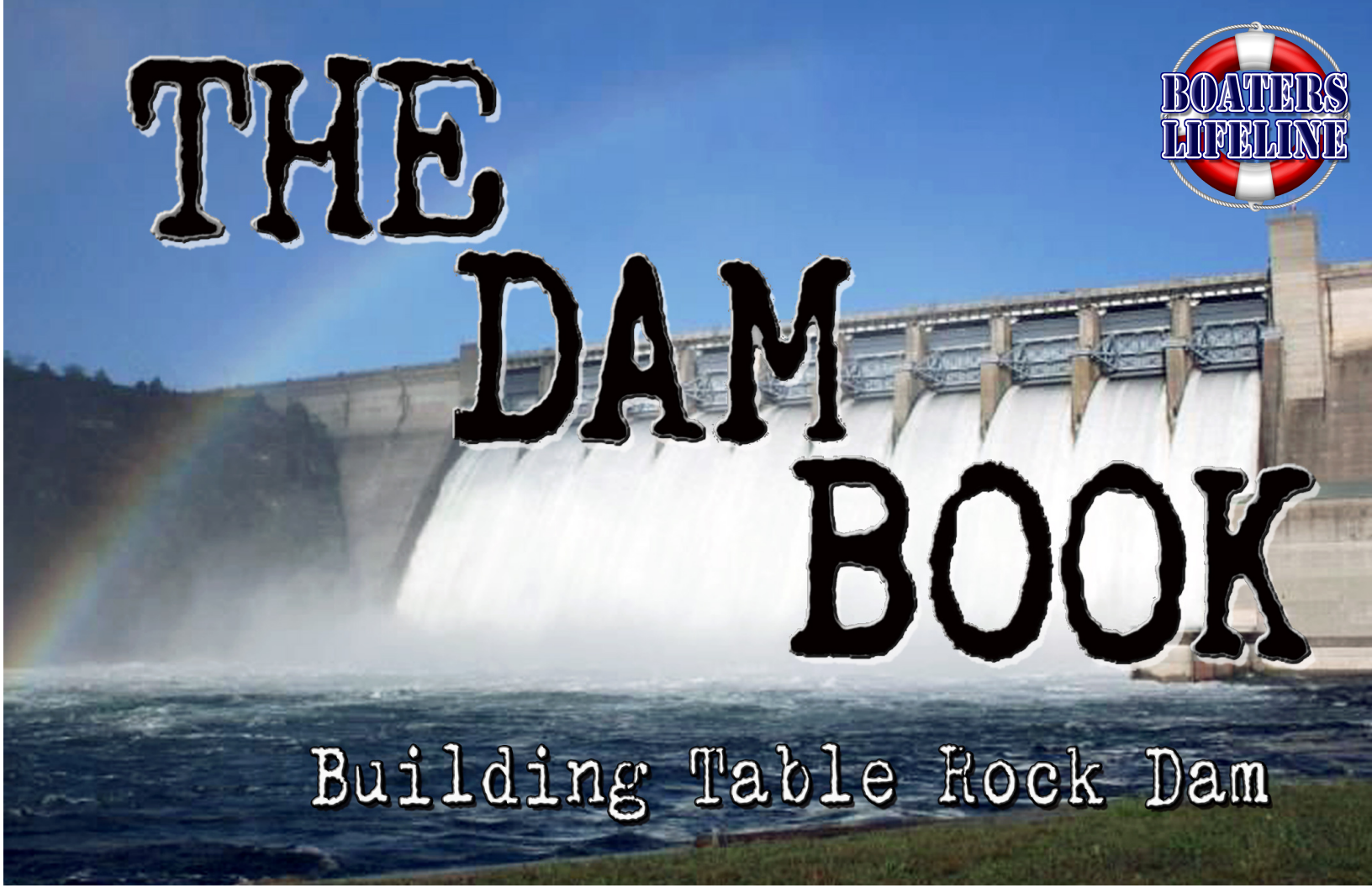

THE DAM BOOK
BOATERS LIFELINE
Building Table Rock Dam

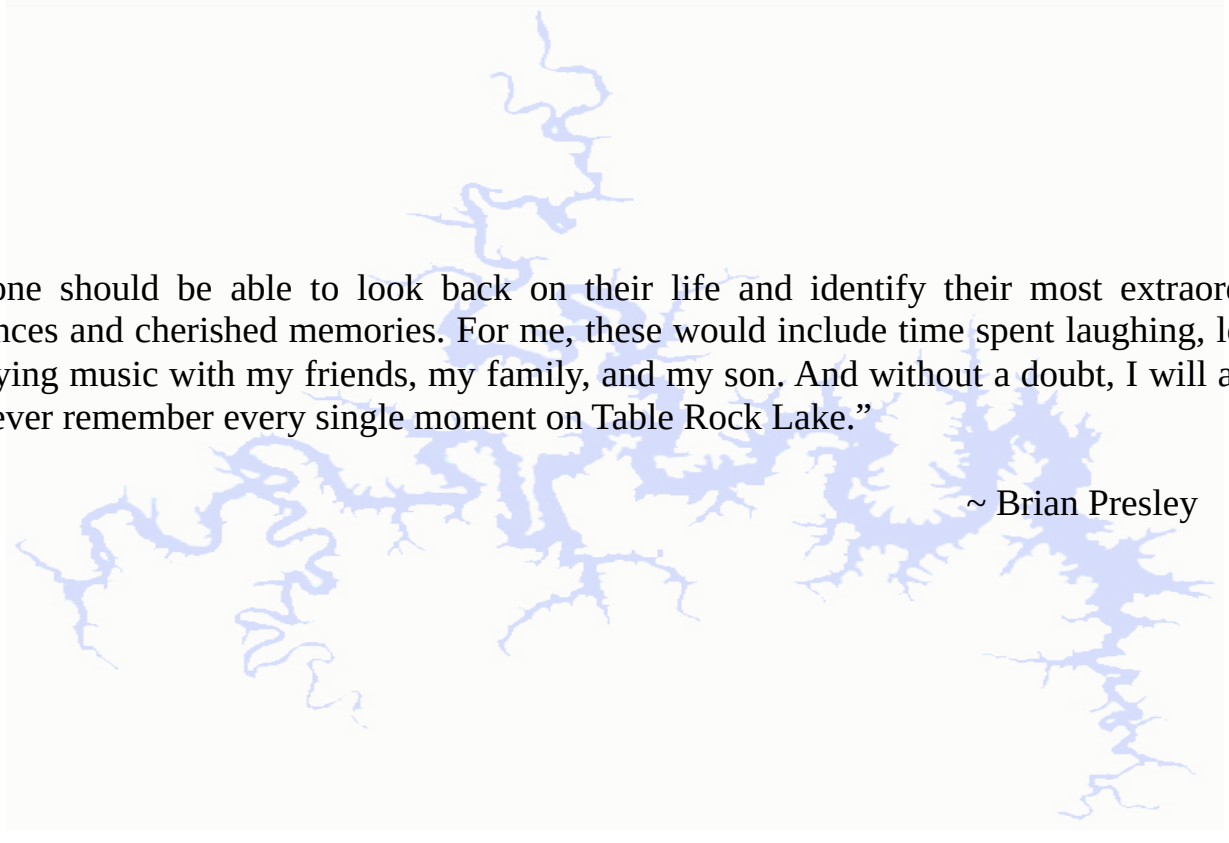
THE DAM BOOK

-

BUILDING TABLE ROCK DAM

A gift to you from Boaters Lifeline LLC.
Just for fun and a little bit of area history. Not for resale.
A very special thanks and credit to the US. Army Corps of Engineers for the digital imagery, and to all the people that helped make this chain of lakes a dream come true.

www.boaterslifeline.com



“Everyone should be able to look back on their life and identify their most extraordinary experiences and cherished memories. For me, these would include time spent laughing, loving, and playing music with my friends, my family, and my son. And without a doubt, I will always and forever remember every single moment on Table Rock Lake.”

