basis to help them safeguard their power networks.

We advise our clients on strategy and implementation of a range of technology solutions to manage power assets, delivering maximum life and minimise cost.

For further information and advice please contact us on  
+44 (0) 151 339 4181 or email [info@eatechnology.com](mailto:info@eatechnology.com) / [www.eatechnology.com](http://www.eatechnology.com)



**Safer, Stronger, Smarter Networks**

**EA Technology Limited**  
Capenhurst Technology Park  
Capenhurst, Chester CH1 6ES  
**PUBLIC**

**t** +44 (0) 151 339 4181  
**e** [info@eatechnology.com](mailto:info@eatechnology.com)  
**www.eatechnology.com**  
**V1 / UK / 15.07.2025**