

Intelligent Infrastructure Monitoring

Case Study



Operational Efficiency and Effectiveness

Utility Substations | Remote Facilities

Objective

Perform more frequent inspections on aging critical infrastructure.

Challenge and Market

Due to limited resources and steady but increasing demand on utilities the challenge to maintain older and aging equipment while operating on a deficit is becoming drastically more problematic. Much of this aging critical infrastructure requires more frequent attention. In fact, the Department of Energy reports that 70% of power transformers are 25 years of age or older, 60% of circuit breakers are 30 years or older and 70% of transmission lines are 25 years or older. Simply replacing infrastructure costly and sometimes unnecessary. And waiting to make the determination to replace or leave equipment as is until the next scheduled inspection of that equipment is conducted, could result in a decision that comes too late.

How It's Done Today

To date, utilities struggle to prioritize resources such as people and capital budget to the appropriate pieces of their infrastructure, such as transformers, circuit breakers, or gauges. The inspection of critical infrastructure occurs in a reactive state: where a truck and crew is deployed, where the issue is addressed after the equipment has already failed, or where the equipment is on a planned maintenance inspection schedule. Although these options are applicable to some extent, they still do not allow for more frequent inspections to catch equipment failure before it happens. Limitations of these current approaches can lead to massive system downtime, loss of revenue, and many dissatisfied customers.

How Technology Will Address the Challenge

With Hitachi Intelligent Infrastructure Monitoring solution, you utilize the power of video data, trending, and artificial evaluations to identify past, current, and future condition of those assets, on-site. This comprehensive, end-to-end solution includes visual spectrum and thermal radiometric cameras, ruggedized PCs, edge and cloud applications, and video and data analytics, to allow remote monitoring, inspections, and in the future autonomous operation.

Solution

Hitachi Video Analytics, Hitachi Visualization Suite, Hitachi Video Management and Hitachi Smart Cameras, Thermal Cameras.

Smart Spaces and Lumada Video Insights

Benefits



Increase system uptime.



Improve customer satisfaction.



Decrease operational expenditure by addressing weak points in entry.



Decrease capital expenditure by addressing intruders before damage occurs.



Improve maintenance effectiveness and efficiency.



Identify proactive maintenance procedures for intruders.



Reduce carbon footprint by minimizing truck rolls.



Enable overall reduction in operation and maintenance expenses.



Support just-in-time materials management, and so forth.