

Department of Water Resources' Mission...

*To manage the water of California, in cooperation with
other agencies, to benefit the state's people and protect,
restore and enhance the natural and human environments.*

Devil Canyon Powerplant



PETE WILSON
Governor
State of California

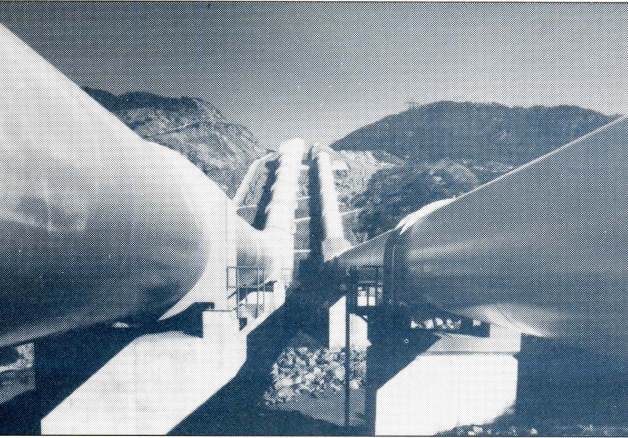
DAVID N. KENNEDY
Director
Department of Water Resources

DOUGLAS P. WHEELER
Secretary for Resources
The Resources Agency



Devil Canyon Powerplant

The Devil Canyon Powerplant is a facility of the State Water Project located on the East Branch of the California Aquaduct. Water flows to Devil Canyon Powerplant from Silverwood Lake, which is 1400 feet higher

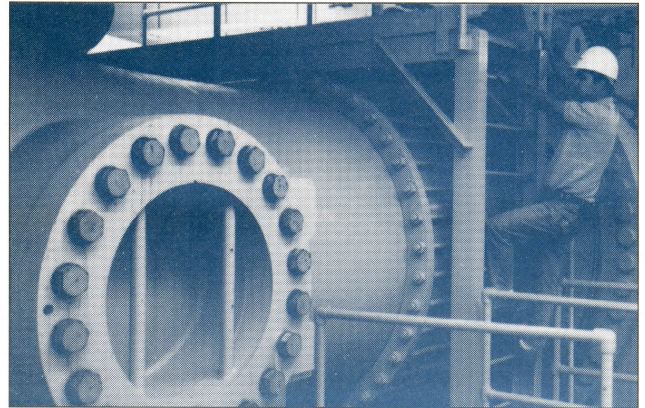


Penstocks leading to Devil Canyon Powerplant.

in elevation and five miles north. From the lake, the water passes through the four-mile San Bernardino Tunnel and two parallel penstocks, each over a mile long. The 1400-foot difference in elevation gives Devil Canyon the highest hydraulic head among the hydroelectric powerplants of the State Water Project.

The Initial Startup

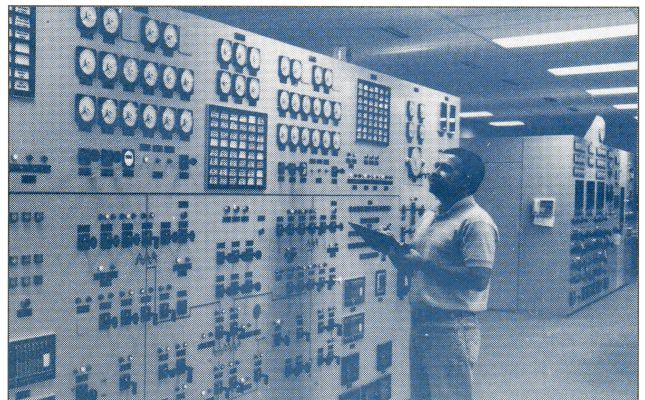
Devil Canyon went into operation in 1972 with one multiple nozzle turbine driving a 60-megawatt generator. A second 60-MW unit was installed in 1976. Between 1989 and 1991, the plant was expanded to house two more 80 MW generating units, bringing the plant's rated capacity to 280 MW, which is enough to serve a city with the combined populations of San Bernardino and Riverside.



Turbine equipment is inspected regularly.

How Power is Produced

At each unit, high pressure water jets from the penstocks impact the buckets of a Pelton wheel turbine through six nozzles. The force of the water spins the turbines, and in turn the generators, at 277 revolutions per minute to generate electricity. Electricity produced at Devil Canyon Powerplant is exchanged for electricity used by the Project or is sold to other electric utilities. The electricity sold also benefits the Project by offsetting operating costs.



A Hydroelectric Plant Operator is responsible for the plant's operation locally.



Devil Canyon's second afterbay stores 800 acre-feet of water, enough to flood 800 acres one-foot deep. The new afterbay enables the plant's four units to generate additional power during peak hours.

The Afterbay

The plant discharges water into a 49 acre-foot afterbay (a pool into which water from a hydroelectric powerplant is released) and is delivered to the Metropolitan Water District of Southern California and five other water agencies. Some water also flows south through the 27-mile Santa Ana Pipeline to Lake Perris, the 132,000 acre-foot terminal reservoir of the East Branch. Most of this water is delivered to Metropolitan. (An acre-foot is 326,000 gallons, enough to supply an average family for a year and a half).

Added Flexibility

A second afterbay with a capacity of approximately 800 acre-feet was built to provide additional flexibility needed for operating the Devil Canyon Powerplant. In early 1995, it was completed. The second afterbay is connected to the first by a 1200-foot long concrete canal. The additional capacity enables all four units to

generate more electricity during hours of peak energy consumption when the value of electricity is high, while maintaining planned water deliveries to the water contractors.

Tour Information

Tours of the Devil Canyon Powerplant can be arranged by writing to:

***California Department of
Water Resources
Southern Field Division
Post Office Box 98
North Lake Hughes Road
Castaic, California 91310-0098***

***Or call the Powerplant at
(909) 886-5028***

The hearing-impaired can call the California Relay Service (voice) at 1-800-735-2922

The State Water Project

The State Water Project is a water conveyance system that includes 23 dams and reservoirs, 20 pumping plants, four pumping-generating plants, eight hydroelectric powerplants, and more than 661 miles of canals and pipelines (including Coastal extension that is under construction). Devil Canyon Powerplant, located in the foothills five miles north of San Bernardino, is one of the hydroelectric powerplants. Together, these plants

produce electricity to operate the Project and deliver water to the San Francisco Bay area, San Joaquin Valley and Southern California.

The East Branch

Devil Canyon Powerplant is on the East Branch of the Project's 444-mile Governor Edmund G. Brown California Aqueduct. It generates power from water which the East Branch carries to homes, factories and industries in the burgeoning Inland Empire area of Southern California. The East Branch includes

133 miles of canals and pipelines, extending from an elevation of 3,200 feet in the Tehachapi Mountains to Lake Perris in Riverside County. The major facilities on this branch include the Alamo Powerplant, Pearblossom Pumping Plant, Mojave Siphon Powerplant (under construction), Silverwood Lake, San Bernardino Tunnel, Devil Canyon Powerplant, Santa Ana Pipeline, and Lake Perris.

