THE
RECLAMATION ERA

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World Power Conference Broadcast—Boulder Dam Portion

12:25 TO 12:45 P. M. PACIFIC STANDARD TIME (RED), FRIDAY, SEPTEMBER 11, 1936

00:00. KEATING. The turbine starts as the first water strikes its blades!

(Sound effect of turbine.)

00:20. KEATING. The needle valves open, slightly. The first water begins to fall to the canyon floor.

00:40. KEATING. This is Laurence Keating speaking to you from the upstream end of the Nevada wing of the Boulder Dam power-house, at the bottom of Black Canyon, on the Colorado River. I am looking downstream to where, some four blocks away, four of the needle valves already are permitting four gigantic jets of water to burst out over the canyon. They leap from a great concrete building—the valve house—which clings close to the volcanic cliffs that form Black Canyon. They spurt out from outlets 7 feet in diameter from a height of 177 feet above the level of the tailrace, which is the level of the Colorado River. Thirteen feet higher than the fall of Niagara is the fall of those jets of water; and they feather gracefully downward, and almost across the 300-foot wide canyon. It will take 20 minutes for all 12 to be opened fully—with only the four partially turned on now, there is already a definite murmuring roar of falling water—hear it?

(Five seconds or so of light roar.)

We told you that each of those jets of water is 7 feet in diameter where it leaves the valve house outlet. Yet, from here, they look no larger than the stream from a large fire hose. So high are these volcanic cliffs; so immense is the dam itself sloping straight up behind us; so enormous are the power-house buildings, that all—dam, power-house, water jets, and age-old mountains—appears to be one of a piece, and all designed by the same architectural hand.

We shall not fill you with facts and figures; but a few may be of interest. The power-house building itself is in the shape of a U, with the bottom of the U, at one corner of which we are standing, resting at the base of the dam proper, and the two legs, each two city blocks long, extending downstream from the dam on each side of the canyon. The total length of this U is 1,650 feet. And—and this is the most amazing thing about it—the power-house, in height from foundation, is equivalent to that of a 20-story building. Yet, from the top of the dam, which is 560 feet above where we are standing, this power-house looks like a bungalow!

One more set of pertinent facts: Boulder Dam is the largest and highest in the world, 727 feet above bedrock; 4,400,000 cubic yards of concrete masonry are in the dam, power-house, and appurtenant works. This power-house is designed to have a rated horsepower capacity of 1,835,000, by far the largest in the world. When completely installed there will be fifteen 115,000-horsepower vertical hydraulic turbines, and 255,000-horsepower installations of the same type. This Boulder Dam and power-house is the hugest, most gigantic, and most awe-inspiring project of its type ever brought to completion by man. And, withal, it is beautiful; beautiful not only to the eye of a trained engineer but to the lay public as well.

A word or two about the general setting and location; here at Black Canyon, we are about 25 miles, air line southeast, from Las Vegas, Nev. Black Canyon is the dividing line between the States of Arizona and Nevada. Boulder Dam joins the two; and the power-house wings—the legs of that U—lie one in Nevada and the other in Arizona. Los Angeles is a little over 300 miles south and west, while Salt Lake City is four hundred and some miles north and east.

Looking downstream again, we note that small jets of water are beginning to leap from all 12 of the needle-valve outlets now; and while those valves are slowly being opened, I'm going to ask a few questions of Mr. Ralph Lowry, construction engineer, United States Bureau of Reclamation, who is in charge of this Boulder Dam project. Following our interview with Mr. Lowry, we are going to switch up into the air for a bird's-eye-view description of this project; but now, here's Mr. Lowry, and—well, let's start at the beginning, Mr. Lowry. Why was Boulder Dam built?

04:00. LOWRY. First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses; and, third, for power development.

KEATING.—Then all this power you can generate here is but one of several reasons for the dam?

LOWRY. Yes, and probably important in the order named.

KEATING. How large is the reservoir the dam creates?

LOWRY. When full, it will be 115 miles long, and will hold about 30,500,000 acre-feet—an acre-foot is enough water to cover 1 acre to a depth of 1 foot. Perhaps you can get a better idea of how much that is if I tell you that this reservoir, which is named Lake Mead in honor of the late Dr. Elwood Mead, formerly Commissioner of the Bureau of Reclamation, will contain enough water to cover the State of New York to a depth of 1 foot. There are 9,500,000 acre-feet in the lake now, and if that were spread over the District of Columbia, Washington would be under 240 feet of water.

KEATING. How high will the water be on the dam?

LOWRY. That's a hard question to answer, definitely, because the water surface in the reservoir will fluctuate due to the fact that it will be necessary to release water as needed for power and irrigation demands. Perhaps it will answer what you have in mind, to