UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
Mid-Pacific Region
Sacramento, California

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FACT SHEET

TRINITY RIVER DIVISION

CENTRAL VALLEY PROJECT

PURPOSE

The Trinity River Division is a major unit of the Central Valley Project. It is designed to provide water for irrigation, power, recreation, and fish and wildlife conservation. Surplus water from the Trinity River Basin is stored, regulated, and diverted through a system of reservoirs, dams, powerplants, tunnels, and conduits into water-deficient areas of the Central Valley Basin.

LOCATION

The Trinity River Division features are located in Trinity and Shasta Counties of California. At Lewiston Dam, the Trinity River is about 1,400 feet (430 meters (m)) higher in elevation and 20 miles (32 kilometers (km)) west of the Sacramento River at Keswick Dam.

PLAN

Trinity River water is stored in the 2,448,000-acre-foot (3 020 000 000-cubic meter (m^3)) Clair Engle Lake behind Trinity Dam. Releases from this reservoir are utilized by a 105,556-kilowatt powerplant and reregulated in Lewiston Reservoir about 7 miles (11 km) downstream. Lewiston Dam with the 350-kW Lewiston Powerplant regulates flows to meet the downstream requirements of the Trinity River Basin, including the Trinity River Fish Hatchery and downstream fishery. Water not needed in the Trinity River Basin is diverted by Lewiston Dam through the Clear Creek Tunnel to the 141 444-kW Judge Francis Carr Powerhouse and then into the 241 000 acre-foot (297 300 000 m^3) Whiskeytown Lake behind Whiskeytown Dam on Clear Creek, a tributary of the Sacramento River. From Whiskeytown Lake the Trinity River water and any surplus of Clear Creek flows through the Spring Creek Tunnel to the 150 000-kW Spring Creek Powerplant and discharges into Keswick Reservoir on the Sacramento River. The imported Trinity water supplements the Sacramento River flows for irrigation, municipal, and

industrial uses in Shasta County and for existing and future Sacramento Valley Canals. The water is also used for additional lands in the Sacramento-San Joaquin Delta and along the Delta-Mendota Canal in the San Joaquin Valley.

MAIN FEATURES

The main features of the Trinity River Division are Trinity Dam, Clair Engle Lake, Trinity Powerplant, Lewiston Dam and Reservoir, Lewiston Powerplant, Clear Creek Tunnel and Judge Francis Carr Powerhouse, Whiskeytown Dam and Lake, Spring Creek Tunnels and Rock Creek Siphon, Spring Creek Powerplant, Spring Creek Debris Dam and Reservoir, Trinity River Fish Hatchery, Irrigation Development to Cow Creek and Clear Creek South Unit and the Power Transmission System.

TRINITY DAM, CLAIR ENGLE LAKE, AND TRINITY POWERPLANT

Trinity Dam

The dam and powerplant are located about 9 miles (14 km) upstream from the town of Lewiston on the Trinity River.

Type	Zoned earthfill
Structural height	538 feet (164 m)
Lowest point in excavated foundation	El. 1,857 feet (566 m)
Height above streambed (at dam axis)	465 feet (142 m)
Crest elevation	2,395.0 feet (730 m)
Crest length	2,450 feet (747 m)
Crest width	40 feet (12 m)
Maximum base width	2,665 feet (812 m)
Volume of embankment	29,400,000 cubic yards (22 500 000 m^3)
Spillway, crest elevation	2,370 feet (722 m)
Type--Morning glory, 54-foot (16.5-m) diameter with shaft leading to 20-foot (6.1-m) diameter tunnel	
Spillway capacity	22,500 cubic feet (637 m^3 per second)
Outlet works capacity	7,200 cubic feet (204 m^3 per second)
Auxiliary outlet works capacity	2,500 cubic feet (71 m^3 per second)

Clair Engle Lake

Normal water surface elevation (gross storage capacity)	2,370 feet (722 m)
Maximum water surface elevation	2,387 feet (728 m)
Gross storage capacity at El. 2,370	2,448,000 acre-feet (3 019 600 000 m^3)
Active storage capacity	2,135,000 acre-feet (2 633 500 000 m^3)
Inactive and dead storage capacity	312,600 acre-feet (385 600 000 m^3)
Area at gross storage capacity	16,500 acres (6 680 hectares (ha))
Shoreline	145 miles (233 km)
Storage started	November 1960

