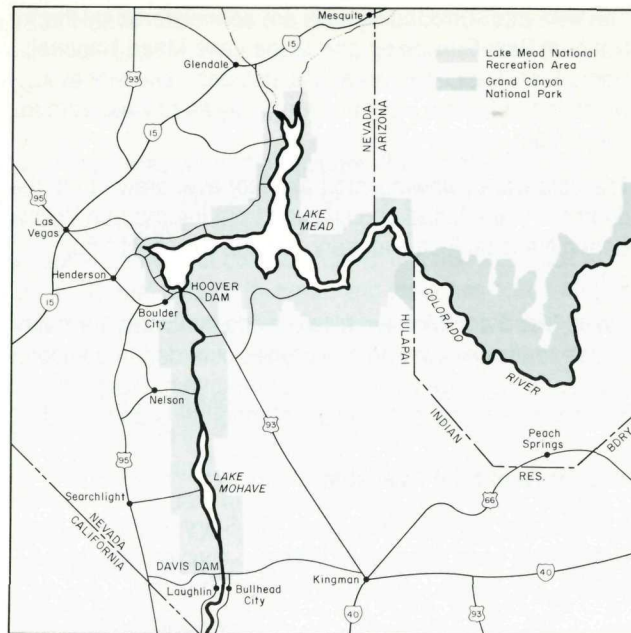
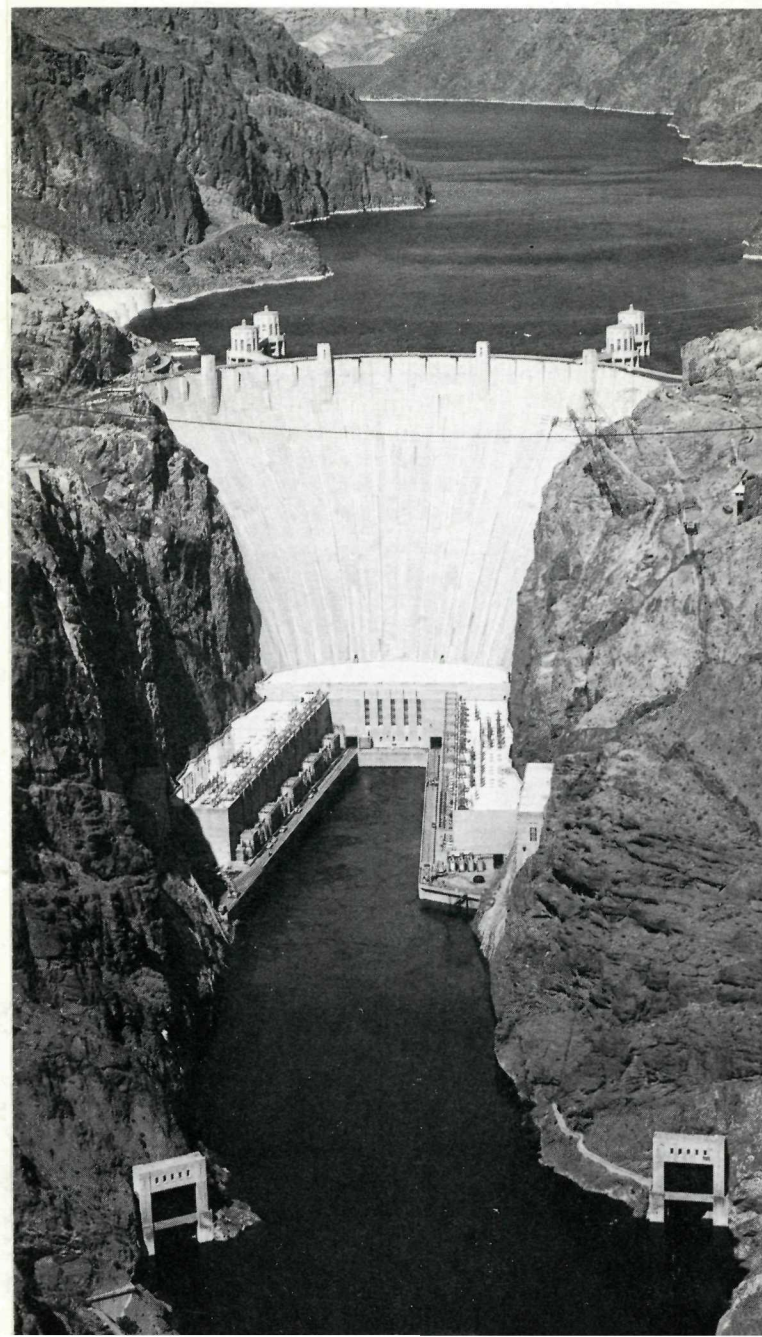


