

Project Experience

Water SCADA and Equipment Surveillance System

Design and Construction Support Services

University of California, Los Alamos National Laboratory, Los Alamos, NM

Los Alamos National Laboratory had an aging water SCADA system that provided monitoring via leased telephone line and was not capable of automatic control. The Laboratory also had a system to report alarms for important building equipment throughout the Laboratory integrated into their security system. The Laboratory wanted to replace the SCADA system and the building alarm function of the security system with a modern radio-based SCADA system.



TYPICAL RTU/RADIO INSTALLATION

Timberline's principals designed a state-of-the-art SCADA system to monitor and control the Laboratory's 49 water facilities (wells, booster stations, tanks, and control valve stations) and 74 equipment surveillance remotes monitoring equipment in 180 DOE-owned buildings. The system was designed to grow to twice the initial point count and to include waste water and gas system monitoring in the future.

The radio design considered 900 MHz MAS telemetry and UHF trunked radio telemetry. Due to regulatory requirements, the trunked radio option was chosen, and a report-by-exception technique was developed to take advantage of the integrated voice and data capabilities of the trunked system. Detailed radio propagation testing showed that radios would work well over most of the rugged canyon-mesa terrain of Los Alamos.

Timberline performed construction support services including factory acceptance testing, submittal review, and construction observation. The construction observation included a four-person team on site for several months during installation and turn-up of the system. Additional services included database programming and user training.

The project also included the design and construction support for remodeling an existing Utility Operations Center to meet the needs of both water and electric utility operations. Specific design tasks involved establishing a dedicated raised-floor computer equipment room served with conditioned, isolated ground uninterruptible power. A new five-station control console was configured to allow simultaneous operation of the water, electric, and equipment surveillance systems.

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