Trinity Powerplant

Number of units	2; normal operating release 3,440 ft^3/s (85 m^3/s); maximum release 3,600 ft^3/s (102 m^3/s)
Each unit provided with interchangeable high-head and low-head runners	
Generator rating, each at .95 P.F.	52 778 kilowatts (kW)
Turbine ratings at 426-foot head (130 m)	85,000 horsepower (63 400 kW)
At 334-foot head (102 m)	70,000 horsepower (52 200 kW)

LEWISTON DAM, RESERVOIR, AND POWERPLANT

Lewiston Dam provides afterbay storage for reregulation of releases from Trinity Powerplant. It also serves to direct surplus Trinity River waters into Clear Creek Tunnel for transmountain diversion and to control releases for fish and other downstream requirements.

Lewiston Dam

Type	Zoned earthfill
Structural height	91 feet (28 m)
Lowest point in excavated foundation	El. 1,819.0 feet (554 m)
Height above streambed (at dam axis)	81 feet (25 m)
Crest elevation	1,910.0 feet (582 m)
Crest length	720 feet (219 m)

Crest width	25 feet (7.6 m)
Maximum base width	370 feet (113 m)
Volume of embankment	265,000 cubic yards (203 000 m^3)
Spillway, crest elevation	1,874 feet (571 m)
Type--Gated chute with two 30 x 27.5-foot (9.1 x 8.4-m radial gates	
Spillway capacity	30,000 cubic feet per second (850 m^3/s)
Outlet works capacity at water surface elevation 1,902 feet (580 m)	320 cubic feet per second (9 m^3/s)

Lewiston Reservoir

Normal water surface elevation	1,902 feet (580 m)
Maximum water surface elevation	1,902 feet (580 m)
Gross storage capacity at El. 1,902 (580 m)	14,660 acre-feet (18 100 000 m^3)
Active storage capacity	2,890 acre-feet (3 560 000 m^3)
Inactive storage capacity	11,700 acre-feet (14 400 000 m^3)
Area at gross storage capacity	750 acres (304 ha)
Shoreline	15 miles (24 km)

Lewiston Powerplant

Number of units	1
Generator rating at .8 P.F.	350 kilowatts
Turbine rating at 60-foot head (18.3 m)	525 horsepower (390 kW)

CLEAR CREEK TUNNEL AND JUDGE FRANCIS CARR POWERHOUSE

The intake structure to the Clear Creek Tunnel is located near the dam in Lewiston Reservoir on the Trinity River in Trinity County. The tunnel extends about 11 miles (18 km) southeasterly to the Judge Francis Carr Powerhouse and Whiskeytown Lake on Clear Creek in Shasta County.

Clear Creek Tunnel

Length	10.8 miles (17.4 km)
Diameter	17.5 feet (5.3 m)
Maximum flow	3,700 cubic feet per second (105 m^3/s)

Judge Francis Carr Powerhouse

Number of units	2; maximum release 3,300 ft^3/s (90 m^3/s)
Generator rating, each at .95 P.F.	70 722 kilowatts
Turbine ratings at 535-foot head (163 m)	93,500 horsepower (69 700 kW)

WHISKEYTOWN DAM AND LAKE

Whiskeytown Dam is located on Clear Creek, a tributary of the Sacramento River, approximately 10 miles (16 km) west of the city of Redding, California. The dam provides regulation for Trinity River flows discharged from the Judge Francis Carr Powerhouse and storage of water for the Clear Creek South Unit of the Central Valley Project.

Whiskeytown Dam

Type	Zoned earthfill
Structural height	281.5 feet (85.8 m)
Lowest point in excavated foundation	El. 946.5 feet (288.5 m)
Height above streambed (at dam axis)	270 feet (82 m)
Crest elevation	1,228 feet (374 m)
Crest length main dam	2,250 feet (686 m)
Crest length saddle dams (2)	1,760 feet (537 m)
Crest width	30 feet (9 m)
Maximum base width	1,492 feet (455 m)
Volume of embankment (including saddle dams)	4,535,000 cubic yards (3 467 000 m^3)
Spillway, crest elevation	1,210 feet (369 m)
Type--Morning glory, 92-foot (28-m) diameter with shaft leading to 21-foot (6.4-m) diameter tunnel	
Spillway capacity	28,780 cubic feet per second (815 m^3/s)