Hoover Dam

Arizona / Nevada



Physical Data

The Dam

It is 726.4 feet or 221.28 meters high
 Its crest is 1,244 feet or 379.2 meters long
 At top it is 45 feet or 13.7 meters thick
 At bottom it is 660 feet or 201.2 meters thick

It contains 3 1/4 million cubic yards or 2 1/2 million cubic meters of concrete.

The Reservoir

Lake Mead when full is 110 miles or 177 kilometers long and has an 822-mile or 1323-kilometer shoreline. Its capacity, including dead storage, is 28,537,000 acre-feet or 35,200,000,000 cubic meters.

Maximum depth 500 feet or 152 meters
 Covers 157,900 acres or 63,900 hectares

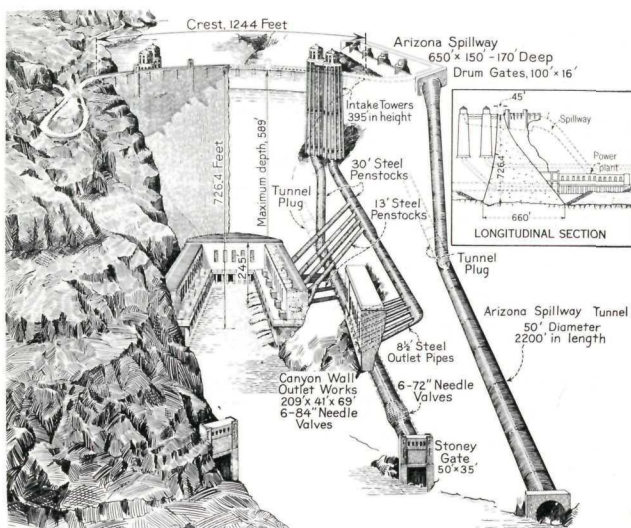
All figures are for the reservoir filled to the top of the spillway gates in the raised position — elevation 1221.4 feet or 372.28 meters.

The Powerplant

The 17 large generators are being uprated. With the completion of nine uprated units in mid 1989, the powerplant had a nameplate capacity of 1,920,000 kilowatts. The uprating program being funded by non-Federal entities is scheduled to have all 17 units complete by 1992.

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

Water is released from Lake Mead through similar sets of diversion works in both walls of Black Canyon. The water, drawn through the intake towers, flows through pipes called penstocks to the powerplants. The penstocks also can be used to discharge water directly from the reservoir to the river below the dam. The spillways were tested in 1941 and not used again until the record high flows of 1983.



History

For millions of years the Colorado River has left its mark on the land. Since the river was formed, it has been hard at work cutting great chasms such as the Grand Canyon as it carved its 1,400-mile course from Colorado's Rocky Mountains to the Gulf of California.

Early settlers along the Colorado tried to alter the river's impact on the land by diverting its waters for irrigation. But each year the Colorado, fed by melting snows in the spring and early summer, flooded low-lying lands along its route, destroying lives, crops, and property. In late summer and early fall, the river often dried to a trickle, too low to divert. Without water, crops and livestock withered and died.

