

## FRIANT DAM WAREHOUSE LIGHTING IMPROVEMENT PROJECT WITH ADVANCED ENERGY-EFFICIENT LED LIGHTING

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Friant Dam is located on the upper San Joaquin River in the Sierra Nevada foothills of Fresno County, California, near the town of Friant. The concrete gravity dam was completed in 1942 and forms Millerton Lake. It was built by the Bureau of Reclamation under the Central Valley Project.

Since the 2009 signing of Executive Order 13514 (EO 13514), which focused on Federal leadership in environmental, energy and economic performance, the Friant Dam engineering and operations division have continued to improve the Friant Dam facilities with advanced energy conservation projects. A major effort included the remodel of the Friant Dam Operations Office with the latest energy-reduction technology and green-building design, as well as construction measures incorporated through the whole process. The goal of the Mid-Pacific Regional Energy Management Program is to exceed EO 13514 goals of reducing energy usage of 3 percent per year.

The existing 1940s Friant Dam warehouse's fluorescent and metal halide overhead lighting had a high electrical demand. The numerous outdated lighting fixtures generated high heat, which contributed greatly to a high electrical demand. Hence, a technically advanced, light-emitting diode (LED) lighting upgrade was utilized to reduce excessive electrical consumption and operate at low-heat emission. Upgrading the Friant Dam facilities' lighting to new efficient LEDs has been an on-going mission as energy management funds are available. New energy-saving products, like LEDs, offer low maintenance while offering a much longer lifespan. The original fluorescent and metal halide lights had an estimated diminishing ballast life of 15k hours, while the new LED fixtures have an estimated life of 50k hours.

The project was completed in August 2014. Various old fixtures were replaced with LED fixtures. The Friant Dam warehouse is benefitting from a great reduction in annual energy usage, resulting in a decrease of maintenance costs, while also reducing greenhouse gas emissions each year. The warehouse staff is also enjoying a boost in safety as their working conditions are now under uniform area lighting. Additionally, replacement of the original fixtures was hazardous and labor intensive due to the high-bay design of the building. Big thanks go to Darrin Williams, Friant maintenance crew, and South-Central California Area Office Energy conservation staff for delivering this cost-saving renovation!

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