~ Brian Presley

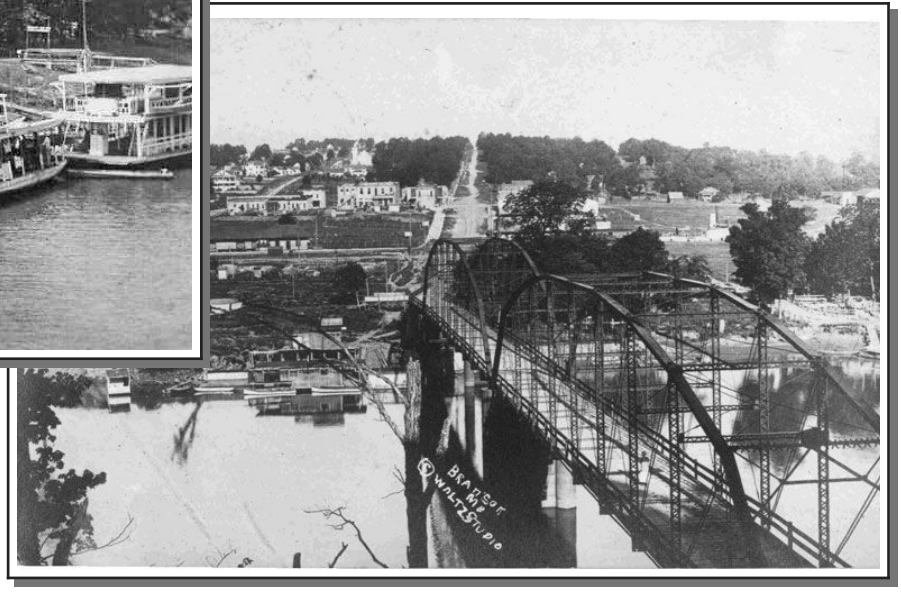
THE DAM BOOK - BUILDING TABLE ROCK DAM

Deep within the Boston Mountains of Arkansas, in the heart of the Ozark-St. Francis National Forest, the White River springs forth to form the start of this journey. For thousands of years the White River carved its way through the Ozark Mountains, flowing north out of Arkansas and into southwest Missouri. The path of least resistance turns the river south back into Arkansas again, to eventually join up with the mighty Mississippi River. Despite being a relativity short river, the White carries nearly as much water as the tremendous Arkansas River, averaging more than 20,000 cubic feet per second. During floods, it can flow an astonishing 100,000 cubic feet per second. Controlling this beast is precisely why The Army Corps of Engineers included the Table Rock project in their master plan of four dams & four lakes on the White River system.

This "chain of lakes" would be supported by Beaver Dam, Table Rock Dam, Powersite Dam (built in 1913 to establish Lake Taneycomo), and finally Bull Shoals. In addition to the benefits of flood control and the lakes becoming popular recreational destinations, substantial amounts of hydroelectric power would be produced at the Beaver, Table Rock, and Bull Shoals sites. Though this project was authorized under the US Flood Control Act of 1941, the onset of World War II and the Korean War delayed construction until 1954.

The lakes, river sections, and dams that make up this incredible system have become famous for world-class fishing, diverse recreational activities, abundant wildlife, exceptional water quality, and breathtaking beauty.

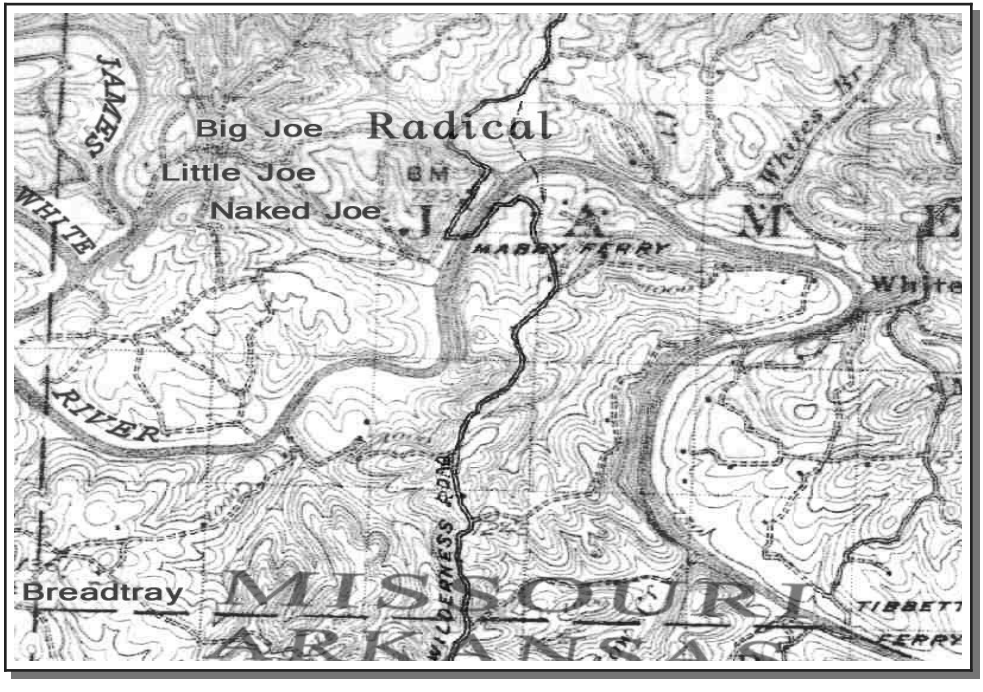
A popular activity on Lake Taneycomo - Sammy Lane River Boat Rides Branson Missouri c 1953

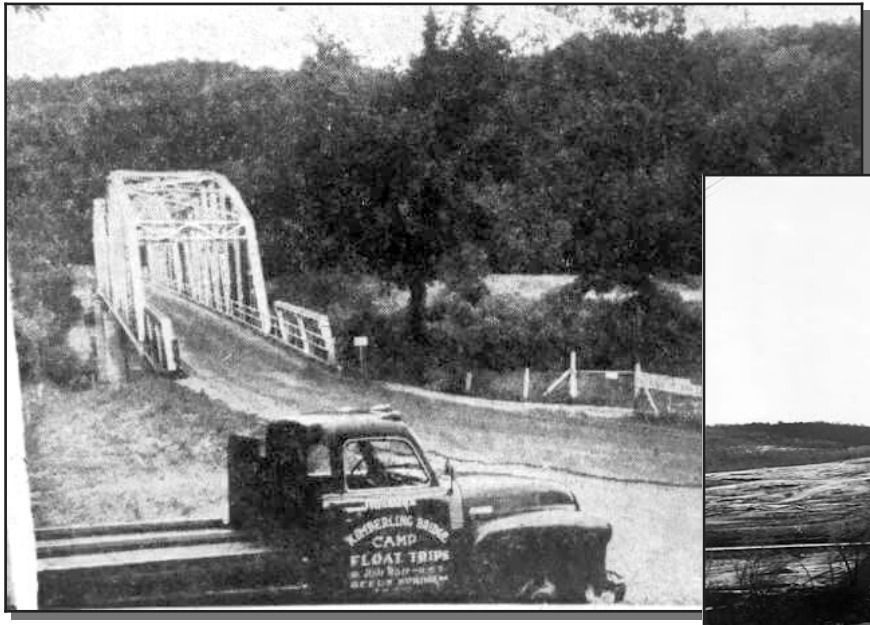


76 Hwy Bridge From Branson to Hollister over the existing Lake Taneycomo

Founded in 1878, the town Radical Missouri lay on the banks of the White River and was named after the Radical Republicans, a political faction of the Republican party that pushed for the complete and permanent eradication of slavery. Radical remained until 1944, but the area would not officially become a town again until the incorporation of Kimberling City, nearly 30 years later.

Flowing south from Springfield Missouri, the James River joins the White River, surrounding the Joe Bald Mountains and just East of Radical. Although a popular area to float, it was often quite dangerous, claiming many lives over the years. c1940

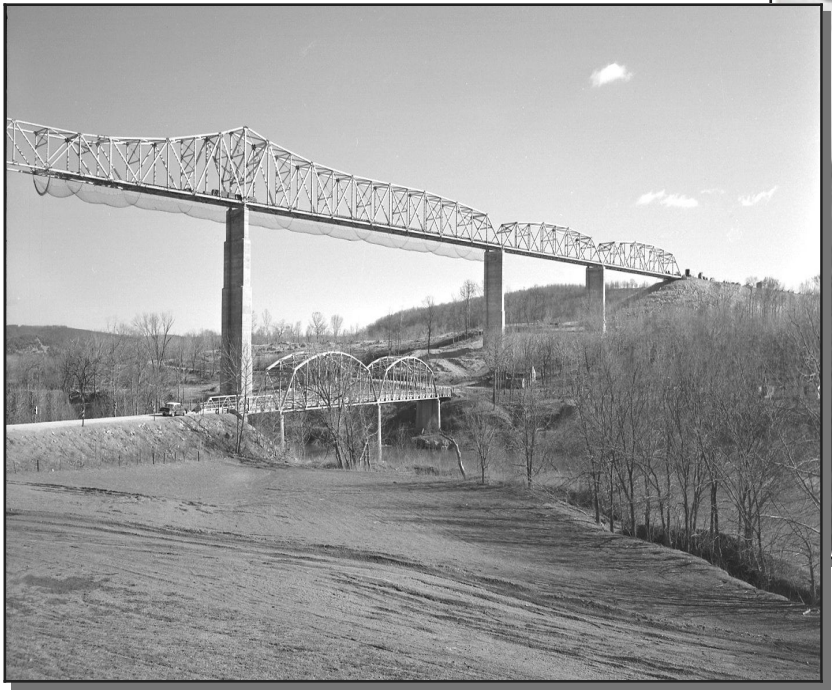




Named after the Kimberling family that operated a nearby ferry, Kimberling City was incorporated in 1973. Kimberling Bridge Camp & Float Trips canoe truck. c1950

Preparing for the arrival of Table Rock Lake. Looking south, the new [Kimberling City] bridge construction sits above the original river bridge seen on the right.