The cycle of either too much or too little water limited the river's usefulness. To protect the low-lying valleys from flooding, and to assure a stable, year-round water supply, the river had to be tamed. A disastrous flood in California's Imperial Valley, which occurred when the river changed its course in 1905, provided additional incentive for its control and regulation.

The flood occurred when early spring flash floods bolstered a normally high spring runoff. These high flows washed away small earth dams which had been constructed in a temporary channel cut for the purpose of diverting water from the river to the Imperial Canal. This canal ran through Mexico on its way to the Imperial Valley. As the heavy flows deepened the channel, the river changed course and began flowing into the Imperial Valley and the Salton Sea.

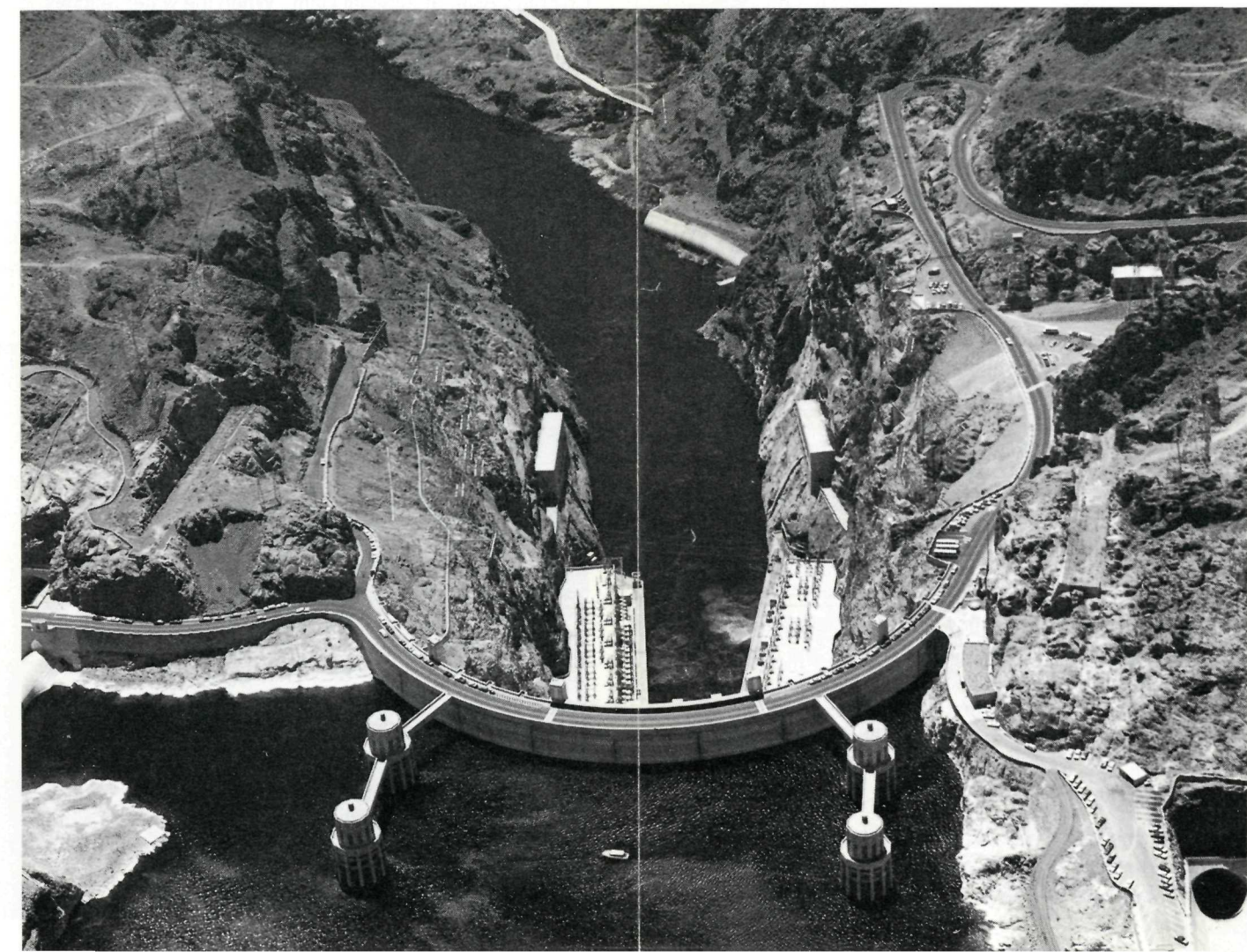
The river flowed into the valley for 16 months before it was returned to its original course. In that time, it destroyed homes and crops; heavily damaged highways, railroads, and irrigation works; and increased the size of the Salton Sea from 22 to 500 square miles. The Salton Sea now measures 360 square miles and has 110 miles of shoreline.

