DONNER CROSSINGS

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Preserving Railroad History along the Donner Pass Route

Path to Glory – The Jupiter at Promontory

PG&E's Lake Spaulding Railroads

We've all seen the photos. Two locomotives nose-to-nose, with crowds celebrating the completion of the nation's first transcontinental railroad in May 1869 at Promontory Summit. The Central Pacific's *Jupiter* can be seen at left in the photo below, while Union Pacific's #*119* is at right. But did you know *Jupiter* was not the intended locomotive for this event? See the story inside describing the sequence of events that led to this chance path to glory. *A. J. Russell Photo*

In 1912 and into the 1920's PG&E embarked on an ambitious project to build a larger dam at Lake Spaulding and increase the water storage for irrigation and power generation. The image at right shows the rugged countryside at the construction site, highlighting why PG&E employed both standard and narrow gauge railroads to aid in building the larger dam. *Photo from PG&E files*

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From the Editor:

There is often a back story behind well known events, but the back story can get lost or nearly forgotten with the passage of time. One such story is that of the Central Pacific locomotive *Jupiter* and how it happened to appear, literally by accident, at the golden spike ceremony at Promontory Summit in May 1869. A different locomotive was slated to bring Central Pacific President Leland Stanford and his party of dignitaries to the celebration, but fate intervened. Read the story of the accident that allowed the *Jupiter* to slip into its famous role, and the nearly forgotten locomotive that should have been there instead.

As with many research projects, this next feature started out to be a simple study of a small piece of Donner Route railroad history. PG&E decided to build a larger dam at what was then a very small Lake Spaulding, near Emigrant Gap. To make it happen heavy construction equipment and large quantities of materials needed to be transported to the construction site. This was in the early 1900's, when transportation options were few, but a solution was available if a spur railroad could be built to connect the site with nearby Southern Pacific tracks. Thus was born one of two railroads PG&E built along the Donner Route specifically to serve this ambitious project.

Enjoy these two peeks into local and regional railroad history. *Roger Staab, editor*

In This Issue:

You are invited to submit feature articles and/or photos for future issues of Donner Crossings. Please contact Roger Staab, email roger.staab@psrhs.org, or by mail at PSRHS, P.O. Box 1776, Colfax, CA 95713. Assistance is available to format your information or photos into final form for publication.

Path to Glory

How the Jupiter Ended Up at Promontory

We will soon be celebrating 150 years since the driving of the golden spike at Promontory Summit marking the completion of the nation's first transcontinental railroad. It seems an appropriate time to look back on a little known story of how the Central Pacific locomotive *Jupiter* found itself in the spotlight at the event.

As the time grew close for the joining of the rails to complete the nation's first transcontinental railroad at Promontory Summit, Utah Territory, the Central Pacific Railroad company put together a special train to carry CPRR President Leland Stanford's business car and a group of invited dignitaries to the celebration, slated for early May 1869. This special bound for Promontory followed the regular scheduled train out of Sacramento. But along the way an accident occurred that nearly derailed all the grandiose plans and did alter a small but significant portion of the story. The details can be gleaned by reviewing several articles and books that were published about this historic event.

In its May 5, 1869 edition, the *Sacramento Bee* reported:

"OFF FOR THE FRONT – At a quarter before seven o'clock this morning a locomotive having in tow the "Commissioner's Car" of the Central Pacific Railroad, left for the "front". There were on the car some ten or fifteen gentlemen, among them, ex-Gov. Stanford, Gen. Nottingham, of the Erie and Cleveland Railroad, Gen. Casement, of the Union Pacific Railroad, G. P. Seater, ex-Mayor of Cleveland, F. McCrellish, of the Alta, Judge Sanderson, C. T. Wheeler, and Edgar Mills. With the party went the celebrated tie, spike and hammer. As Governor Stanford placed his foot on the car platform just as the train was starting the crowd at the depot gave him three hearty cheers and a "tiger". Mr. Stanford took off his hat and in behalf of the Pacific Railroad and himself, bowed in acknowledgments. J. O'Leary, one of the proprietors of the *Bee*, started for the "front" on last Monday morning."
Note: This Sacramento Bee article was found in the Railroad and Locomotive Historical Society's Fall-Winter 2015 edition of Railroad History.