The old bridge was not removed and is popular today with scuba divers...



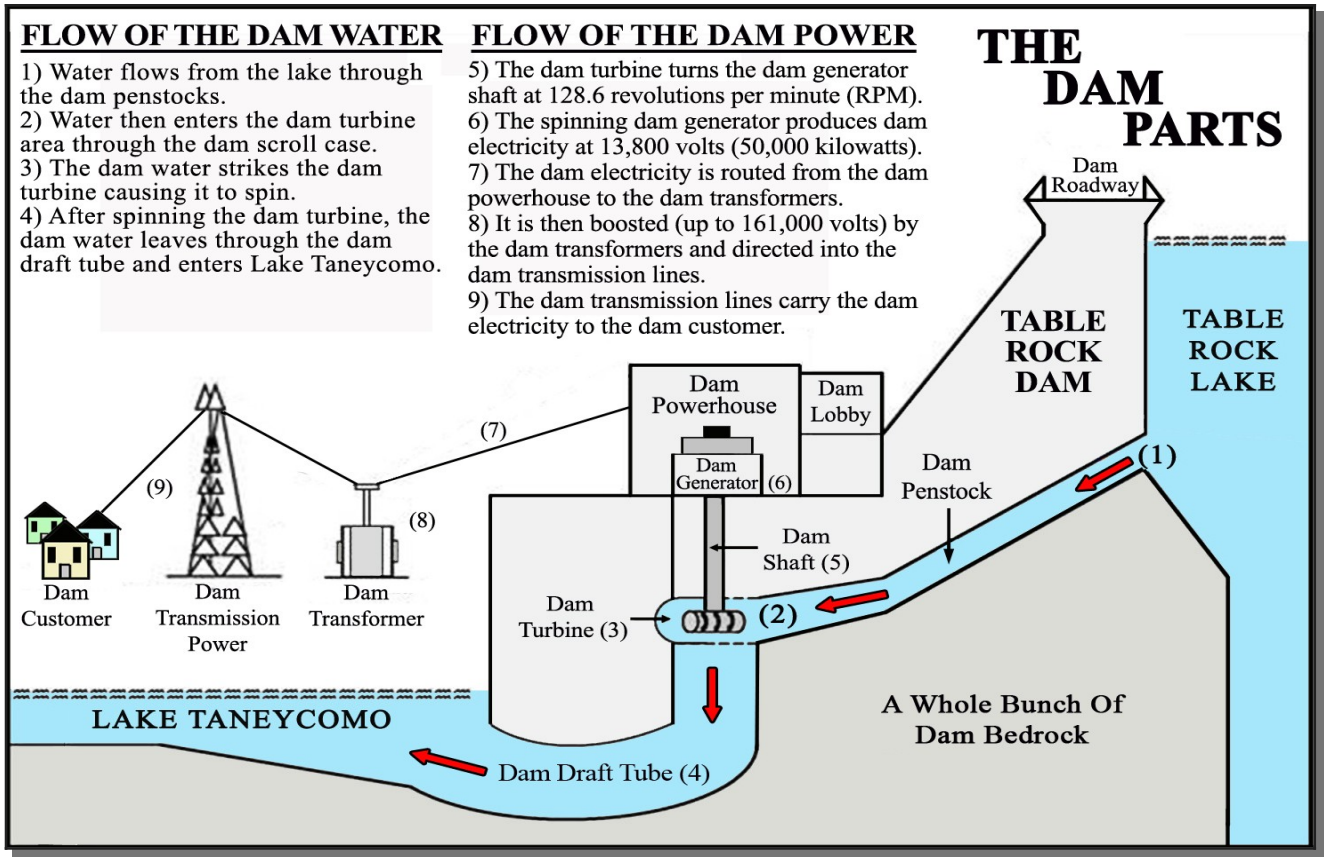
...that aren't bothered by cold temperatures, low visibility, and over 100 feet of water depth.

FLOW OF THE DAM WATER

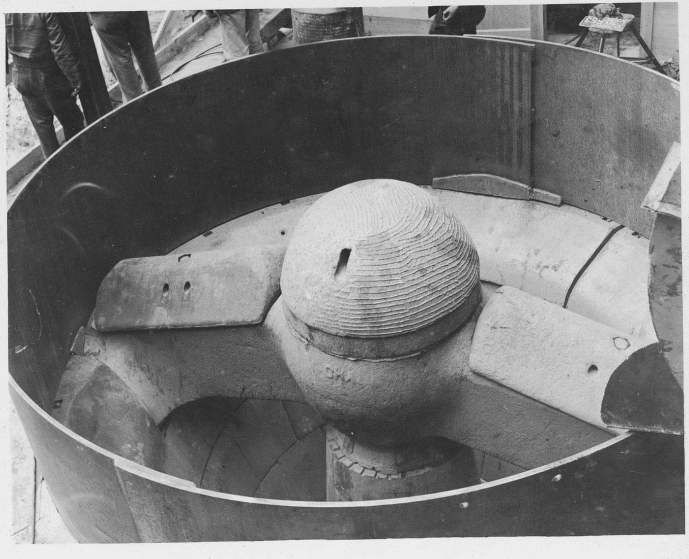
1) Water flows from the lake through the dam penstocks.
2) Water then enters the dam turbine area through the dam scroll case.
3) The dam water strikes the dam turbine causing it to spin.
4) After spinning the dam turbine, the dam water leaves through the dam draft tube and enters Lake Taneycomo.

FLOW OF THE DAM POWER

5) The dam turbine turns the dam generator shaft at 128.6 revolutions per minute (RPM).
6) The spinning dam generator produces dam electricity at 13,800 volts (50,000 kilowatts).
7) The dam electricity is routed from the dam powerhouse to the dam transformers.
8) It is then boosted (up to 161,000 volts) by the dam transformers and directed into the dam transmission lines.
9) The dam transmission lines carry the dam electricity to the dam customer.



Ready? Let's build a dam!



42" crusher with head installed, quarry. ~~*2.8c rolleiflex.*~~
18 March 1955 *Table Rock* *TR 238*

View of conveyor belt from quarry site surge pile, looking toward plant on right abutment. ~~*(2.8c rolleiflex)*~~.
18 March 1955 *Table Rock* *TR 239*

'B' conveyor belt line from tunnel to scrubber, ~~2.8c rolleiflex.~~
18 March 1955 Table Rock TR 243

Contractor's bridge, upstream side to left embankment, ~~water~~ river ~~level~~ 23.60. ~~2.8c rolleiflex~~.
21 March 1955 Table Rock TR 246

From 42" crusher along 'A' belt to 20,000 ton surge.
23 March 1955 *Table Rock* *TR 258*

View of Keyway, Rt. Abutment Looking Along
10/00 Line Up Face of Keyway

24 Mar 55 Table Rock TR 270

General view, looking upstream from Sta. 63/01, Ra. 6/00.
30 March 1955 *Table Rock* *TR 302*

General view of left abutment from Sta. 63/01, Ra. 6/00, looking north-northeast.
30 March 1955 *Table Rock* *TR 303*

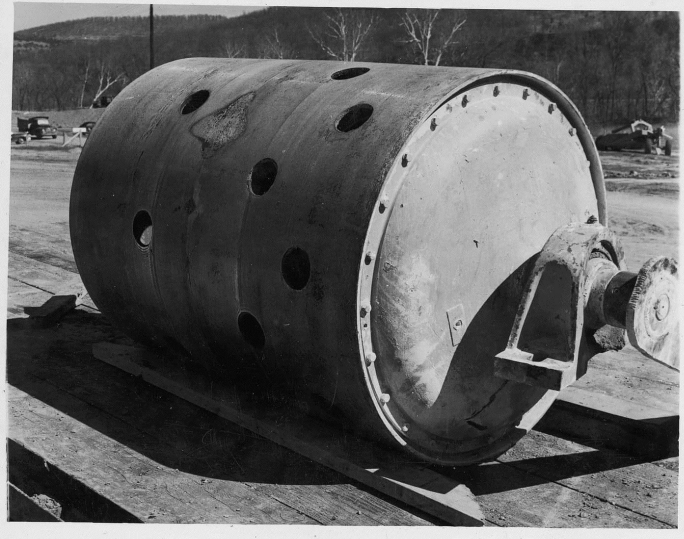
View installation of conveyors at transfer station, looking downstream right abutment; on left is the screening plant.
30 March 1955 *Table Rock* *TR 304*

Line drilling close-up at Sta. 48/00.
4 April 1955 *Table Rock* *TR 311*

Water supply pump for No. 1 Settling Pond, looking upstream at contractor's bridge.