Before the river could be harnessed, its waters had to be equitably divided among the seven states it serves. In January of 1922, representatives of these states met to seek agreement on their respective rights to the river's waters. Herbert Hoover, then Secretary of Commerce, presided successfully over the negotiations which resulted in the Colorado River Compact, signed in November 1922. This agreement divided use of the water between the Upper and Lower Colorado River Basins. It also paved the way for construction of works to control, regulate, and use the river. Six years later, in 1928, Congress passed the Boulder Canyon Project Act, authorizing construction of Hoover Dam and the All-American Canal System, which carries water to thirsty lands in California and Arizona.

Construction of Hoover Dam began in 1931, and the last concrete was poured in 1935 — 2 years ahead of schedule. President Franklin D. Roosevelt dedicated the dam on September 30, 1935. The powerplant structures were completed in 1936, and the first generator began commercial operation in October of that year. The 17th and final generator went into commercial operation in 1961.

President Herbert Clark Hoover

Herbert Hoover was the 31st President of the United States. As a conservationist, he was a strong proponent of preserving our natural resources and protecting our nation's lands from misuse and from the destruction by disastrous floods. As an engineer, he strongly supported the construction of a high concrete dam on the Colorado River, to control the river, and to provide irrigation water to the rich farm lands nearby as well as a dependable supply of water for Southern California communities.



President Hoover advocated that the Boulder Canyon Project be self-supporting, financed entirely through the sale of hydroelectric power generated at Hoover Dam. He was personally involved in the preconstruction discussions concerning the location, feasibility and safety of Hoover Dam — a dam of unprecedented height and weight and the key to control and regulation of the Colorado River.

Engineering Wonder

Hoover Dam, Reclamation's pioneer multipurpose project on the Colorado River, is located in Black Canyon between Nevada and Arizona. In 1955, the American Society of Civil Engineers selected Hoover as one of our country's Seven Modern Civil Engineering Wonders. A bronze plaque citing this honor is located near the roadway at the center of the dam.

In 1985 Hoover Dam was designated by the Department of the Interior as a National Historic Landmark, and by the American Society of Civil Engineers as a National Historic Civil Engineering Landmark.

Hoover Dam was without precedent, the greatest dam constructed in its day. An arch-gravity structure rising 726 feet above bedrock, Hoover is still the Western Hemisphere's highest concrete dam. It is 660 feet thick at its base, 45 feet thick at its crest, and stretches 1,244 feet across the Black Canyon. There are 4.4 million cubic yards of concrete in the dam, powerplant, and related structures.

The reservoir, Lake Mead, is America's largest man-made reservoir. Named for Dr. Elwood Mead, Reclamation Commissioner from 1924 to 1936, the lake backs up 110 miles behind the dam and is capable of storing 28.5 million acre-feet of water. (An acre-foot of water is 325,851 gallons, or enough to cover an acre to a depth of one foot.)

Multipurpose Benefits

Hoover Dam pioneered the Bureau of Reclamation's efforts in multiple-purpose water resources development. The dam controls floods; it stores water for irrigation, municipal, and industrial uses; and it provides hydroelectric power generation, recreation, and fish and wildlife habitat.