Whiskeytown Lake

Normal water surface elevation	1,210 feet (369 m)
Maximum water surface elevation	1,220.5 feet (372 m)
Gross storage capacity at El. 1,210 feet (369 m)	241,000 acre-feet (297 300 000 m^3)
Active storage capacity	213,600 acre-feet (263 500 000 m^3)
Inactive storage capacity at El. 1,100 feet (335 m)	27,500 acre-feet (33 900 000 m^3)
Area at gross storage capacity	3,220 acres (1,300 ha)
Shoreline	36 miles (58 km)
Storage started	May 1963

SPRING CREEK TUNNEL AND POWERPLANT

The Spring Creek Tunnel intake and gate structures are located on the east side of Whiskeytown Lake. The tunnel runs easterly 1.6 miles (2.5 km) into the Rock Creek Siphon for 0.6 miles (1.0 km), then into a second part of the tunnel 0.8 mile (1.3 km) to the Spring Creek Powerplant. The powerplant is located on the Spring Creek arm of Keswick Reservoir.

Spring Creek Tunnels

Length (two parts)	2.4 miles (3.9 km)
Diameters	18.5 feet (5.6 m) and 17.0 feet (5.2 m)

Rock Creek Siphon

Length	0.6 mile (1.0 km)
Diameter	17.0 feet (5.2 m)
Maximum flow	4,500 cubic feet per second (127 m^3/s)

Spring Creek Powerplant

Number of units	2; maximum release 4,500 ft^3/s (127 m^3/s)
Generator rating, each at .9 P.F.	75 000 kilowatts
Turbine ratings, at 544-foot head (166 m)	105,000 horsepower (78 300 kW)

SPRING CREEK DEBRIS DAM AND RESERVOIR

Spring Creek Debris Dam

The Spring Creek Debris Dam, an earthfill structure 196 feet (60 m) high, is located on Spring Creek upstream from the Spring Creek powerplant tailrace channel. It retains debris which would otherwise enter the powerplant tailrace and decrease the available power head. The dam also has important fishery benefits by controlling contaminated runoff from old mine tailings along Spring Creek. It will accumulate about 40 acre-feet (50 000 m^3) of sediment a year.

Type	Zoned earthfill
Structural height	196 feet (60 m)
Lowest point in excavated foundation	El. 620 feet (189 m)
Height above streambed (at dam axis)	190 feet (58 m)
Crest elevation	816 feet (249 m)
Crest length	1,140 feet (347 m)
Crest width	30 feet (9 m)
Maximum base width	1,065 feet (324.6 m)
Volume of embankment	1,860,000 cubic yards (1 422 000 m^3)
Spillway, crest elevation	795 feet (242 m)
Type--Ungated chute	
Spillway capacity	5,150 cubic feet per second (146 m^3/s)
Outlet works capacity at water surface El. 795.0 feet (242 m)	680 cubic feet (19 m^3) per second

Spring Creek Reservoir

Normal water surface elevation	795 feet (242 m)
Maximum water surface elevation	809.5 feet (246.7 m)
Gross storage capacity at El. 795 feet (242 m)	5,870 acre-feet (7 240 000 m^3)*
Active storage capacity	5,810 acre-feet (7 170 000 m^3)*
Inactive and dead storage capacity at El. 659.6* feet (201 m)	60* acre-feet (74 000 m^3)
Area at gross storage capacity	92 acres (37 ha)
Shoreline	2.5 miles (4 km)

*Storage capacities will vary as sediment builds up.

TRINITY RIVER FISH HATCHERY

The Trinity River is one of California's most famous fishing streams. To maintain the salmon and steelhead fisheries below Lewiston Dam, 150 cubic feet (4 m^3) per second pass Lewiston Dam from January to the end of September of each year. Releases are increased to 200 cubic feet (6 m^3) per second during the months of October and December and to 250 cubic feet (7 m^3) per second during November. The higher releases in the fall facilitate natural spawning. The Trinity River Fish Hatchery with a capacity of about 40,000,000 eggs, located immediately downstream from Lewiston Dam, compensates for upstream spawning area rendered inaccessible and unusable by the dams.