8 April 1955 *Table Rock* *TR 322*

Thank God for the toy Lincoln Logs or we might not have gotten the idea for the BIG logs! :)



Motorized head pully, 125 h.p., removed from 'A' belt for servicing. Close-up.

15 April 1955 *Table Rock* *TR 348*

A Holy Roller?

Gretna Siding
View of Cement Silo

25 Apr 55 Table Rock TR 375

VIEW LOOKING TOWARD CONTRACTOR'S PLANT FROM ACCESS ROAD TUNNEL, SHOWING "B" CONVEYOR BELT IN OPERATION.

25 APRIL 1955 TABLE ROCK TR-377

VIEW SHOWING 40,000 TON SURGE PILE, UPSTREAM SETTLING POND, AND PUMP STATION.

25 APRIL 1955 TABLE ROCK TR-379

VIEW SHOWING INTER-CONNECTING CONVEYORS, ON LEFT IS TRANSFER STATION, ON RIGHT IS SCREENING PLANT.

25 APRIL 1955 TABLE ROCK TR-380

37

View "F" Conveyor Failure. Looking North from Mid-Point on Up-stream Side.

29 Apr 55 Table Rock TR 402

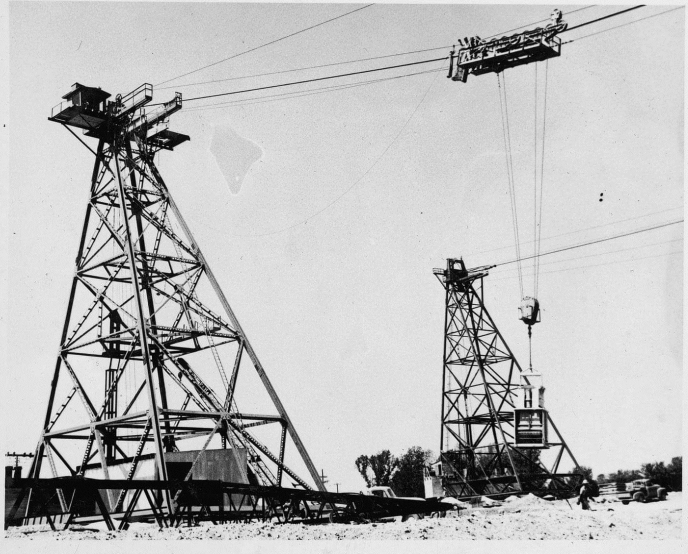
VIEW IN QUARRY, EUCLID TRUCK DUMPING IN CRUSHER CHUTE. AND JIMMY HOFFA?

15 JUNE 1955 TABLE ROCK TR-512

View, looking east, showing progress on left abutment.

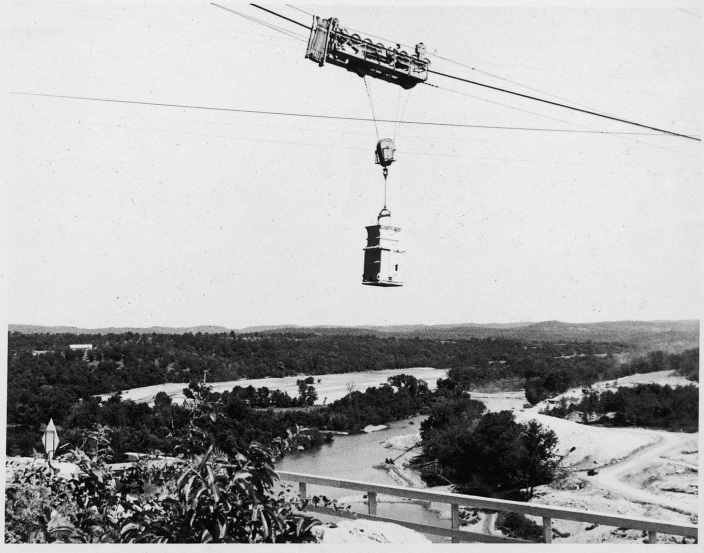
25 Jul 55 Table Rock File No. A-TR-544

77



View, showing testing of 4-yd cable on right abutment.

7 Jul 55 Table Rock File No. TR-559



View, showing testing of 4-yd cable bucket moving to tail tower.

7 Jul 55 Table Rock File No. TR-560

View, looking upstream from Highway 86 overlook.

27 Jul 55 Table Rock File No. TR-650

View, looking upstream, showing excavation of Stage 1 cofferdam partly completed.

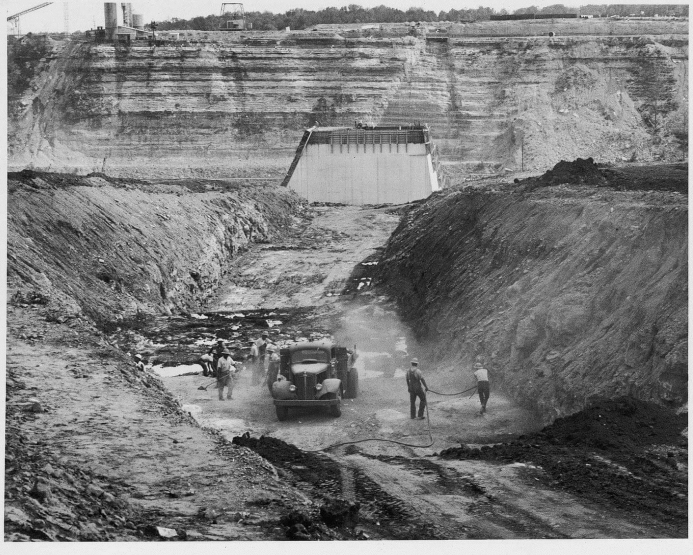
8 Aug 55 Table Rock File No. TR-660

VIEW, LOOKING NORTHWEST, SHOWING PROGRESS ON MONOLITH 15 AND LEFT TRAINING WALL. AT EXTREME LEFT CENTER EXCAVATION HAS STARTED ON UPSTREAM END OF STAGE I COFFERDAM.

11 AUGUST 1955 FILE: TR 664

VIEW, LOOKING UPSTREAM, SHOWING DIVERSION STAGES. STAGE I COFFERDAM RUNNING PARALLEL WITH RIVER. AT EXTREME RIGHT DOWNSTREAM END EXCAVATED FOR STAGE II DIVERSION. LOWER LEFT STAGE II DOWNSTREAM COFFERDAM, UPPER LEFT STAGE II UPSTREAM COFFERDAM.

11 AUGUST 1955 FILE: TR 665

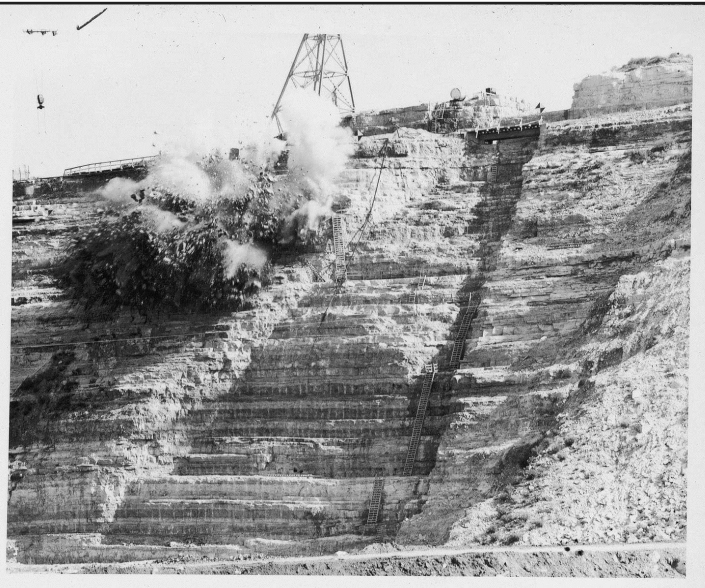


View, looking toward right abutment, showing clean-up operations in core trench at Sta. 43+00.

16 Aug 55 Table Rock File No. TR-669

View, looking downstream and toward right abutment, showing overhang. Compare with TR-674 and 675.

16 Aug 55 Table Rock File No. TR-673



View, looking toward right abutment, showing blasting operation downstream of keyway.

16 Aug 55 Table Rock File No. TR-674

View, looking along axis of dam from right abutment, showing progress on Monolith 15 and left training wall.