But all did not go smoothly on the journey. Dr. J.D.B. Stillman, personal doctor for Leland Stanford and his family and early business partner of Mark Hopkins, rode on the special train. His article "The Last Tie" in the July 1869 issue of *Overland Monthly and Out West Magazine* included these first-hand accounts:

"The regular passenger train from Sacramento starts at about six-o'clock in the morning, and we moved off soon after in a special one, consisting of the superintendent's car and a tender. The car was arranged with a kitchen, dining, bedroom, and parlor, with sleeping accommodations for ten persons; the tender was provided with water-tanks, for the greater part of our way was over regions where good water could not be obtained, refrigeration and stores for a protracted sojourn in the desert. …"

"Just before entering a tunnel, when the road slips in between the mountain and the river, we came near driving our last spike. Some Chinamen on the mountainside were cutting trees, and seeing the regular train pass, and knowing nothing of the special one, they probably thought it a fit time to run a log down the mountain. But whatever may have been their intention, the log landed on the railroad just before us – its length fifty feet and its greatest diameter three and a half feet – the smaller end rested on the track midway between the rails, and the other rested on the bank at an angle of about forty-five degrees. The short turns of the road prevented the threatening danger from being discovered until we were almost upon it; but the promptness of the engineer, and the lightness of the train, saved us from a catastrophe. The pilot *(or cowcatcher - ed.)* picked up the log, or did its best to do it, and went through bankruptcy; but the force of the blow was not lost, for the heavy frame of the engine tripped the log and landed it where there was just room for it, yet did not prevent it from clearing away the steps of the starboard side of the train from stem to stern. The only person injured – was one of our party who was on the engine, who, seeing what seemed an inevitable crash, jumped from the train. The force of the blow can be conceived from the fact that the log was broken through the middle, where it was at least three feet in diameter."

"It was near sundown when we reached the last crossing of the Truckee, where our crippled locomotive was sent into the hospital, and our cars were made fast to the regular train."

So where exactly did the accident occur, and what two locomotives figured in this last minute switch of players? We find the answer in a quote from the book, *The Governor – The Life and Legacy of Leland Stanford, A California Colossus, Volume One*, by Norman E. Tutorow, published by Arthur H. Clark Company in 2004. From the chapter 'Building the Central Pacific Railroad,' beginning on page 287:

"Stanford and his party barely escaped catastrophe as they raced toward Promontory Summit in a car built in the Central Pacific shops in Sacramento and known variously as the Commissioner's Car, the Director's Car, or the Charley Crocker Car."

"Some of "Crocker's Pets" almost disrupted the final events designed to celebrate the "work of giants." Chinese workmen, cutting timber on the mountains above the entrance to Tunnel No. 14 near the state line east of Truckee, saw the regular train pass but knew nothing of the special train with Stanford and others on board, drawn by the Antelope, following it. They skidded a log fifty feet long and forty-two inches in diameter down to the track below. Upon rounding a curve and seeing the log on the tracks, the *Antelope's* engineer slammed on the brakes but was unable to stop in time. The train struck the log, disabling the engine; the log scraped along the side of the train, taking the steps with it, and injuring one passenger …"

"A message was wired ahead to hold the regular train at Wadsworth until the special Stanford coach could be attached. This is how the Jupiter was present at the Promontory Summit ceremony instead of the Antelope."

So it was indeed "by accident" that *Jupiter*, not *Antelope*, appears in all those photos of the ceremony at Promontory Summit in May 1869, and in the golden spike re-enactments that take place each year.

Special thanks to Chuck Spinks for providing some of the reference material used in this report.

Jupiter – CPRR #60
Renumbered 1195 in 1891
Built by Schenectady 7/1868
In Service 3/20/1869
Sold to GVG&N 5/1894

CPRR #60 'Jupiter' at Promontory May 1869
A. J. Russell Photo

Antelope – CPRR #29
Renumbered 1192 in 1891
Built by McKay & Aldus 2/1867
In Service 8/14/1868
Scrapped 4/21/1900 at Sacramento

Locomotive data from Southern Pacific Steam Locomotive Compendium, by Diebert & Strapac.

CPRR #29 'Antelope'
Truckee Donner Railroad Society

Jupiter was a newer locomotive than *Antelope*, but *Antelope* was chosen to pull the special train to the Promontory event while *Jupiter* was assigned to regular scheduled service.

Antelope had been assigned the earlier honor of pulling the first through passenger train over Donner from Sacramento to Truckee and Reno on June 18, 1868 *(See Donner Crossings issue #7, Spring 2012)*. This event date contradicts the in-service date reported for *Antelope* by Diebert and Strapac.

