

THE JOHN DAY LOCK AND DAM

A Tunnel Radio case study



TUNNEL RADIO ENSURES DAM SAFETY AT JOHN DAY LOCK AND DAM

John Day Lock & Dam is located 216 miles upriver from the mouth of the Columbia River, near the city of Rufus, Oregon. Dedicated in 1968, construction of John Day Lock & Dam was authorized by Congress in 1957 for power, navigation and flood control, and completed in 1971. At the time of its completion, John Day had the highest single-lift navigation lock in the world, at 113 feet.

John Day Lock & Dam is owned and operated by the US Army Corps of Engineers (USACE) Portland District. The navigation lock is the third of eight locks on the Columbia-Snake Inland Waterway, allowing barge transport of commodities from the Pacific Ocean to Lewiston, Idaho.

The Columbia's heavy flow and large elevation drop over a short distance, 2.16 feet per mile (40.9 cm/km), give it tremendous capacity for hydroelectricity generation. The Columbia alone possesses one-third of America's hydroelectric potential; at overload capacity, the John Day Dam contributes 2,485 MW from its 16 135,000 kW units.



Sources: USACE, Columbia River System Operations, Columbia Basin Research/Washington State Univ.

USACE contracted Emagineered Solutions of Redmond, Oregon to repair damage caused by decades of deterioration in the Drainage Gallery at John Day Dam. An innovative manufacturing and construction firm with a proven record and a particular focus on Monolith Joint Waterstops employing their revolutionary CYLutions™ system, Emagineered is a recognized leader for water leakage control in gravity dams.

The condition of the internal galleries at John Day Dam raised immediate concerns for worker safety during the repairs.

With nearly 2,000 feet of galleries to traverse and a site office over a mile away, Emagineered's teams needed a fast and reliable way to stay in communication during construction. This led USACE and Emagineered Solutions to agree that an effective radio communication solution must be installed to provide 100% coverage in the galleries, and from the galleries to workers above the dam.

“The value provided by the Tunnel Radio system was priceless. We wouldn't consider doing another gallery repair without the instant and reliable communication afforded by Tunnel Radio's system. Tunnel Radio's system was essential to safe performance of our project. We were able to stay in contact with our crews deep inside the dam and relay essential messages clearly and immediately.” — Grant Waring, CEO of Emagineered Solutions



As a result, Emagineered Solutions subcontracted Tunnel Radio of America to provide our Ultracomm® digital radiating coaxial cable solution, including digital 2-way radios, antennas, duplexers, complete installation, and commissioning.

Tunnel Radio of America brings 35 years and over 1,000 underground miles of expertise to every challenge.

Our team collaborated with managers at Emagineered and USACE to ensure the Ultracomm® system design fit the requirements, and then executed the design to achieve flawless and reliable communication in the desired areas.

The system provided instant communication through over 2000 feet of galleries and to the site office, which was over a mile away.

To learn more about how Tunnel Radio can provide effective wireless systems for your projects, please visit our website at www.tunnelradio.com or contact us directly:



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