16 Aug 55 Table Rock File No. TR-676

76

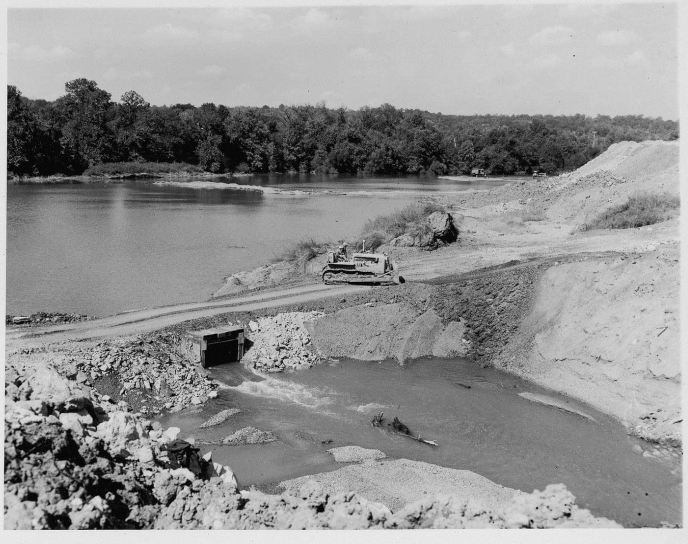
View, looking upstream, showing placement of river gravel on downstream wraparound section.

23 Aug 55 Table Rock File No. TR-688

View, looking downstream, showing enclosure of Stage II cofferdam.

2 Sep 55 Table Rock File No. TR-724

89



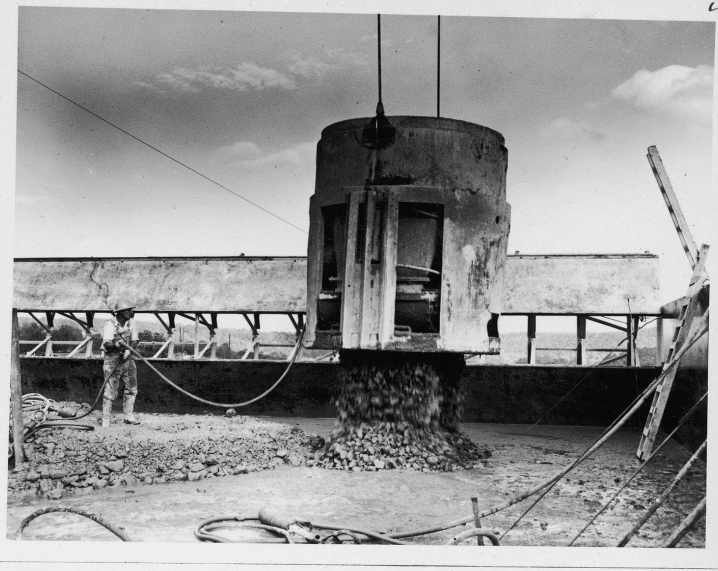
VIEW LOOKING UPSTREAM, SHOWING BOX CULVERT & FILL CROSSING STAGE 2 DIVERSION.

21 SEPT. 1955 TABLE ROCK TR-754

VIEW LOOKING UPSTREAM, SHOWING REMOVAL OF ROCK ON DOWNSTREAM WRAPAROUND SECTION.

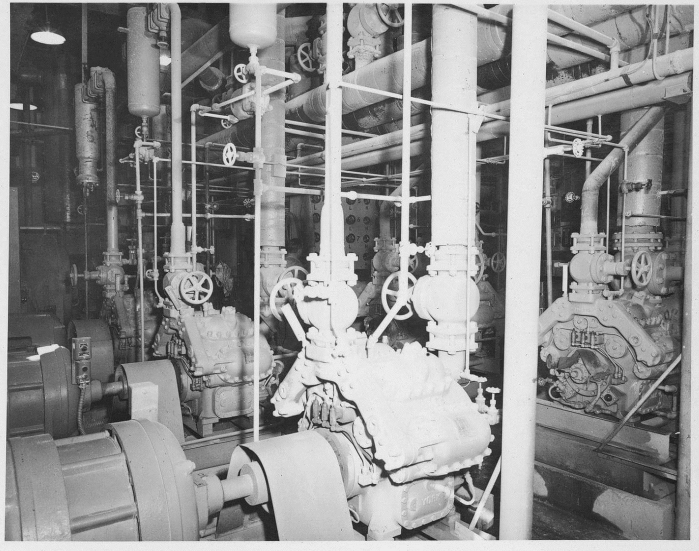
21 SEPT. 1955 TABLE ROCK TR-756

86



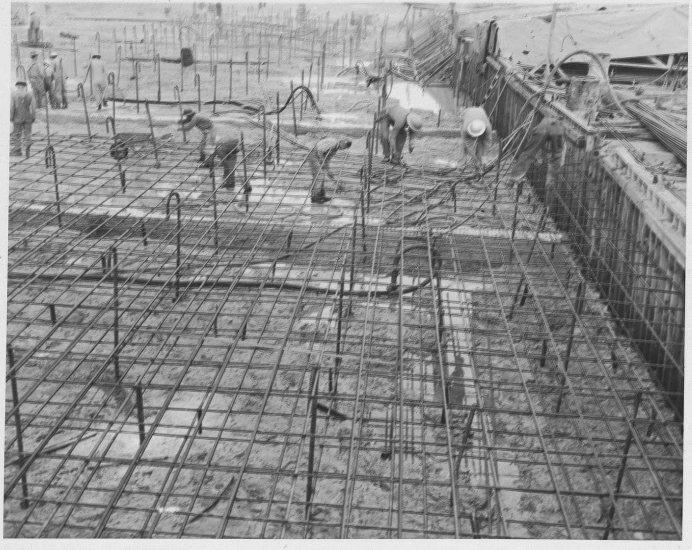
VIEW LOOKING DOWNSTREAM, SHOWING HINGED FORM IN MONOLITH 2.

7 OCTOBER 1955 TABLE ROCK TR-778



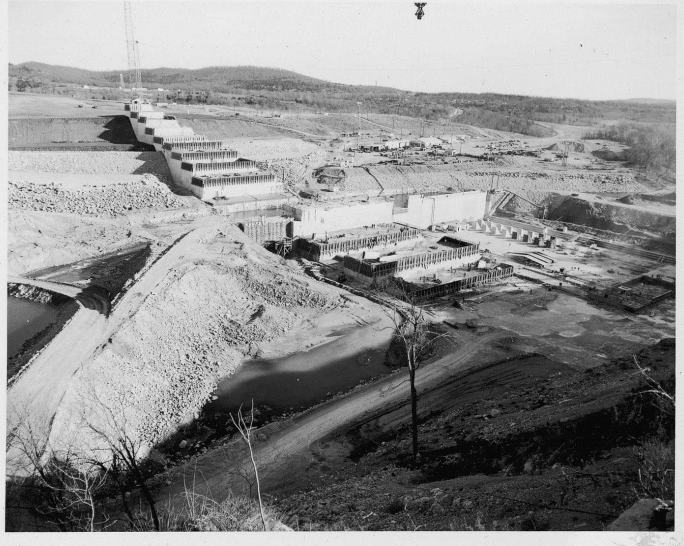
VIEW OF INTERIOR REFRIGERATION COMPRESSOR ROOM IN COOLING PLANT.

21 NOVEMBER 1955 TABLE ROCK TR-862



VIEW, LOOKING UPSTREAM, SHOWING SLAB B-3 FOUNDATION IN STILLING BASIN.

22 NOVEMBER 1955 TABLE ROCK TR-869



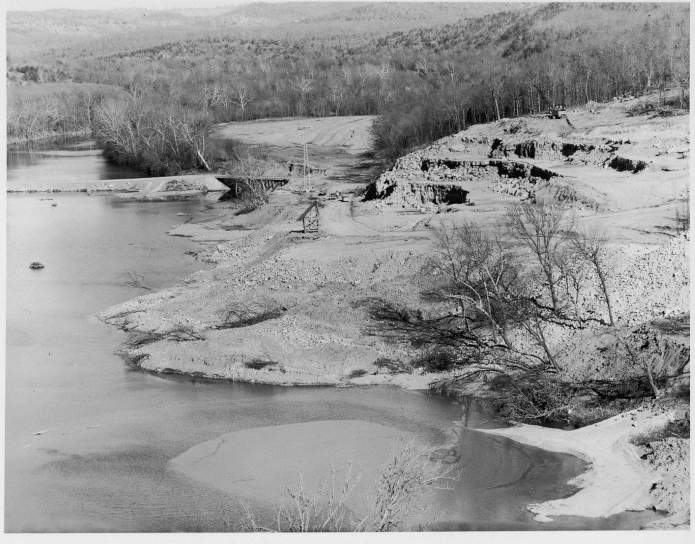
VIEW LOOKING NORTHEAST AND DOWNSTREAM FROM STA. 63+00, R7+00.

30 NOVEMBER 1955 TABLE ROCK TR-884

102

VIEW LOOKING TOWARD RT. ABUTMENT FROM THE OVERLOOK.