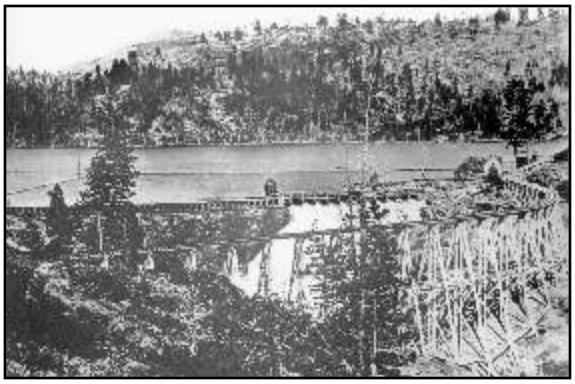
PG&E's Lake Spaulding Railroads
Standard Gauge and Narrow Gauge

In 1912 Pacific Gas & Electric Co. (PG&E) announced that a larger dam would be built at Lake Spaulding, greatly increasing water storage for irrigation and power generation. To help facilitate the dam construction, PG&E built a standard gauge railroad spur to the construction site, along with utilizing a narrow gauge logging railroad purchased from lumbermen Birce and Smart. This account describes how PG&E's railroads helped complete the construction on the Lake Spaulding Dam during the periods 1912-13 and 1916.

Note: Much of the detail and photos that follow were obtained from issues of PG&E's in-house Pacific Gas & Electric Magazine and Pacific Service Magazine. Some photos are from the PSRHS collection.

Birce and Smart Our story begins in the 1890's with a logging and lumber business operated by Birce and Smart near the much smaller 1892 version of Lake Spaulding. The company initially logged the area around the lake and floated the logs to their sawmill located near the south end of the small dam. There they turned logs into lumber which they hauled on oxen-drawn wagons to the Birce and Smart railroad siding located a couple of miles east of Emigrant Gap on the Central Pacific (later Southern Pacific) Railroad mainline.

In 1905 Birce and Smart built a narrow gauge logging railroad to replace the oxen-drawn wagons, and relocated its sawmill to the end of the SP siding. The logging railroad delivered logs to the sawmill where they were turned into lumber that was then shipped on the Southern Pacific Railroad. The logging railroad extended several miles beyond Lake Spaulding into virgin forest, crossing the Yuba River on a wood trestle located just downstream from the dam. (*San Francisco Chronicle, 5 Mar 1904)*



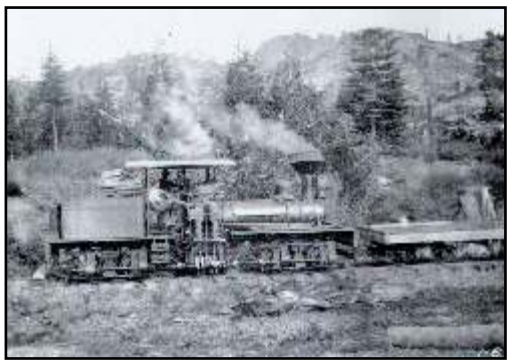
Birce and Smart's logging railroad and wood trestle that crossed the Yuba River just downstream from the 1892 Lake Spaulding Dam.

PG&E's Spaulding Dam 1912-13 PG&E was formed in the early 1900's from the merger of several area water systems. In 1905 the company acquired the assets of the South Yuba Water Company, a series of dams and canals including the small 1892 dam and reservoir known as Lake Spaulding that originally served the many mines on the western slope of the Sierra. PG&E almost immediately recognized the potential value of building a larger dam and reservoir at Spaulding to satisfy future markets for irrigation and power generation. The company began surveying for a potential site for the dam; however, the work was put on hold for several years due to a nationwide financial panic. Finally in 1912 PG&E presented its proposal for a new Lake Spaulding to the Railroad Commission who at that time had oversight over all public utilities in the state. With the commission's blessing, the project got underway later that year.

The site chosen for the new dam was about a mile downstream from the existing dam, at a point where the South Yuba River entered a v-shaped gorge, an ideal location for construction of a high dam that would create a large reservoir of stored water. The surrounding area is dotted with very rugged granite outcroppings, complicating the movement of construction materials and equipment to the dam site. The existing dam and the Birce and Smart narrow gauge railroad trestle would be inundated by the new lake.

For reasons that will soon be apparent, one of PG&E's first tasks was to build a standard gauge railroad line from the Smart siding to the site of the new dam. Prior to starting the project PG&E bought the Birce and Smart narrow gauge logging railroad and the sawmill. They used the narrow gauge line to clear trees and debris from the area around the existing lake that would be flooded by the new reservoir. Logs were transported to the reopened sawmill and converted to railroad ties and construction timbers. The narrow

gauge railroad was also used to transport materials via the wood trestle for constructing a spillway on the far side of the Yuba River, on what would become the northwest portion of the new reservoir.



