

## ENGINEERING

# Grand Coulee or Boulder Dam: Which Holds Honors for Size?

**Boulder Dam Highest, Impounds Most Water;  
Grand Coulee Longest, Provides Most Power**

**E**NCOURAGEMENT given the nation by President Roosevelt's expressed faith in the Grand Coulee and other power projects brings up the question, which is the world's largest dam?

Resulting opinions are immediate but confusing. Boulder is the largest dam; it cost more and holds more water. . . . Grand Coulee is the largest; the water it does hold is capable of producing more horsepower.

And so the argument continues. As each yardstick comes up it is found that both dams have numerous claims to greatness.

In dollars and cents the Colorado project wins. Its total cost of \$165,000,000 is nearly three times as much as the \$63,000,000 that will be spent for the Columbia Basin project.

Grand Coulee will eventually generate 2,225,000 horsepower. This is a substantial margin over the 1,835,000 horsepower that will be harnessed in Black Canyon. Grand Coulee will also be the longest concrete masonry dam in the world. Here it has two sets of figures to offer. The low dam to be constructed first for power alone has a crest length of 3,400 feet. When this is capped with more concrete for the subsequent irrigation project it will be 4,000 feet long with a maximum height of 500 feet above the lowest foundation.

Boulder is only 1,180 feet along the crest. On the other hand it will be 726 feet high, another world's record.

The reservoir impounded by the Boulder Dam contains 30,500,000 acre feet, or 5,000 gallons of water for every human being on earth. Grand Coulee contains only 1,200,000 acre feet, its reservoir extending about 50 miles up the Columbia River. The normal course of the Colorado, however, will be submerged a distance of 115 miles by the man-made lake, giving a total shoreline of about 550 miles.

In the amount of masonry to be poured into each structure Grand Coulee will be surpassed by Boulder Dam. The latter will contain about

4,200,000 cubic yards of concrete in the dam, power plant, and nearby works. This amount, if placed on an average city block, would rise to a height greater than that of the 1,248-foot Empire State Building in New York.

Comparisons continue endlessly in the same way. The safest position to take is a neutral one or to point with pride to American versus foreign projects.

*Science News Letter, August 18, 1934*

## SEISMOLOGY

## Quakes Most Frequent At Night and in Winter

**I**F YOU LIVE in a region of weak earthquake shocks, as in the United States, the greatest number recorded occur during the night with a maximum around midnight. On a yearly basis the greatest number occur in winter.

In geologically unstable regions, like Italy and Japan, where earthquake shocks are strong the maximum number occur during the daytime around noon. More occur in summer than in winter.

Dr. Charles Davison of Cambridge, reporting to the *Journal of Geology*, suggests that the noon and summer maxima are linked with the elevation or swelling of the earth's crust. The midnight and winter maxima correspond, he thinks, to a contraction of the crust.

*Science News Letter, August 18, 1934*

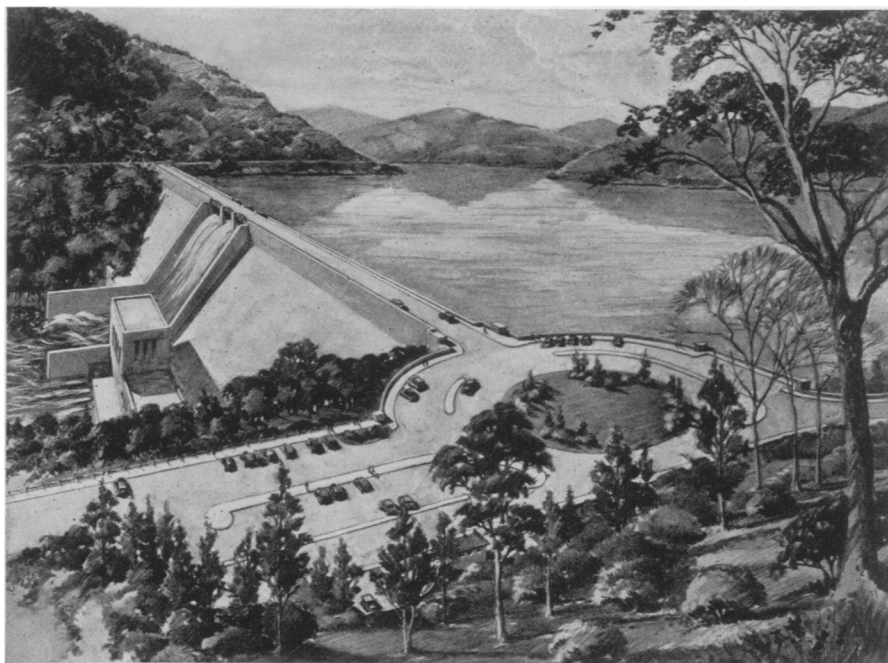
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## 91 Miles of Tunnels in World's Longest Aqueduct

**T**O CARRY water 241 miles across the sweltering deserts of southern California, the world's longest single aqueduct will pierce hills and mountains in 29 different places.

A total of 91 miles of tunnels will be necessary before Colorado River water can flow from the Parker Dam on the border between Arizona and California to thirteen cities of the Los Angeles metropolitan area.

Tunnel driving operations are at a maximum this year in the \$220,000,000 project to maintain a flow of water across one of the most arid regions in the United States. Completion of the lined tunnels is not scheduled until 1938, R. M. Merriman, superintendent,



### WHEN IT'S FINISHED

*Norris Dam on the Tennessee River as it may look when finished. Artist's drawing shows idealized view of the dam and the great lake of water it will store. Drawing from The Explosives Engineer, courtesy The Hercules Powder Co.*