30 NOVEMBER 1955 TABLE ROCK TR-886

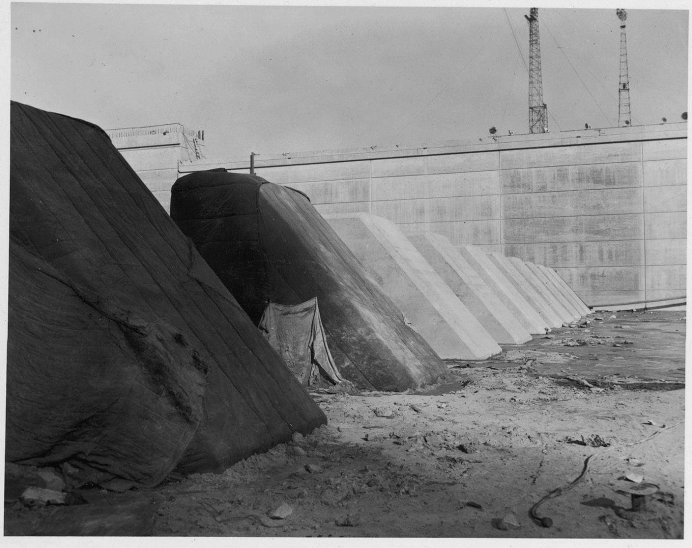


VIEW, LOOKING UPSTREAM, SHOWING ROCK FILL QUARRY.

1 DECEMBER 1955 TABLE ROCK TR-890

VIEW, LOOKING DOWNSTREAM, SHOWING NIGHT OPERATIONS IN MONOLITH 24.

6 DECEMBER 1955 TABLE ROCK TR-911

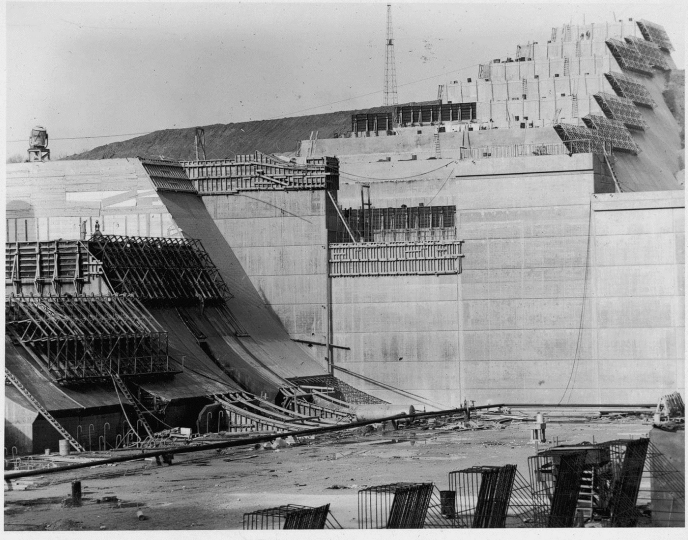


VIEW SHOWING COLD WEATHER PROTECTION ON BAFFLES IN STILLING BASIN.

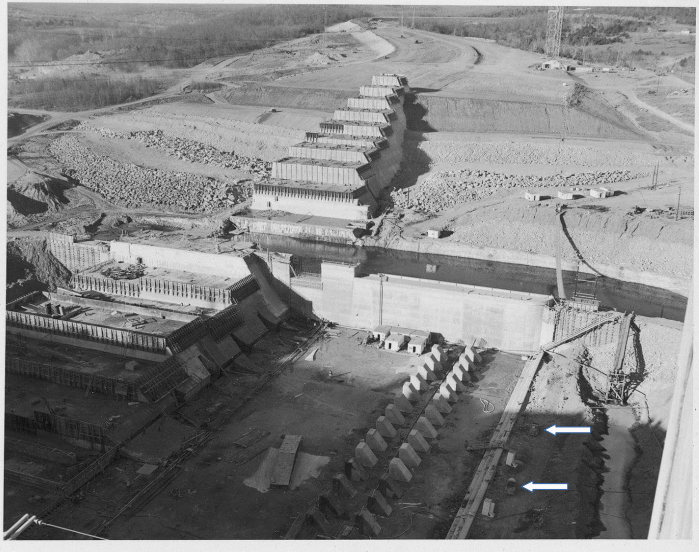
19 DECEMBER 1955 TABLE ROCK TR-941

VIEW SHOWING 4 cy. CABLE PLACING DOWNSTREAM FORM ON MONOLITH 17.

22 DECEMBER 1955 TABLE ROCK TR-951



VIEW, LOOKING NORTHWEST, SHOWING PANELS BEING APPLIED TO MASS CONCRETE FOR COLD WEATHER PROTECTION.
23 DECEMBER 1955 TABLE ROCK TR-966

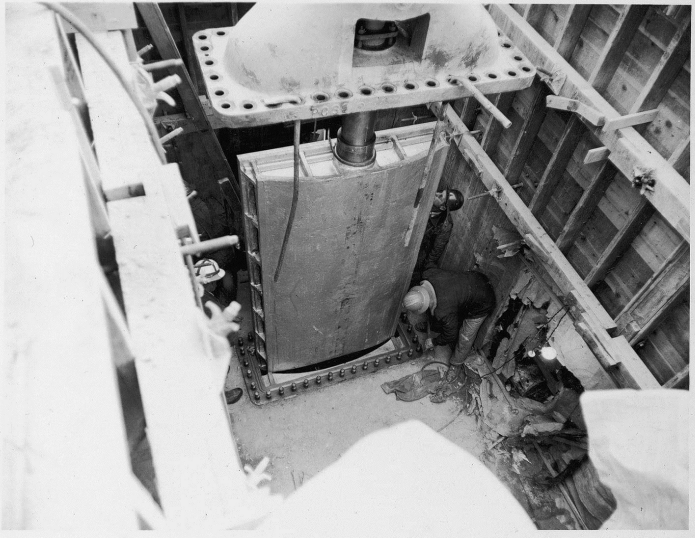


VIEW LOOKING TOWARD LEFT ABUTMENT FROM THE COOLING PLANT ON RT. ABUTMENT.
ARROWS POINT TO TRUCKS TO GIVE SCALE
2 JANUARY 1956 TABLE ROCK TR-980

114

View showing method of raising slide gate hoist cylinder with 8 cy. cable & mobile crane.

20 Feb 56 Table Rock File No. TR-1033



View showing slide gate assembly being lowered in place by 8 cy. cable.

20 Feb 56 Table Rock File No. TR-1036

View, looking upstream, showing collapsed 8 cy. tail tower.

27 Feb 56 Table Rock File No. TR-1045

View, looking downstream, showing Monolith 11 foundation.

20 Mar 56 Table Rock File No. TR-1068

View, looking downstream, showing Monolith 12 foundation.

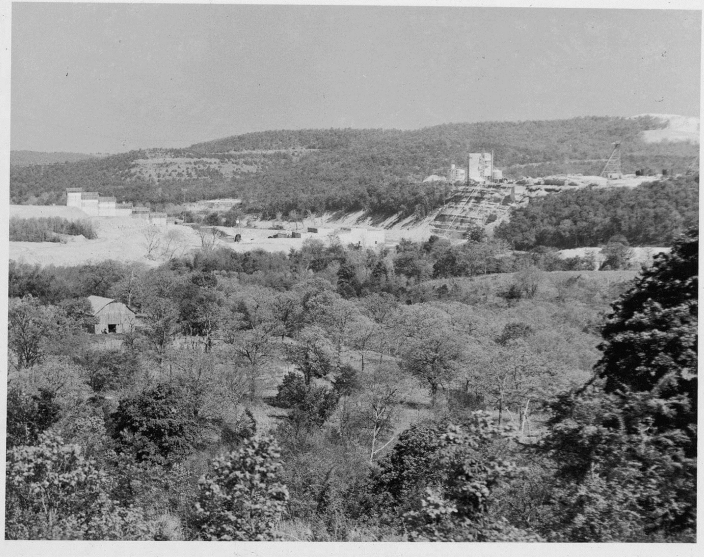
20 Apr 56 Table Rock File No. TR-1093

View, looking downstream, showing damaged penstocks.