At left is a portion of the standard gauge spur being built by PG&E to deliver equipment and materials to the dam construction site. At right is the narrow gauge Shay purchased from Birce and Smart and used by PG&E for moving supplies and clearing timber from the area to be flooded by the dam.

PG&E shipped large rock-crushing equipment on Southern Pacific tracks to the Smart spur on flat cars, then transported these same cars on the PG&E standard gauge spur to the dam site for unloading. No description has been found of the locomotive(s) used for movements to the construction site, but the PG&E spur was fairly steep in sections, likely requiring a geared standard gauge locomotive. PG&E's early plan was to crush local granite on-site and mix it with locally mined sand for making concrete for the dam. Further assessment though, showed that it might be more cost effective to import gravel from remote sites, especially after finding a supply of gravel already pre-mixed with the right amount of sand available at the Bear River near Colfax. Recognizing the potential market, Nevada County Narrow Gauge Railroad built a standard gauge spur from Colfax to the gravel quarry on the Bear River. (*See Donner Crossings issue #13, Spring 2018, for more details on this NCNG gravel spur*) Standard gauge gondolas were filled with gravel at the NCNG quarry, shipped from Colfax on SP tracks to Smart siding, then on the PG&E spur to the construction site where they were unloaded into storage cribs. PG&E ended up buying the bulk of its gravel needs for the 1912-13 construction from the NCNG gravel quarry. During peak construction gravel and cement deliveries to the Spaulding site averaged more than 3 trainloads per day with 20 cars per train.

The PG&E standard gauge spur was used to move large rock crushers (left) and huge check valves (right) to the construction site, as well as carloads of gravel & cement.

PG&E also transported other major pieces of equipment on their standard gauge spur, including large check valves that were installed in the discharge tunnel. The check valves controlled the amount of water released from the reservoir into the canal that fed the new Drum forebay and powerhouse downstream.

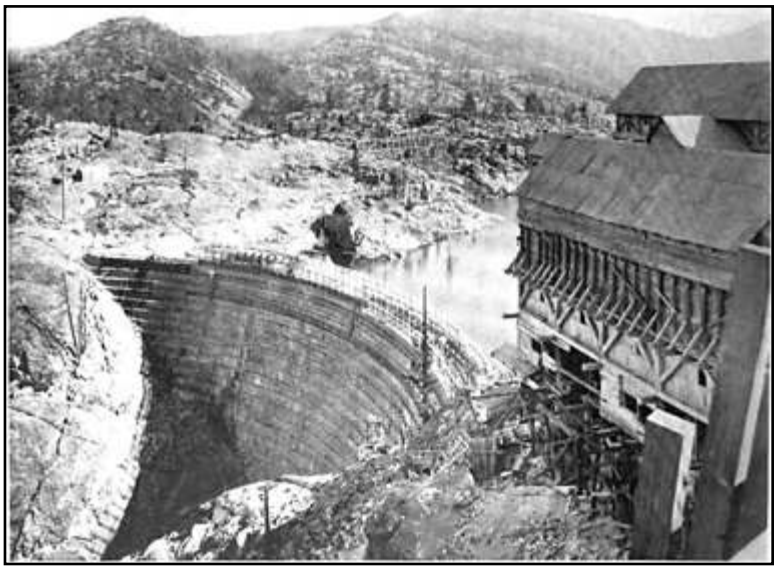
Concrete for the dam was mixed in a batch plant located above the dam on the south side of the ravine. The concrete was fed by gravity to the surface of the dam, and conveyors were used to deposit the concrete in the desired location for that pour.

Spaulding Dam nearing 225 feet high. The batch plant is at upper right. Conveyors on the dam distributed the concrete to desired pour locations.

The new Spaulding Dam was completed in November 1913. This interim version of the dam was 225 feet high, but plans were already in place to eventually increase its height to nearly 300 feet.