IRRIGATION DEVELOPMENT

Cow Creek Unit, located in Shasta County, serves about 6,800 acres (2,800 ha) of irrigable land east of Redding, California, with pumping diversion from the Sacramento River. The unit features consist of the Wintu Pumping Plant at 100 cubic feet (3 m^3) per second and a main conveyance pressure pipeline (Bella Vista Conduit) with branching distribution lines.

Clear Creek South Unit, located in Shasta County, furnishes irrigation water to about 4,600 acres (1,900 ha) and will eventually supply domestic service to a projected 550 acres (223 ha) of residential land southeast of Redding and west of Anderson. The unit features consist of approximately 11.7 miles (18.8 km) of 70 cubic feet (2 m^3) per second pressure conduit (Muletown Conduit) from a connection to the Whiskeytown Dam outlet pipe and with branching distribution lines to the service areas.

POWER TRANSMISSION SYSTEM

Trinity - Judge Francis Carr - 230-kV single circuit 13 miles (21

Judge Francis Carr - Keswick - 230-kV double circuit 11.2 miles (18 km)

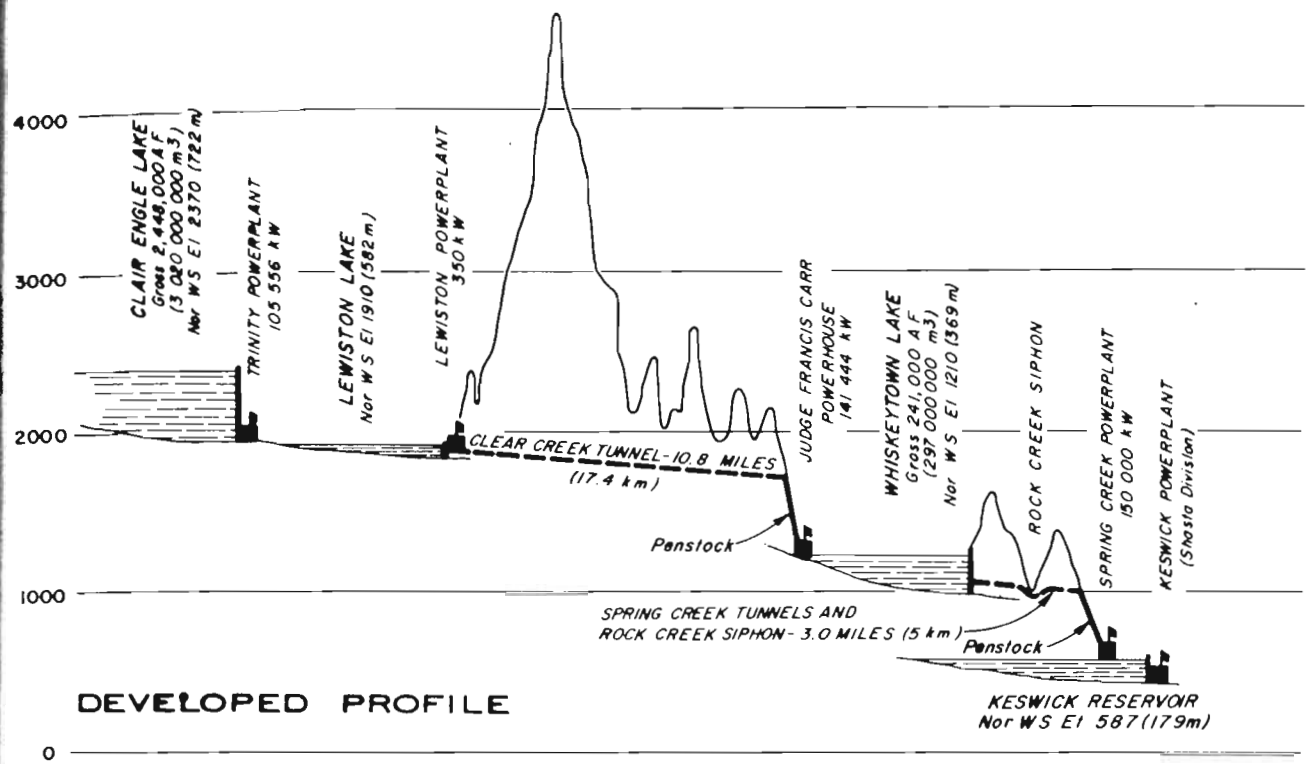
Spring Creek - Keswick - 230-kV single circuit 2.1 miles (3.4 km)

