

CRSP PEAKING POWER
LEE'S FERRY - NO PUMPING

Location: 0.5 mile east of Lee's Ferry, Arizona

USGS Quad. - Leche - e Rock, Arizona; Lee's Ferry, Arizona (15 m)
Land Ownership: Glen Canyon National Recreation Area (NPS)
Land Required = 1,710 acres

Reservoirs: Forebay - Lake Powell
Afterbay - Area capacity (3,180 feet) = 43,280 acre-feet
Surface area (3,180 feet) = 1,141 acres

The afterbay is strictly for regulation of peaking releases
No pumping is involved

Penstock: 4 tunnels
Length = 2,400 feet
Diameter = 22.7 feet
 $Q = 32,300 \text{ f}^3/\text{s}$
 $Q' = 8,080 \text{ f}^3/\text{s}$

Power Potential: Head = 460 feet
Power = 1,006 MW

Make-up Water: At 6 acre-feet per year evaporation losses = (6)
(1,141 acres) = 6,850 acre-feet per year

Roads Required: Some improvement of existing roads at Lee's Ferry.

Transmission Lines: 300 miles of 500 kV line

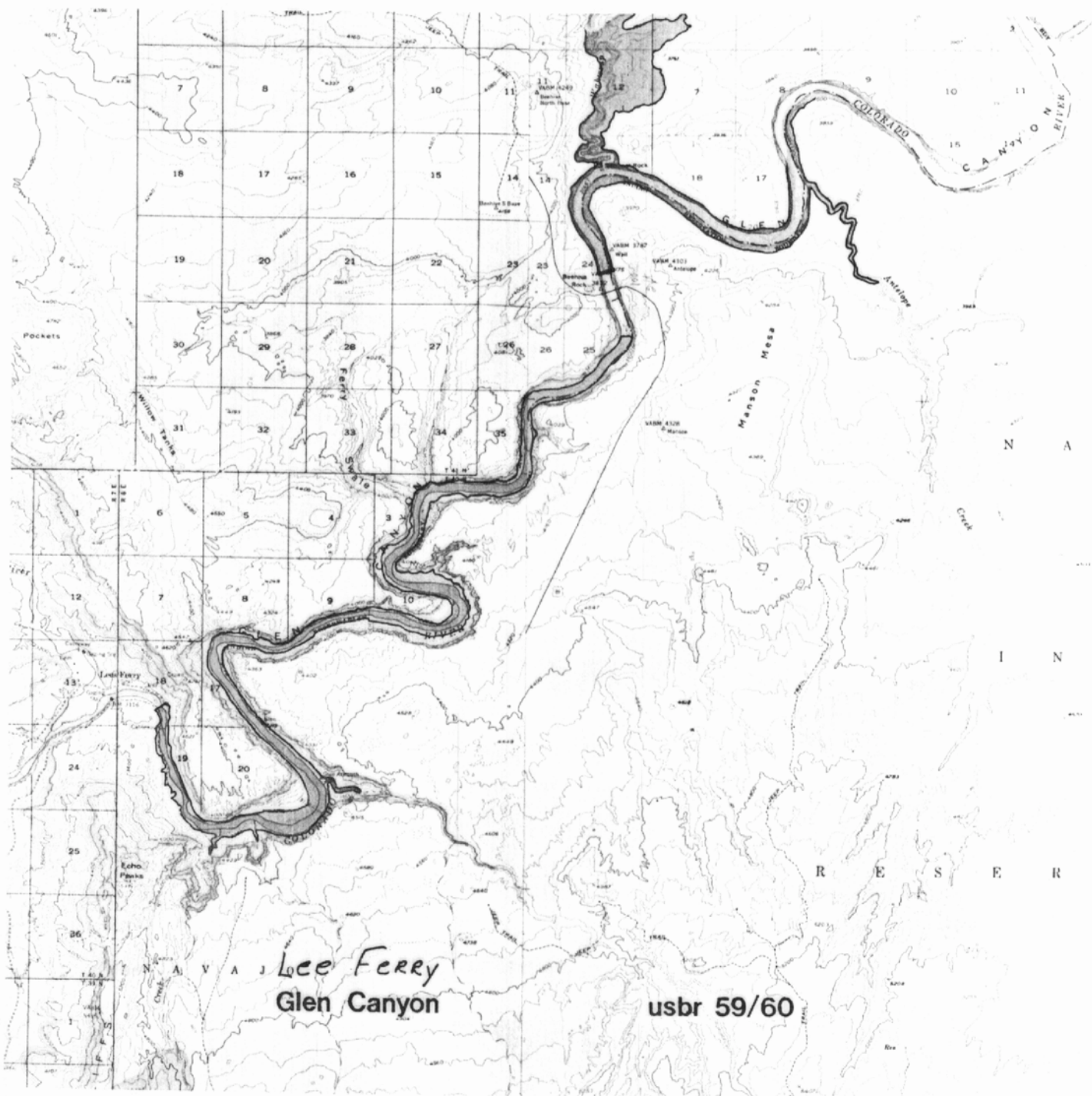
Flora - Mixed desert shrub - desert grassland
Barren ground
Riparian

