SHASTA POWERPLANT

Shasta Dam and Powerplant

Shasta Powerplant

Shasta Powerplant Generators

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Reclamation Region:	Mid-Pacific
NERC Region:	Western Systems Coordinating Council, California-So. Nevada Power Area
PMA Service Area:	Western Area Power Administration, Sierra Nevada Region
Project Authorization:	Funds for construction of the initial features of the Central Valley Project were provided by the Emergency Relief Appropriation Act of 1935 (49 Stat. 115). The Secretary of the Interior authorized the project and the President approved it on December 2, 1935. The Shasta and Trinity River Division was authorized by Public Law 386, 84th Congress, 1st Session, approved August 12, 1955.

Project Purposes: The Central Valley Project, one of the Nation's major water conservation developments, extends from the Cascade Range on the north to the semiarid but fertile plains along the Kern River on the south. Initial features of the project were built primarily to protect the Central Valley from crippling water shortages and menacing floods. New project units were built to provide water and power to match the continued growth of the State.

Although developed primarily for irrigation, this multiple-purpose project also provides flood control, improves Sacramento River navigation, supplies domestic and industrial water, generates electric power, conserves fish and wildlife, creates opportunities for recreation, and enhances water quality.

Plant Location: Shasta Powerplant is located on the Sacramento River in Shasta County, California, 9 miles northwest of Redding, California.

Plant Purpose: The Shasta Powerplant is a peaking plant. Its power is dedicated first to meeting the requirements of the project facilities. The remaining energy is marketed to various preference customers in northern California.

Plant Fact: The Shasta Powerplant is located just below Shasta Dam. Water from the dam is released through five 15-foot penstocks leading to the five main generating units and two station service units.

Plant History: Transmission lines were operated by Reclamation until October 1, 1977, when they were transferred to the Western Area Power Administration, Department of Energy.

Units 1 and 2 were uprated to 125 MW each in 1980. Units 3, 4, and 5 were uprated in 1968-1974.

Present Activities: Normal operations. The powerplant provides peaking power from reservoir releases.

Future Planned Activities: Units 3, 4, and 5 are pending uprating to 142 MW.

Special Issues: Downstream water temperature requirements required bypasses of outflows around the powerplant and resulted in around 2,000,000 megawatt-hours of lost generation. Installation of a temperature control device is expected to end this form of operation in most cases.

River: Sacramento River

Plant Type: Conventional

Powerhouse Type: Above Ground

Turbine Type: Francis

Original Nameplate Capacity: 379,000 kW

Installed Capacity: 539,000 kW

Year of Initial Operation: 1944

Age:	53 years
Net Generation (FY 1996):	1,457,175,904 kWh
Rated Head:	330 feet
Plant Factor (FY-1996):	30.9 percent
Remotely Operated:	Yes
Production Mode:	Peaking

☐ Fiscal Year Net Generation ☐ Monthly Net Generation ☐ Generators ☐ Workforce ☐ Wholesale Firm Rate

☐ Operation Costs ☐ Maintenance Costs ☐ O&M Costs ☐ Production Costs ☐ Availability Factor