



Adding Resilience and Engineering Efficiency via Condition Based Maintenance of High Voltage Infrastructure

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Time Based versus Condition Based Maintenance

Time Based Maintenance	Condition Based Maintenance
Maintaining assets based on age or interval alone	Maintaining assets when a problem or issue is identified
High Resource Requirement	Low Resource Requirement
Replacement of assets at end of design life	Replacement of assets when required
Remove potentially functioning assets	Remove defective assets only and maximise asset life

Example 1: London

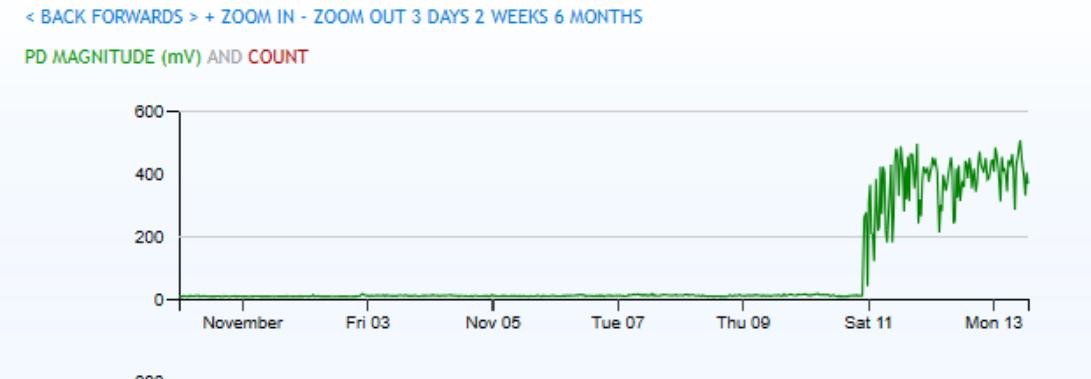
IPEC's online Monitoring system enables UK Power Networks to remotely assess the condition of thousands of Assets across the network.

Identifying defects before they lead to failure.

The system has been operating since 2006.



CHANNEL 13 CRITICALITY 100
TYPE AA ENERGY/CYCLE 0 mV
MUX 2

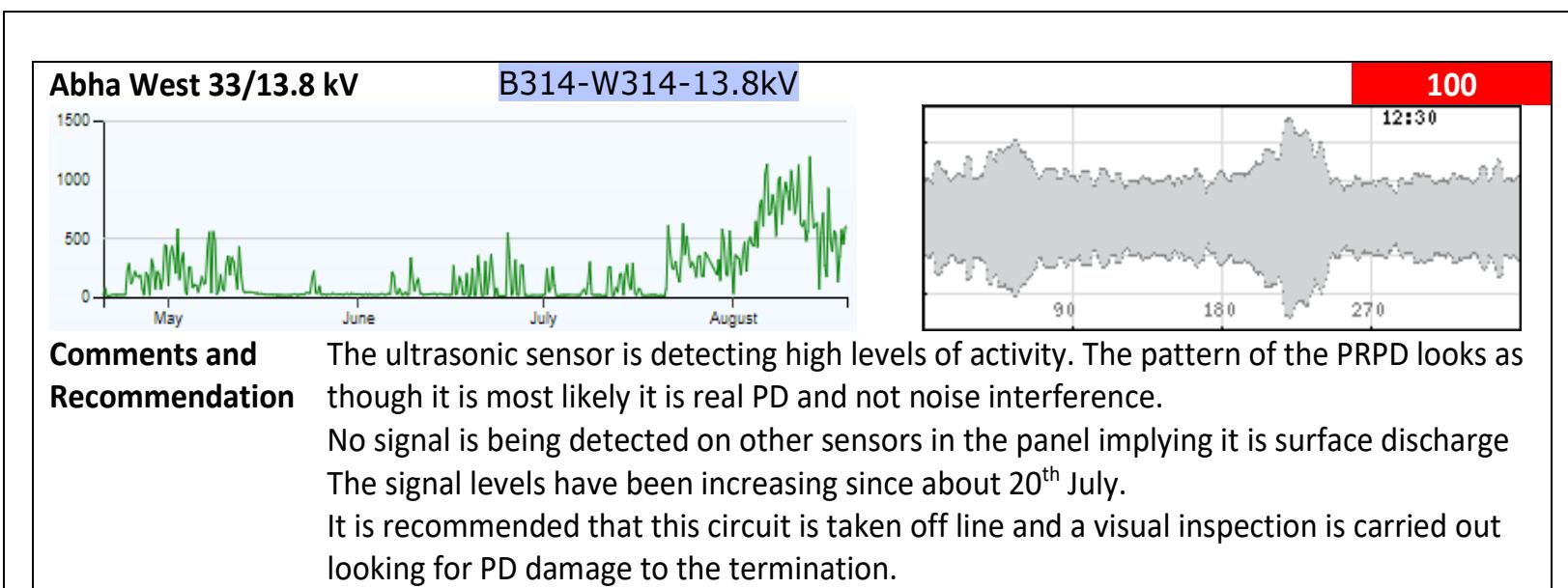
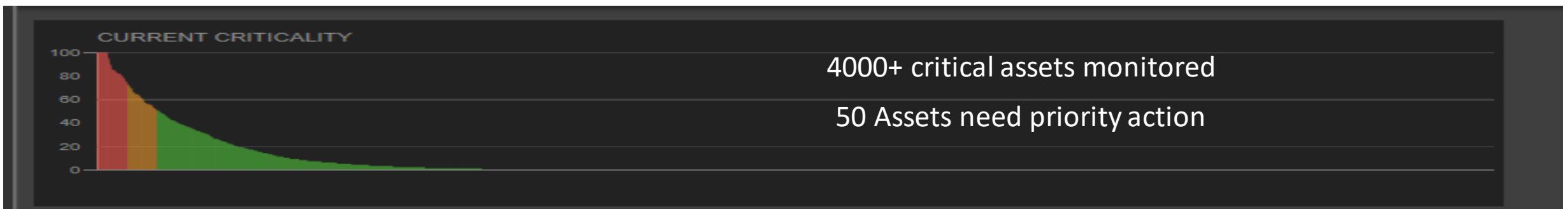


Identification of defective assets immediately before failure.

24/7 remote monitoring, Alerts and Alarms.

Example 2: Saudi Arabia

From a network of 4,000+ assets, IPEC's monitoring system identifies around 50 assets of high priority. Optimising maintenance teams and directly addressing problems before failure.



Heat
shrink
damage



Easily Deployable Now

Easy to fit Hardware Installation

Cost per substation roughly \$100k USD

Hardware installation is very simple.

Monitoring systems inside substations connect to sensors at each measurement point

4G or wifi or intranet communications

- Enhanced network visibility
- Enhanced resilience
- No modifications to infrastructure
- Efficient use of engineers
- Proven and tested



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