

## **Ross – Schultz Fiber Replacement**

This project will replace and upgrade of 360 miles of fiber optic cable between the Ross complex and the Franklin and Schultz substations. The project involves the upgrade of two segments of fiber optic cable. The Ross-Franklin 36 strand, *dispersion shifted* fiber optic cable will be replaced with a 72 strand, standard fiber optic cable. The Franklin-Schultz 36 strand, *standard* fiber optic cable will be replaced with a 72 strand, standard fiber optic cable.

The Ross-Franklin fiber optic cable was installed in 1995 and was one of the first fiber installations on BPA's system. At that time BPA installed 36 strand, dispersion shifted, fiber. BPA only installed one other segment of dispersion shifted fiber (between Garrison sub and Hot Springs sub). Dispersion shifted fiber is no longer used and is no longer manufactured. Because the optical characteristics of dispersion shifted fiber and standard single mode fiber are different, splicing them together creates reflections and other signal degradations. These degradations can result in a reduction of signal quality below that specified in fiber lease customer contracts and can also reduce the reliability and data capacity of the communication system.

Recent changes to communications requirements specify that BPA hold 24 strands of fiber for BPA use. There are no longer 24 strands available in the Ross-Franklin segment or in the Franklin-Schultz segment because of the quantity of fiber leased to customers. Without the upgrade, BPA would need to cancel some existing lease contracts to reclaim enough strands to meet the operational requirement.