TC COMMUNICATIONS®

Power Utility in Central America Refines Network for Ongoing Expansion

Case Study

The Challenge:
Expanding a reliable, cost-effective network

A Power Utility in Central America operating two hydroelectric facilities was scheduled to bring a new hydroelectric facility online in just 12 short months. To make that happen, it needed to expand and upgrade its existing fiber optic communications network to accommodate all three dam sites.

The Utility was using a point-to-point fiber optic multiplexer solution that multiplexed four RS-232 channels, one telephone channel and one Ethernet channel between the two existing dam sites.

The goal was to add reliability and redundancy, while enabling the Utility to cost effectively expand the network as new services are added. Current applications included SCADA (RS-232), Telephone (FXO/FXS) and IP Video. What's more, the Utility wanted to add private network telephone service for security and reliability due to quality concerns with satellite phone service.

Solution: A Reliable, Scalable and Fully Supported Network

The Utility first looked at using standard Industrial Grade Ethernet Switches to link the three dam sites. It determined that standard switches would do the job, but would require separate converter modules for RS-232 over Ethernet and telephone over Ethernet applications. Its network planners preferred a "one box" solution over alternative solutions.

After further product evaluations – and making expandability and scalability of services top priorities – the decision was made to go with the JumboSwitch Industrial Gigabit Ethernet Modular Switch. More than just a standard Ethernet Switch, the substation hardened JumboSwitch was chosen for its ability to integrate Ethernet/IP, VoIP and TDM over IP on a single network.

Objective

- Upgrade the Utility's existing fiber optic communications network to add a new site
- Add a private network telephone service for increased security and reliability

Products Used

- JumboSwitch®

Key Benefits

- JumboSwitch expandability and scalability
- Comprehensive training via Support Program
- Enhanced system reliability
- "One box" solution

Power Utility in Central America Refines Network for Ongoing Expansion

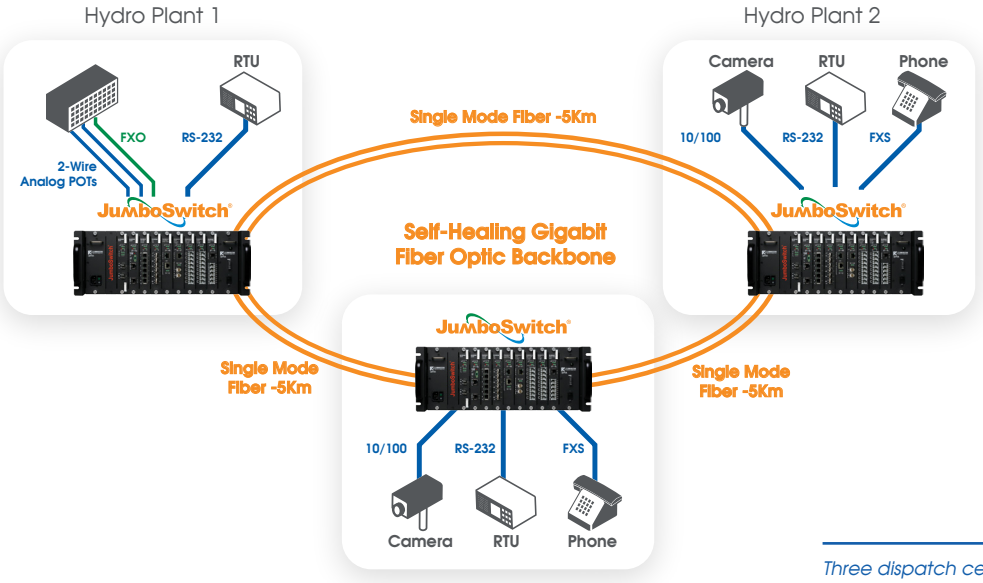
The JumboSwitch delivered a private network telephone solution, and its self-healing ring topology enhanced overall system and network reliability. The Utility also liked the JumboSwitches' hot-swappable, modular interface cards, four different chassis options and selection of 12 interfaces including several Power-Utility-specific interfaces.

Another key factor in the decision was TC Communications' "Value-Added Support Program." As part of this program, the Power Utility opted to have TC Communications commission train its technical personnel and commission the new system on site. A two-person team from TC Communications, a product trainer and a JumboSwitch Network Engineer spent three days at the dam sites conducting extensive training sessions and installing/testing the new network. The CCIE and CCNP certified TC Communication's engineer tested all inter-connecting equipment, and ensured that the JumboSwitch network complied with the Utility's system requirements and design goals.

Results:
Installation Success

To link IP cameras, RS-232 Remote Terminal Units (RTUs) and 2-wire analog telephones, the Power Utility installed three "4U" JumboSwitch units, one at each dam site (see diagram below). Units were initially configured with four interface cards: two 6-port Ethernet cards, one 4-port RS-232 card and one VoIP card. All telephones are connected to a PBX at the main Control Center at one of the dam sites.

The JumboSwitch 4U chassis has seven expansion card slots and the Utility can easily add more cards as services dictate in the future.



Three dispatch centers consolidated by telco's IP leased line

About TC Communications

TC Communications designs industry focused communications products in Power, Public Safety, Rail, Military, Aviation, and Oil & Gas. Our products assist in the evolution of legacy networks and specialize in bridging the gap in the transition to IP networks. Our mission is to design products that are easy to use and won't break. All TC products are designed, tested, and supported in Irvine, California since 1991.

Certified System
SAI GLOBAL
ISO 9001
Quality

Designed and made in
Irvine CA since 1991

17881 Cartwright Road Irvine, CA 92614 | +1-949-852-1972 | tccomm.com

LT100729 ver010324