Keswick - Cottonwood - 230-kV double circuit 22.4 miles (36 km)

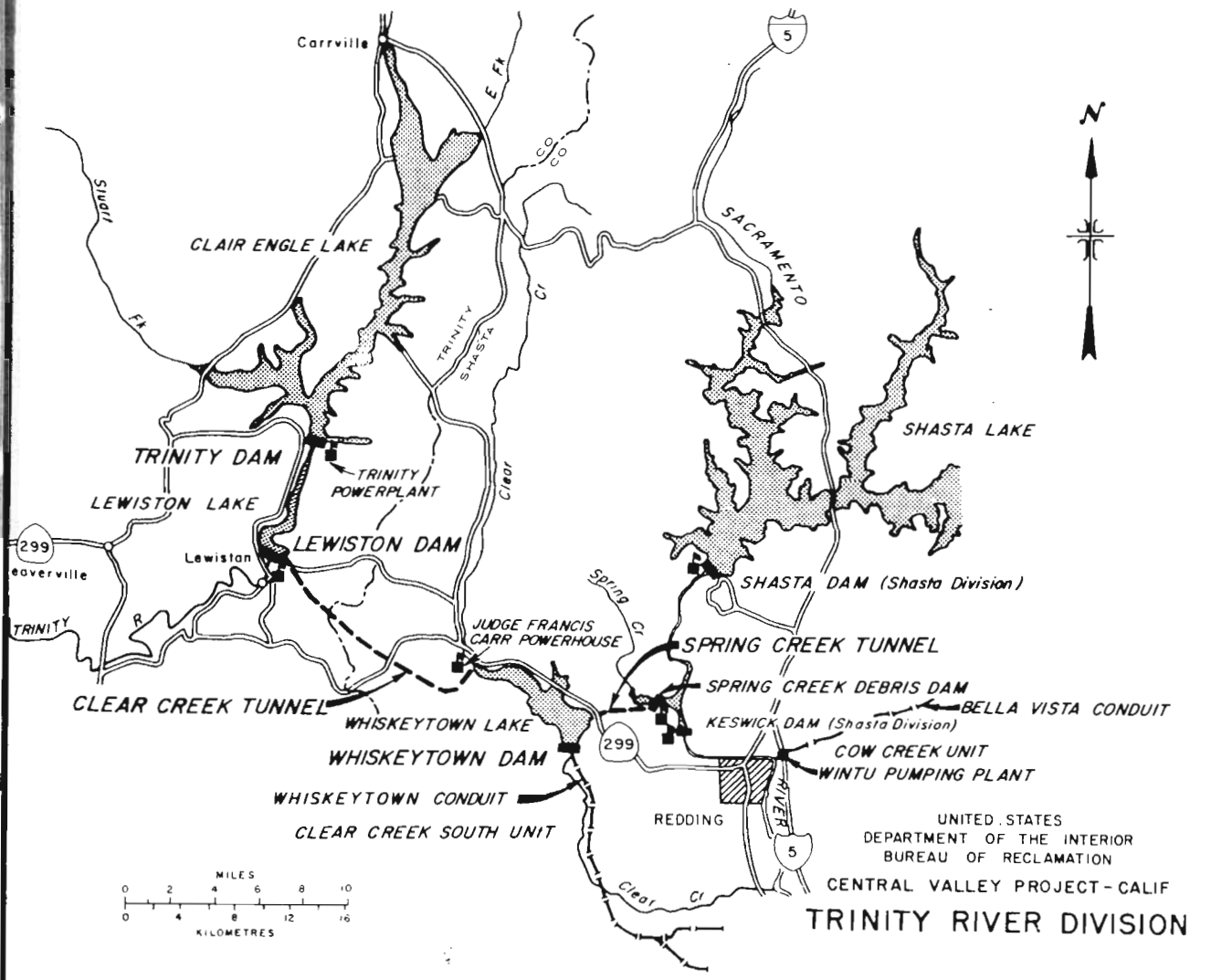
Cottonwood - Elverta - 230-kV double circuit 153.6 miles (247 km)