Hoover Dam's reservoir, Lake Mead, can store nearly 2 years of average Colorado river flow. This water is released in a regulated, year-round flow as needed.

Water stored in Lake Mead irrigates more than a million acres of land in this country and nearly one-half million acres in Mexico. The water helps meet the municipal and industrial needs of over 14 million people.

As it passes through Hoover's turbines, the water generates low-cost hydroelectric power for use in Nevada, Arizona, and California. About 4 billion kilowatt-hours of energy, enough for 500,000 homes, are generated annually.

Water that was once muddy is now sparkling clear in reservoirs and in stretches of the river. Hoover and other dams on the Colorado have tamed the turbulent flow, creating clean bodies of water that provide recreation for more than 10 million people each year. These waters have also formed habitats for fish and wildlife in lands that were once nearly barren.

Hoover Dam changed the Colorado River from a natural menace to a national resource, strengthening the economy of the Southwest and the Nation.

Farms

Colorado River water stored behind Hoover Dam irrigates some of America's richest farmlands. Valley and mesa lands in the warm desert climate along the river grow a wide variety of fruits, vegetables, and other non-surplus crops throughout the year for the Nation's dinner tables.

Yearly gross income from these crops averages hundreds of dollars per acre. In 1988, for example, the total gross crop value in the Coachella and Imperial Valleys was nearly \$956 million, or over \$1,833 per irrigated acre.

Major irrigation projects which benefit from Hoover's control and regulation of the Colorado River include the Palo Verde Valley, the Colorado River Indian Reservation, the Yuma and Gila Projects in Arizona, and the Imperial and Coachella Valleys in California.

The All-American Canal System diverts water from the Colorado River at Imperial Dam. When the water reaches the farthest point on the system, it has traveled 10 days and some 500 miles from Lake Mead.

Energy

From 1939 to 1949, Hoover Powerplant was the world's largest hydroelectric installation. It is still one of the country's largest facilities, with 17 generating units and two station service units.

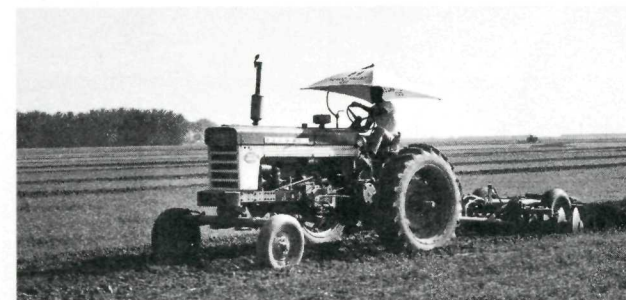
Hydroelectric power is created as water rushes through turbines that activate generators. When the water has completed its task, it flows on unchanged to serve other needs. The electricity produced is clean, nonpolluting, and, unlike many other forms of energy, renewable.

Through the sale of power and water, a major portion of the money used to construct Reclamation projects is returned to the Federal Treasury. Hoover Dam's approximately \$175 million cost was repaid over a 50-year period, with interest. Hoover Dam and Powerplant revenues from the sale of water and power have repaid approximately \$260 million, including interest, to the Federal Treasury principally from 50-year power contracts that ended May 31, 1987. Several contingencies, including \$25 million allocated to flood control, will be repaid with interest over the 30-year contract period which began June 1, 1987. Gross revenue through September 30, 1988, amounted to approximately \$636 million to meet all project requirements.

Hoover Dam energy is marketed by the U.S. Department of Energy's Western Area Power Administration to both public and private agencies under contracts which expire in 2017. This energy is allocated, by percentage, as follows:

State of Arizona	18.9527 percent
State of Nevada	25.1378 percent
City of Azusa	1.1487 percent
City of Anaheim	0.1104 percent
City of Banning	0.0442 percent
City of Burbank	0.5876 percent
City of Colton	0.0884 percent
City of Glendale	1.5874 percent
City of Los Angeles	15.4229 percent
Metropolitan Water District of Southern California	28.5393 percent
City of Pasadena	1.3629 percent
City of Riverside	0.8615 percent
Southern California Edison Company	5.5377 percent
City of Vernon	0.6185 percent

The program to uprate the generators is now in progress. The capacity is being increased from the nameplate capacity of 1,344,800 kilowatts to over 2.0 million kilowatts.