26 Apr 56 Table Rock File No. TR-1100

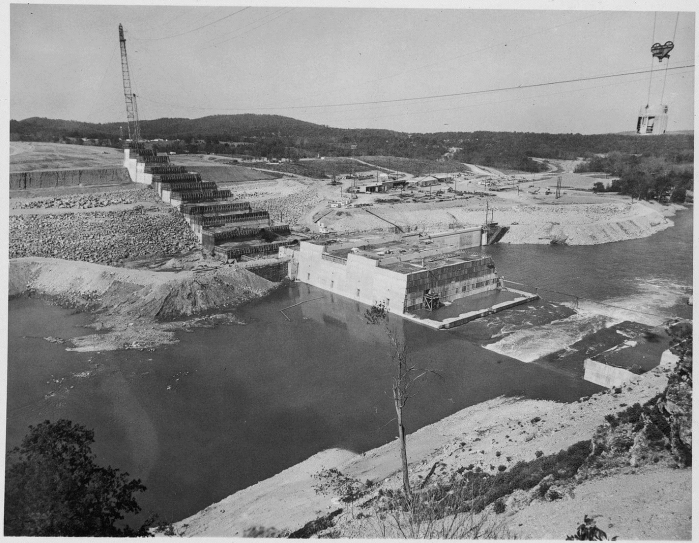
View, looking upstream, showing penstock monoliths and excavated tailrace.

3 May 56 Table Rock File No. TR-1102



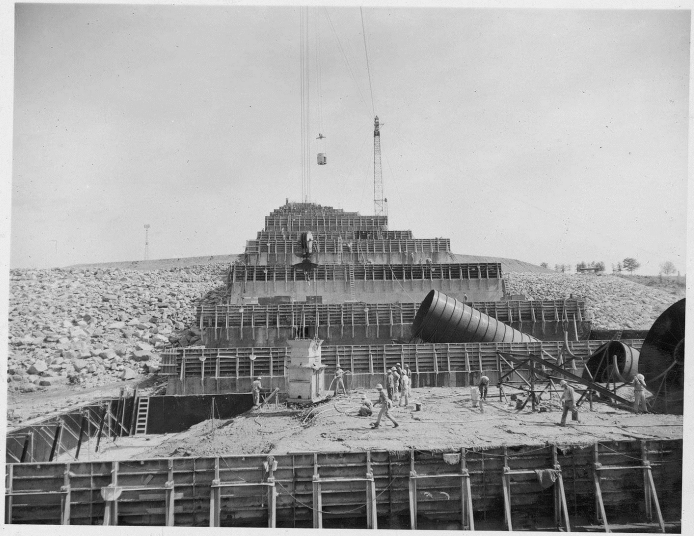
View, looking downstream, showing (L.toR.) earth embankment, concrete section, plant installation & Baird Mountain Quarry.

3 May 1956 Table Rock File No. TR-1103



View looking northeast and downstream from Station 63+00, Range 7+00.

3 May 1956 Table Rock File No. TR-1104



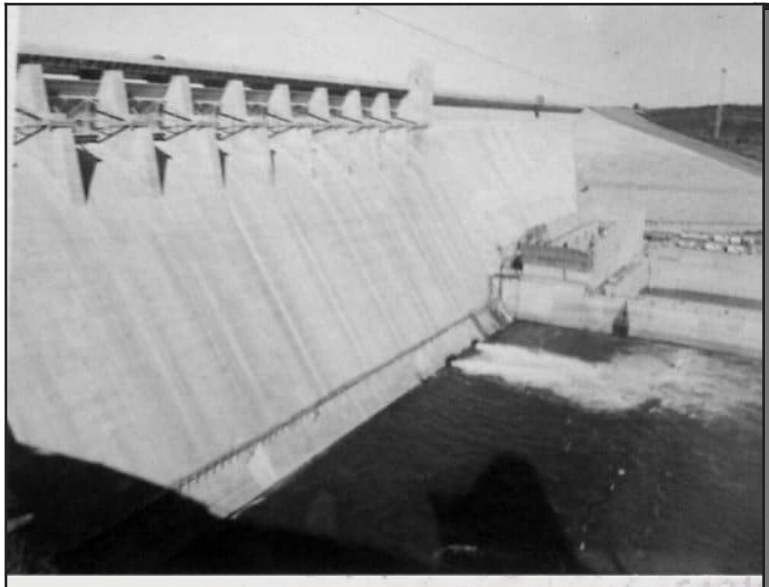
View, looking along axis of dam from Monolith 15, showing progress of Monoliths 1 thru 14.

11 May 1956 Table Rock File No. TR-1110

View, looking upstream, showing penstock monoliths and excavated tailrace.

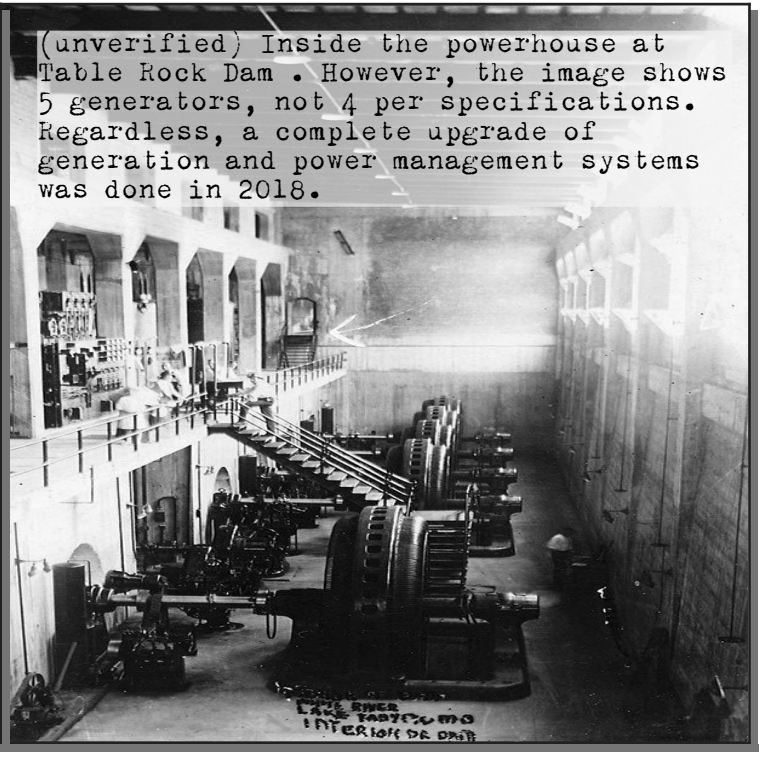
28 May 56 Table Rock File No. TR-1135

View showing 8 cy. cableway at Table Rock Dam lifting ferry push boat from lake for repairs.
Arrow pointing to boat
11 April 57 Table Rock File No. TR-1418



View looking toward left abutment from cooling plant on right abutment.

7 February 1958 Table Rock File No. TR-166



(unverified) Inside the powerhouse at Table Rock Dam . However, the image shows 5 generators, not 4 per specifications. Regardless, a complete upgrade of generation and power management systems was done in 2018.

THE DAM BOOK - BUILDING TABLE ROCK DAM

Table Rock Dam is 6,423 feet long and consists of a concrete section 1,602 feet long and two earth embankment sections having a length of 4,821 feet. The dam rises 252 feet above the riverbed, contains 1,230,000 cubic yards of concrete and 3,320,000 cubic yards of embankment. Four 18 foot diameter penstocks convey water to four 50,000 kilowatt generating units in the powerhouse. The first two units were ready for generation of power in June 1959, and installation of units three and four was complete in August 1961.

Table Rock Lake Pool History

(Yearly Min/Max)

Minimum		Maximum	
Date	Elevation	Date	Elevation
05/01/1959	836.90	12/31/1959	887.49
01/01/1960	887.49	05/01/1960	915.63
01/01/1961	906.78	**05/10/1961**	**932.51***
12/21/1962	897.19	01/01/1962	913.97
02/08/2011	906.13	**04/27/2011**	**935.46***

* Record Levels

See the following link for the full documented pool history
https://www.swl.usace.army.mil/Portals/50/docs/tablerocklake/Pool%20History%20-%20Table%20Rock%20.pdf