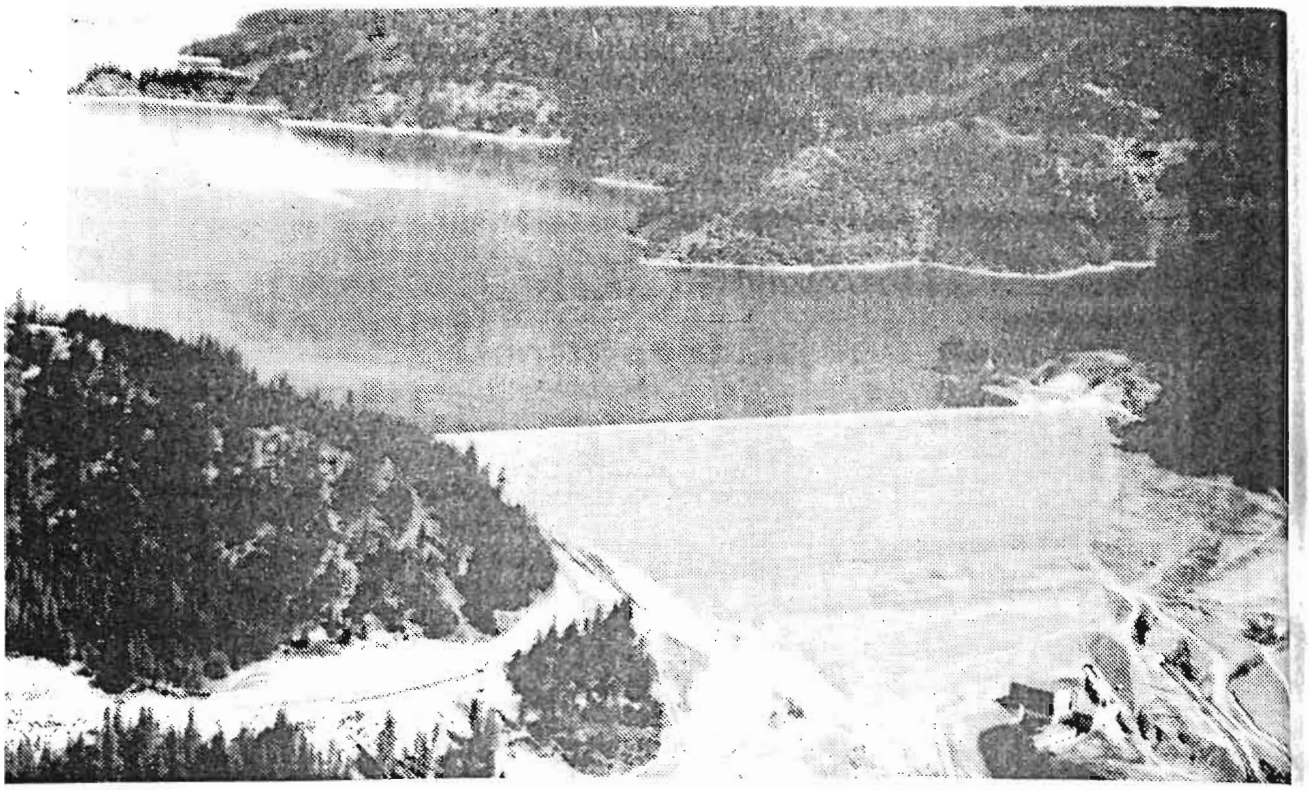
Elverta - Hurley - Tracy - 230-kV single circuit 73.0 miles (117

Additions were made to the existing switchyards at Keswick, Elverta, and Tracy to accommodate the new transmission lines.