Lee's Ferry Modification (cont.)

Description: The Lee's Ferry modification project would place up to 1,000 MW of additional generation capability at Glen Canyon Dam. Consequently, flows could be increased up to 68,000 F³/S for six hours per day, and reduced to 2,000 F³/S the remaining portion of the day. Although these flows are considerably less than the historic once in 4 years of 100,000 F³/S and could be allowed to go down to Lake Mead, it is anticipated that a reregulation dam at Lee's Ferry would be required for environmental and recreation purposes. Flows could then be sent down through the Grand Canyon at a constant 12,000 F³/S, or at variable rates predetermined by environmental or recreational needs. The reregulating dam would be a 60-foot concrete structure, and the resulting reservoir in the remaining portion of Glen Canyon would fill up and drain more or less on a daily basis.

As the annual amount of water released is controlled by the Colorado River Compact, the annual output of energy will not be increased. However, daily and weekly peak demands could be met more easily with this proposal. It could be operated continuously in emergency situations unless the continuous high flows (once the afterbay was filled) created unacceptable problems in Grand Canyon. Such a situation might also result in longer periods of low flows in remaining portions of the year.

This site was recommended for further study by the Peaking Power Study's Power Subteam.



Lee Ferry
Glen Canyon

usbr 59/60

CRSP PEAKING POWER
GLEN CANYON OUTLET WORKS

Location: Glen Canyon Dam, Arizona

USGS Quad - Lee's Ferry, Arizona, 15 m.
Land Ownership - Bureau of Reclamation Power Withdrawal
Land Required - Probably use the area of the existing machine shop at the base of Glen Canyon Dam

Reservoirs: Forebay - Lake Powell

Afterbay - None. The proposed facility will increase the peak releases into the Colorado River by approximately 6,000 cubic feet per second

Dams: None

Penstock: Use existing outlet works

Power: 250 MW
Head - 460 feet

Roads: None

Transmission Lines: Use existing corridors or lines

Make-up Water: None

Description: This project would place generation units on the existing outlet works at Glen Canyon Dam. This addition would change the operational pattern of the existing generation facilities at Glen Canyon Dam. Flows for a peak 6-hour period could be increased up to 40,000 F³/S with corresponding longer periods each day when releases would be at the minimum flow level.

This added capacity could be operated continuously in emergency situations unless such an operation created unacceptable problems in Grand Canyon.

This site was recommended by the Peaking Power Study's Power Subteam for further study.

CRSP PEAKING POWER
LEE'S FERRY - NO PUMPING

Location: 0.5 mile east of Lee's Ferry, Arizona

USGS Quad. - Leche - e Rock, Arizona; Lee's Ferry, Arizona (15 m)
Land Ownership: Glen Canyon National Recreation Area (NPS)
Land Required = 1,710 acres

Reservoirs: Forebay - Lake Powell
Afterbay - Area capacity (3,180 feet) = 43,280 acre-feet
Surface area (3,180 feet) = 1,141 acres

The afterbay is strictly for regulation of peaking releases
No pumping is involved

Penstock: 4 tunnels
Length = 2,400 feet
Diameter = 22.7 feet
 $Q = 32,300 \text{ f}^3/\text{s}$
 $Q' = 8,080 \text{ f}^3/\text{s}$

Power Potential: Head = 460 feet
Power = 1,006 MW

Make-up Water: At 6 acre-feet per year evaporation losses = (6)
(1,141 acres) = 6,850 acre-feet per year

Roads Required: Some improvement of existing roads at Lee's Ferry.

Transmission Lines: 300 miles of 500 kV line

Flora - Mixed desert shrub - desert grassland
Barren ground
Riparian