Electrical Power
Critical Asset Monitoring

Avoid the three main failure modes of electrical power critical assets.

Applications
Critical Assets in the 1kV - 60kV range:
- Switchgear
- Bus Ducts
- Generator Circuit Breakers
- Transformers
- Rectifier Stacks
- Capacitor Banks

Solution
IntelliSAW CAM platform offers real-time, continuous monitoring with non-invasive, wireless, passive sensors.

Asset Failure Mode
<table>
<thead>
<tr>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Connections</td>
</tr>
<tr>
<td>Insulation Degradation</td>
</tr>
<tr>
<td>Air Dielectric Breakdown</td>
</tr>
</tbody>
</table>

82% of Asset breakdown / loss are due to random failures.

Majority of currently installed critical assets are 25+ years old and beyond design life.

Nearly 20% of refinery power disruptions are the result of electrical equipment failures.

One arc flash incident could cost up to $15 million including employee health care, asset replacement, and lost production.
HOW IT WORKS

Temperature Monitoring
Wireless, passive Surface Acoustic Wave (SAW) sensors are directly mounted to critical measurement locations while antennas are mounted to the walls of the asset. RF interrogation signals between monitoring unit and sensors are used to determine the temperature.

Partial Discharge Monitoring
Ultra High Frequency (UHF) antennas acquire electromagnetic radio waves in the 50 MHz to 2 GHz range. Data is analyzed against power line frequency to determine surface discharge (corona) and internal discharge (PD) levels.

Humidity Monitoring
Rugged humidity and ambient temperature sensors mounted in asset enclosures or bus ducts are wired back to a monitoring unit.

Data Analysis & System Integration
Complex data is distilled down to trendable, actionable information. Data can be viewed locally on an HMI and transmitted to a SCADA system or historian for recording and reporting.

IntelliSAW system deployment
ROI is less than 1 year.

<table>
<thead>
<tr>
<th>INCREASE PROFITABILITY</th>
<th>INCREASE RELIABILITY</th>
<th>INCREASE SAFETY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce manual rounds / truck rolls</td>
<td>Optimize asset performance</td>
<td>Predict and prevent</td>
</tr>
<tr>
<td>Lower maintenance cost</td>
<td>Fast identification of problems</td>
<td>Improve response time</td>
</tr>
<tr>
<td>Minimize downtime</td>
<td>Proactive planning and repair</td>
<td>Monitor limited access areas</td>
</tr>
<tr>
<td>Extend life of the asset</td>
<td>Avoid catastrophic failures</td>
<td>Keep employees, facility, community, and environment safe</td>
</tr>
</tbody>
</table>

IntelliSAW Headquarters
100 Burtt Rd.
Andover, MA 01810
contact@intellisaw.com
+1.978.409.1534
www.intellisaw.com

IntelliSAW China
Suite 1542,
No.222 Hubin Road,
Luwan District Shanghai,
200021 PR China
+86.187.2152.3072

IntelliSAW LATAM
Calle 100 # 8a-55 Torre C Piso 10
Oficina 1005
Bogotá, Colombia
+57.1.646.7127/65