DEVELOPED PROFILE





Aerial view upstream of Trinity Dam and its reservoir, Clair Engle Lake, [illegible] of main features of the Trinity River Division of the Central Valley Project, Cali[illegible]

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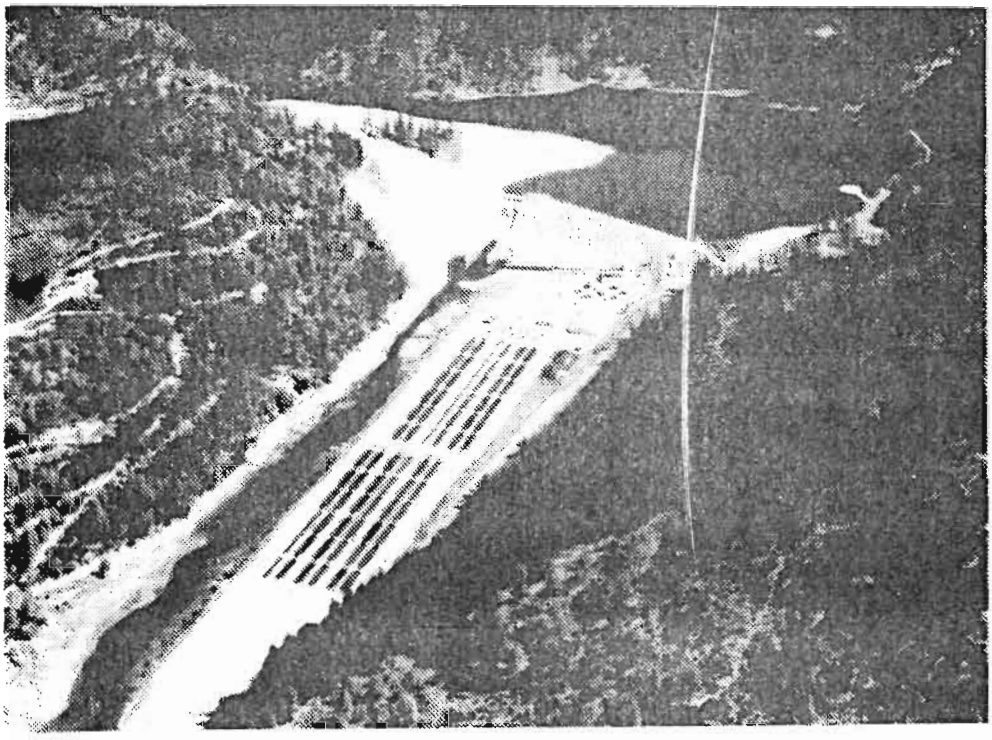

Aerial view upstream of Lewiston Dam and Reservoir. Note Trinity River Fish Hat in the foreground.