Cities

By regulating the Colorado River, Hoover Dam assures a steady flow of municipal and industrial water to Los Angeles, San Diego, and other Cities in the Southwest. Phoenix, Arizona, was added to the list when the Central Arizona Project began delivering water in 1985. The Tucson area is scheduled to receive project water early in 1991. Several agriculture users, several smaller cities, and an Indian community between Phoenix and Tucson also benefit from the water availability.

Parker Dam and its reservoir, Lake Havasu, are 155 miles downstream from Hoover Dam. Lake Havasu provides clear, desilted water for the Colorado River Aqueduct and serves the Central Arizona Project. Parker Dam was constructed with funds advanced by the Metropolitan Water District of Southern California.

Since 1941, the Colorado River Aqueduct has delivered water from Lake Havasu behind Parker Dam to the Los Angeles metropolitan area. The Colorado River Aqueduct is tapped by the San Diego Aqueduct, which takes water to that city's water system.

Part of the hydroelectric energy generated at Hoover and Parker Dams helps pump water along the Colorado River Aqueduct. The 242-mile-long aqueduct has an annual capacity of 1,212,000 acre-feet, or 1 billion gallons of water a day. Five pumping stations lift the water 1,617 feet over the mountains between the Colorado River and the coastal plain.

The Colorado River Aqueduct was also selected by the American Society of Civil Engineers as one of this Nation's Seven Modern Civil Engineering Wonders.

Homes and industries in the Las Vegas metropolitan area receive Colorado River water from Lake Mead through the recently completed Robert B. Griffith Water Project.

Recreation, Fish, and Wildlife

Lake Mead is one of America's most popular recreation areas. A 12-month season attracts more than 8 million visitors each year for swimming, boating, skiing, and fishing.

Black and striped bass, bluegill, crappie, and catfish abound in the lake. There is no closed season, and anglers take large numbers of game fish each year.

The lake and surrounding area are administered by the National Park Service as part of the Lake Mead National Recreation Area. The area also includes Lake Mohave, which extends from Hoover Dam 67 miles downstream to Davis Dam.

The cold waters flowing into Lake Mohave, drawn from the depths of Lake Mead and stocked from the modern Willow Beach National Fish Hatchery, provide excellent trout fishing.

Lakes Mead and Mohave also provide sanctuary for many species of waterfowl and other types of birds. In addition, they serve as huge waterholes for mountain sheep and other wildlife living in the adjacent mountains and mesas.

Hoover Dam Film Available

A 28-minute, 16-mm color film, "The Story of Hoover Dam," is available upon request for schools, civic groups, clubs, other public gatherings, and television stations.

Prints may be ordered from the U.S. Department of the Interior, Bureau of Reclamation, Code 7923A, PO Box 25007, Denver, Colorado 80225-0007. There is no cost to the borrower except return postage.

The film tells the dramatic story of Hoover Dam's construction and its impact on life in the Pacific Southwest. It depicts the dam's construction, installation of the last generating unit, recreation on Lake Mead, and developments downstream.

Guided Tours

Bureau of Reclamation guides conduct tours through Hoover Dam daily. Facilities are closed Christmas Day.

Hours: 8:00 a.m.-6:45 p.m. Memorial Day weekend through Labor Day, and 9:00 a.m.-4:15 p.m. daily during the remainder of the year.

An exhibit building housing a model of a generating unit and a topographical model of the Colorado River Basin is also open to the public.

More than 26 million visitors have toured the dam and powerplant since 1937. More than 700,000 people now take the tour each year.