THE DAM BOOK - BUILDING TABLE ROCK DAM

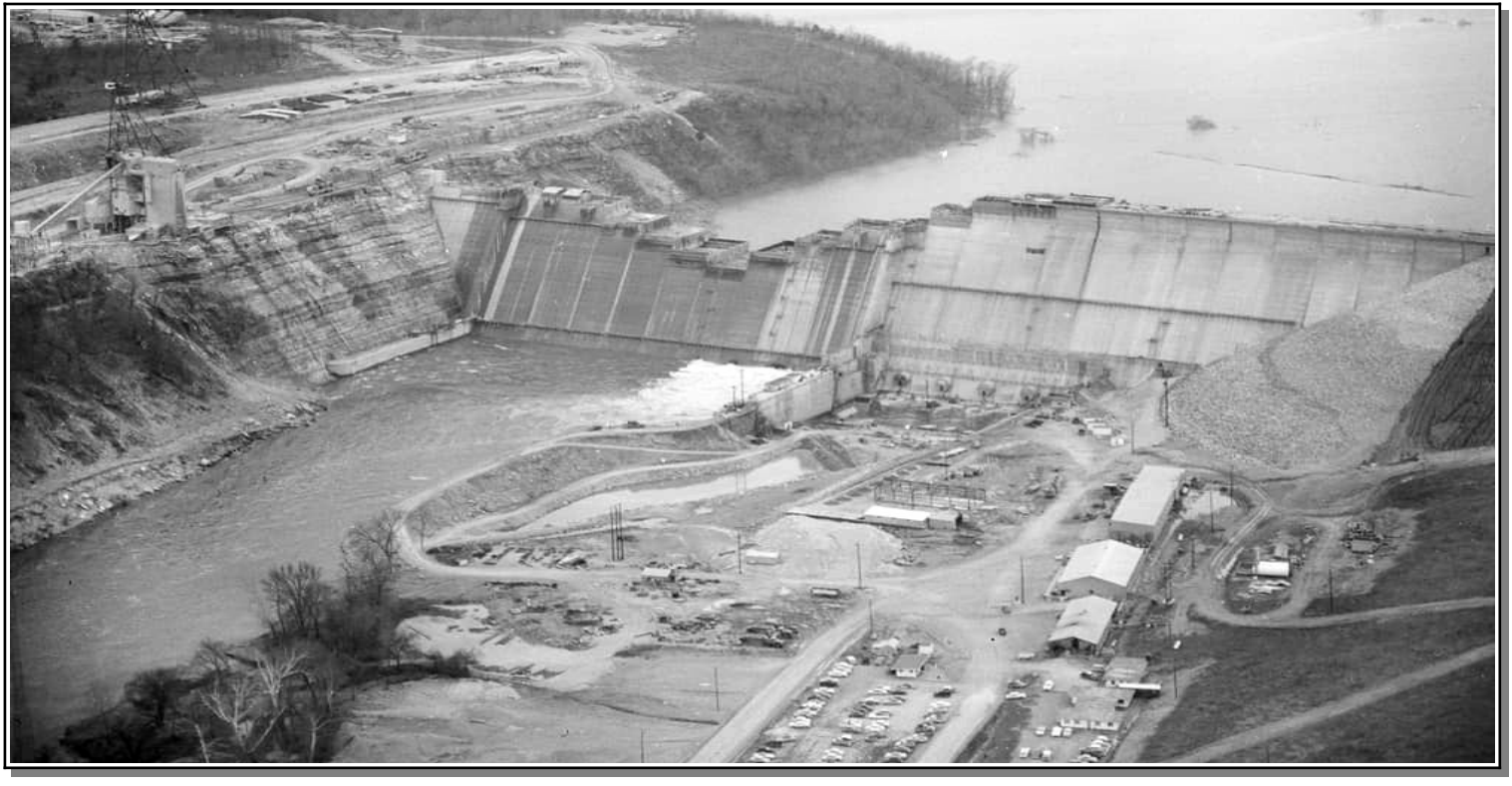
Table Rock Lake provides a storage capacity of 3,462,000 acre-feet, of which 760,000 are for flood-control and 2,702,000 are for generation of power. The flood control storage is equivalent to a depth of 3.5 inches of water over the entire contributing drainage area above the dam, 4020 square miles. At the top of flood control pool the lake has a surface area of 52,300 acres and a shoreline of 857 miles. The full conservation pool covers an area of 43,100 acres and has a shoreline of 745 miles.

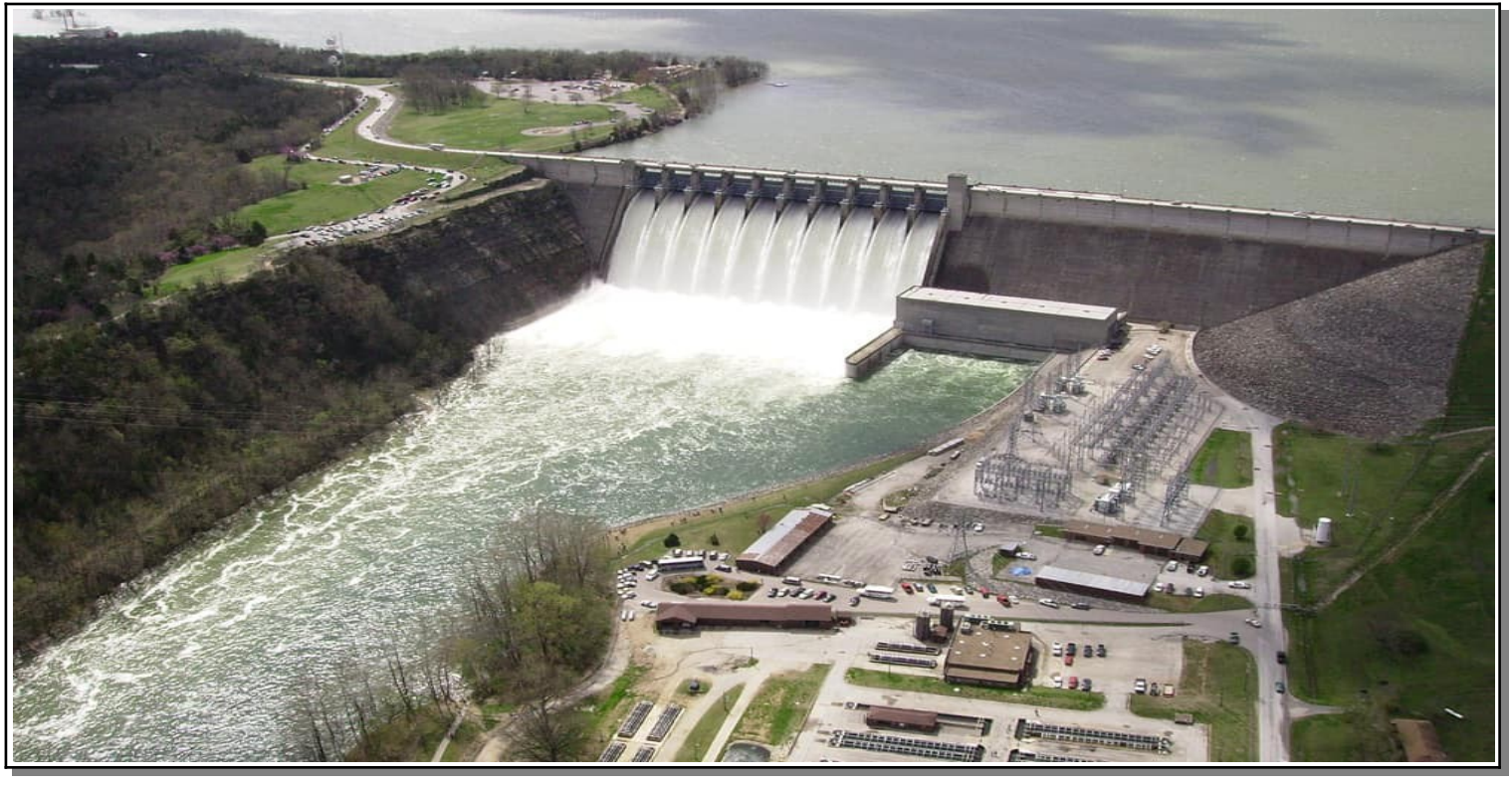
Since May 1957 flood reduction in the White River has resulted from the combined effect of the Table Rock, Bull Shoals, and Norfork Lakes, with Beaver Lake effecting regulation since 1964.

Table Rock Dam and Outlet Measurements
Length of dam- 6,423 feet (1,958 m)
Length of concrete section- 1,602 feet (488 m)
Maximum height of dam above stream bed- 252 feet (77 m)
Concrete in dam- 1,230,000 cubic yards (940,000 m3)
Earth in embankment- 3,320,000 cubic yards (2,540,000 m3)

Top of dam- 947 feet (289 m) above mean sea level
Spillway crest- 896 feet (273 m) above mean sea level

Number of generating units- 4
Rated capacity for each unit- 50,000 kilowatts
Station installed capacity- 200,000 kilowatts





This Dam Page Left Blank Intentionally

Why???

Because I always wanted to do that. I've seen other publications leave blank pages and could never figure out why. Maybe they ran out of things to say. Come to think of it however, it really isn't blank if they type in *This Page Left Blank Intentionally*. That's far from being blank. But if they didn't type that, it might leave you wondering, "Why is this dam page blank?" Maybe out of common courtesy they said that just to keep you from hanging on the question. Of course, they didn't explain WHY the page is left blank intentionally. What if they intentionally wanted to confuse you. That's not cool. I hope my blatant pursuit of selfish dam gratification hasn't confused you. I'm sorry if it has. We hope you enjoyed this dam book. And sorry for any dam spilling, drammatical or printing errors. Whee take these things sirius. Please mail your dam comments, dam corrections, and dam complaints to:

Brian Presley - c//o Boaters Lifeline, 166 Treasure Point Kimberling City, MO 65686


MISSOURI
ARKANSAS