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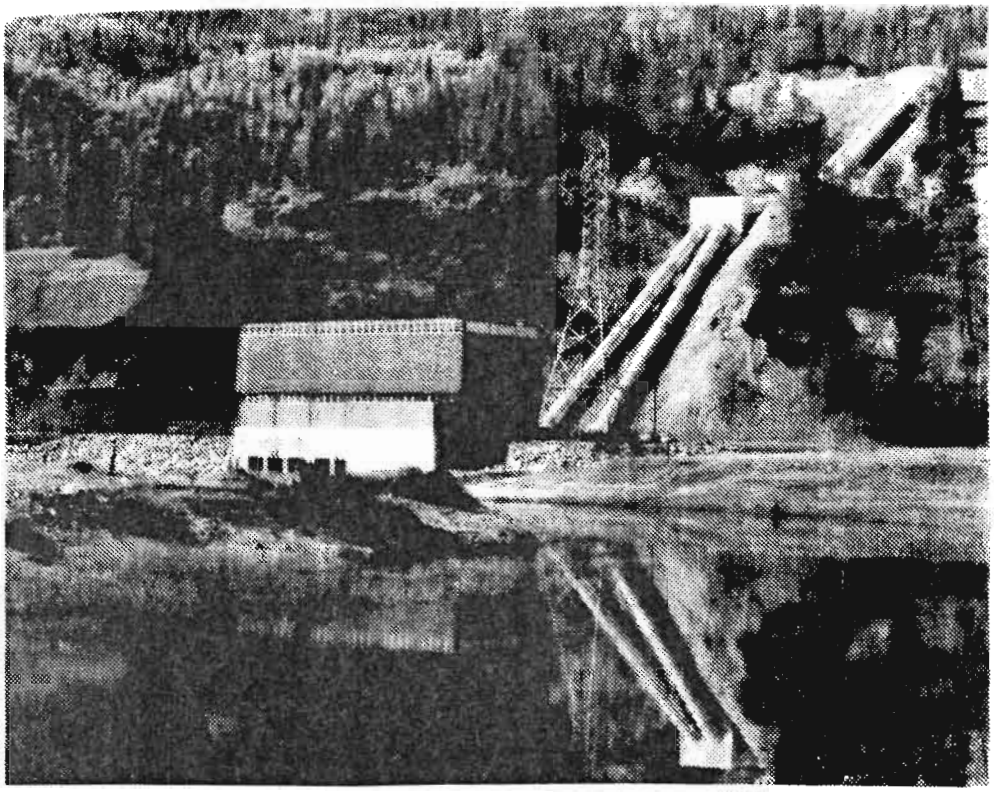
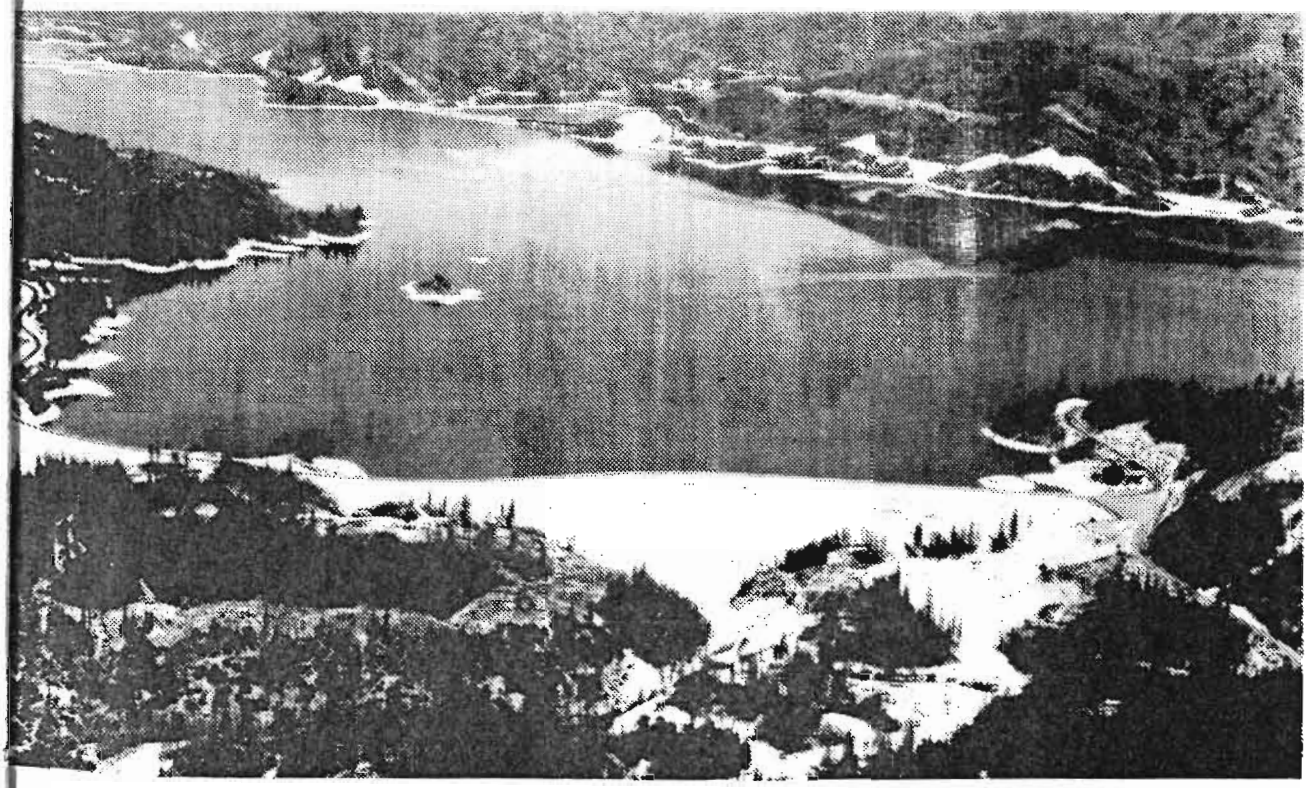


neral view of the penstocks carrying water to the Judge Francis Carr Powerhouse om the Trinity River. The body of water in the foreground is part of Whiskeytown Lake.



l view upstream of Whiskeytown Dam and Lake. Note vehicular road traversing the fill dam across the lower central area of the photograph.