Glen Canyon Dam

Glen Canyon Dam is the second highest concrete-arch dam in the United States (Hoover Dam, which stands 726 feet (221 meters) above bedrock, is 16 feet (4.9 meters) taller)

Type ................................................................. Concrete arch
Construction period ............................................... 1957–1964
Prime contractor ................................................ Merritt-Chapman & Scott Corporation
Height above bedrock .............................................. 710 feet (216 meters)
Height above original river channel ......................... 583 feet (178 meters)
Thickness at lowest point of foundation ..................... 300 feet (91 meters)
Maximum thickness (right abutment) ......................... 350 feet (106 meters)
Thickness at crest .................................................. 25 feet (7.6 meters)
Crest length (arc at axis of dam) ............................... 1,560 feet (475 meters)

Volume of concrete
- Dam only .............................................. 4,901,000 cubic yards (3,750,000 cubic meters)
- Powerplant only ...................................... 469,000 cubic yards (359,000 cubic meters)
- Total concrete ........................................ 5,370,000 cubic yards (4,110,000 cubic meters)

Capacity of bucket used to pour concrete ................. 24 tons (22 metric tons)

Number of buckets of concrete poured to construct the dam ................................. approximately 400,000

Total rock and sand excavated ................................. 5,509,484 cubic yards (4,212,551 cubic meters)
(This includes 18,000 feet (5,486 meters) of tunnels and 127 feet (38.7 meters) below the original river channel)

Cost of dam .................................................. $187,000,000
Cost of dam, powerplant, switchyard, town
of Page, and other associated facilities ................. $314,000,000
Cost of recreational facilities ................................ $ 28,000,000
Cost of environmental studies (1983–1995) ............... $104,000,000
(Power revenues continue to fund monitoring and research activities at a cost of
about $8,000,000 per year)

River Outlet Works

Number of outlet pipes ......................................... 4
Size of each outlet pipe ...................................... 8 feet (2 meters) in diameter
Combined discharge capacity ................ 15,000 cubic feet per second (420 cubic meters per second)

Spillways

Number of spillway openings ................................ 2
(Each spillway tunnel reduces in size from 48 to 41 feet (15 to 12 meters) in diameter)
Elevation of spillway crest ................................. 3,648 feet (1,112 meters)
Combined discharge capacity ................ 208,000 cubic feet per second (5,890 cubic meters per second)
Glen Canyon Powerplant

Number of generating units .................................................. 8
Nameplate capacity ................................................................. 1,296,000 kilowatts
Number of penstocks ................................................................. 8
(Each penstock reduces in size from 15 to 14 feet (4.6 to 4.3 meters) in diameter)
Combined discharge capacity .............................................. 33,200 cubic feet per second (940 cubic meters per second)
Hydraulic turbines ................................................................. Francis-type
Cost of powerplant ................................................................. $97,000,000

Milestones

Construction authorized ......................................................... April 11, 1956
First construction contract awarded (right diversion tunnel excavation) .......... October 1, 1956
Diversion of Colorado River around dam site ................................ February 1, 1959
First bucket of concrete ......................................................... June 17, 1960
Last bucket of concrete ............................................................. September 13, 1963
First power generation .............................................................. September 4, 1964
Dedicated by Mrs. Lyndon B. Johnson ......................................... September 22, 1966
Glen Canyon National Recreation Area established ................................ October 27, 1972

Glen Canyon Bridge

Glen Canyon Bridge is the second highest steel-arch bridge in the United States
Type ................................................................. Steel arch
Prime contractor ............................................................. Kiewit-Judson & Pacific-Murphy
Construction period .......................................................... February 1957 to January 1959
Height above river .............................................................. 700 feet (213 meters)
Span of bridge arch ........................................................... 1,028 feet (313.3 meters)
Length of deck ................................................................. 1,271 feet (387.4 meters)
Vertical rise of arch ........................................................ 165 feet (50.3 meters)
Width of roadway (including sidewalks) .................................. 30 feet (9 meters)

Lake Powell

Start of storage ................................................................. March 13, 1963
Completion of initial filling .................................................... June 22, 1980
Total capacity when full at elevation
  3,700 feet (1,128 meters) ..................................................... 26,215,000 acre-feet* (32,336 million cubic meters)
Surface area when full ........................................................ 266 square miles (68,900 hectares)
Surface acres when full ....................................................... 161,390 surface acres (65,315 hectares)
Length of lake ................................................................. 186 miles (299 kilometers)
Miles of shoreline ............................................................. 1,960 miles (3,150 kilometers)
Depth of water at dam when full ........................................... 560 feet (171 meters)

*An acre-foot of water = 325,851 gallons (1,233,350 liters); enough to supply an average family of four for one year.