

How do I extend the life of my audio tone teleprotection system?

The Scenario:

A large utility had several of its substations inundated with ocean water from storm surges during a hurricane. Once the water receded, the utility began building large storm walls around its stations, while also assessing other points of failure. Copper wiring throughout the substation was particularly suspect due to the corroding effects of the salt water. Pilot relaying circuits which used the copper wiring for audio tone protection signaling were of immediate concern. The utility had already developed a long-term solution but needed a fix that was both immediate and versatile.

The Solution:

A system using digital teleprotection at the local end and audio teleprotection at the remote end was ideal for a ruggedized near-term solution. The system was complicated because of the physical location of the pilot equipment (from relays at the generating site, across the street to the commu-

nications house, and out to the remote sites miles away), as well as audio tone protection boxes from different manufacturers. RFL provided a system that replaced the suspect copper wiring with a fiber optic (C37.94) digital teleprotection channel, and then converted these media signals to audio tones for transport to the remote sites. End-to-end and mid-span testing capability was also retained with a custom-built 3-terminal test panel.

The Results:

The versatile architecture of the GARD 8000 enabled the utility to replace the rusted copper wiring with fiber optic digital teleprotection. Capital expenses were minimized by replacing the equipment at only the local end. The unique system allowed the utility to perform long term station upgrades site by site, while assuring that the GARD 8000 protection circuits will operate reliably for as long as required.

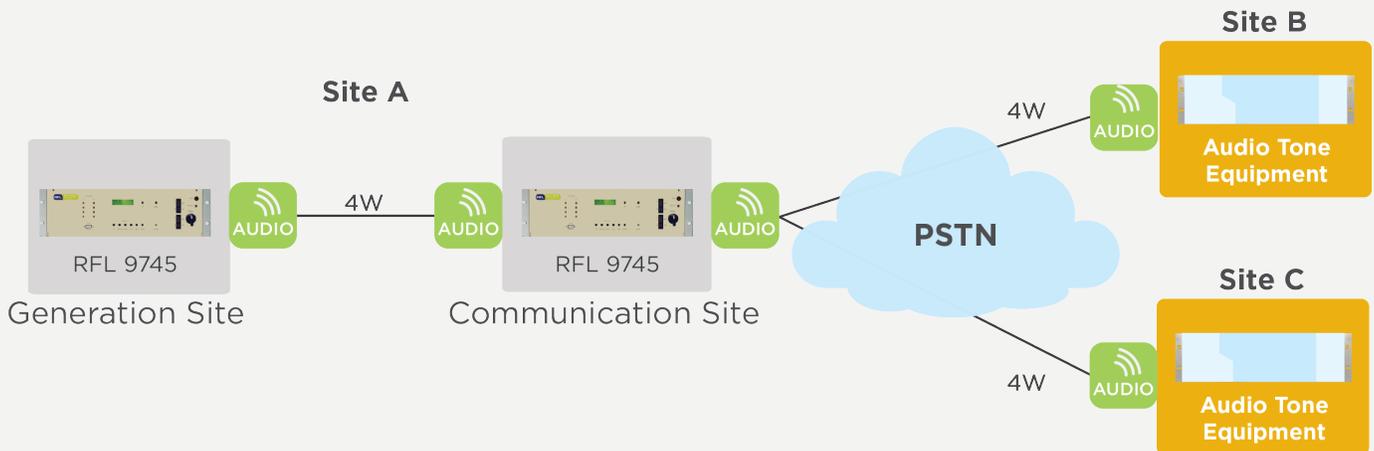


Figure 1: Original audio tone system

Because RFL and Hubbell® have a policy of continuous product improvement, we reserve the right to change designs and specifications without notice.

Related Products:



GARD 8000 PLC

The RFL GARD 8000 is a revolutionary product platform that provides the user with a fully programmable system that can be used for all teleprotection and line protection needs. The system can be programmed as an FSK power line carrier system or an ON/OFF power line carrier transmission. The unit is designed for pilot protection relaying applications, requiring high-speed reliable communications.

About RFL

RFL designs and manufactures a comprehensive line of highly-reliable, mission-critical, cost-effective communications and protection solutions for the electric utility and transportation markets, oil and gas markets, government agencies and engineering consulting firms. RFL is focused on guaranteeing mission-critical data will arrive on-time, every time.

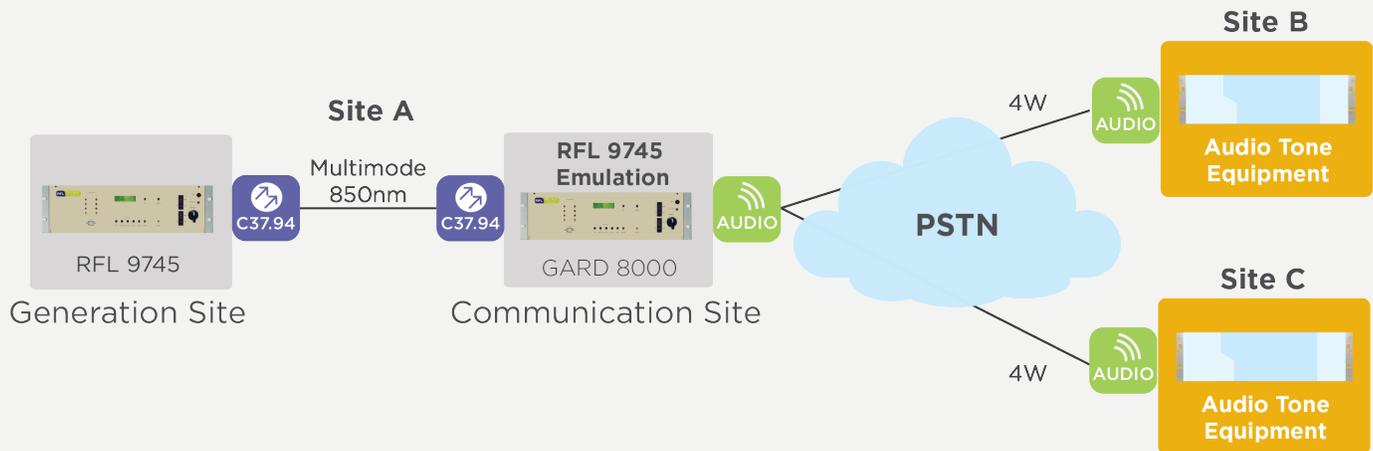


Figure 2: Updated system with fiber optic digital teleprotection



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