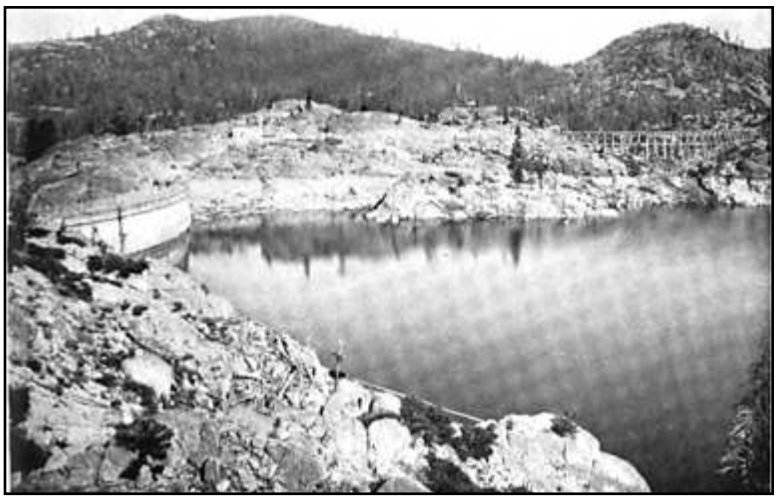
PG&E's Spaulding Dam 1916 The next target in PG&E's plans for Spaulding was to increase the height of the dam an additional 35 feet to 260 feet. The initial work in 1912-13 had been accomplished with PG&E workers under PG&E's direct supervision. For the 1916 project the company decided to contract the work out to Twohy Brothers, based in the Pacific Northwest. Twohy Brothers had experience and a proven track record in both major infrastructure projects and railroad construction.

PG&E had envisioned a two-phase approach. First the height of the dam would be raised, then materials would be transported across the dam to build a new spillway and three secondary dams at low spots along the north side of the reservoir. PG&E wanted to complete the work by the end of 1916, but the contract was not awarded until July. Knowing the potential severity of Sierra weather in the late fall, Twohy decided to instead pursue the two phases in parallel. That meant a method was needed for getting materials and equipment to the far side of the dam while the height of the dam was being raised. Twohy's solution was to build an overhead cableway that could transport materials and equipment across the gorge while construction was underway on the main dam.



The batch plant is in the foreground at right. Concrete pour forms and scaffolding can be seen on the top of the dam.

Twohy resurrected the existing standard gauge spur from Smart siding to the dam. It's not clear from the publications if the rails had been left in place or had to be re-laid. Twohy employed two standard gauge shay locomotives to move equipment and materials from the Smart spur to the construction site. This time, however, it was not cost-effective to buy and ship gravel from remote locations for the relatively small amounts needed for this phase, so crushers were brought in to crush gravel on-site. A narrow gauge locomotive, tracks and side-dump cars were used to move the gravel from the crushers to storage cribs near the batch plant, which was still on site from previous construction. The gravel was then mixed with local sand and fed into the batch plant. Concrete was gravity fed from the batch plant to the surface of the dam, but the increased dam height meant there was not enough vertical drop to distribute the concrete to the far reaches of the dam surface. Twohy resolved this problem by first building forms for the concrete pour, then building a scaffolding over the forms that supported two narrow gauge railroad tracks. Narrow gauge locomotives and side-dump cars distributed the concrete to the appropriate portions of the forms. Twohy did the pour in two passes. First a 19 foot pour was completed. The forms, scaffolding and tracks were then taken apart and reassembled for the remaining 16 foot pour.



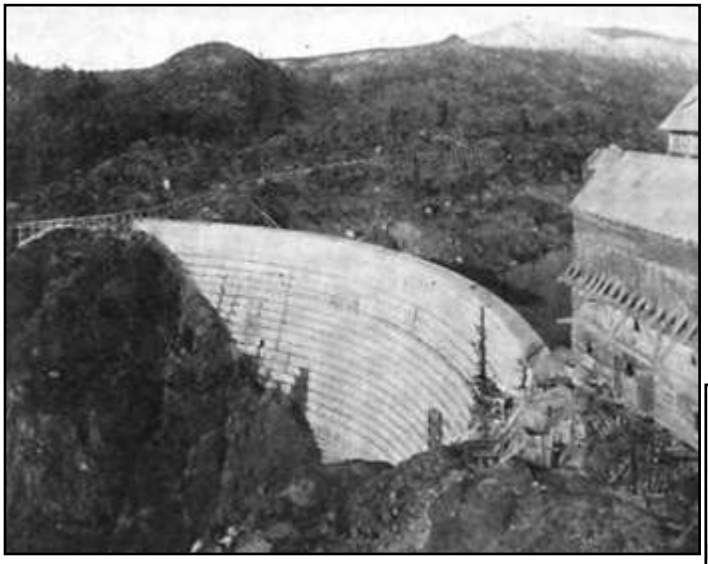
The narrow gauge railroad and 500 foot wood trestle can be seen beyond the dam and reservoir.

Meanwhile Twohy built a 3000-foot-long narrow gauge railroad on the far side of the dam, along what would become the north edge of the new reservoir. The line featured 3 wooden trestles including a curved trestle 500 feet long and 40 feet high. Because of the increased level of the reservoir after raising the height of the dam, several low areas on the north side of the reservoir had to be blocked with secondary dams.

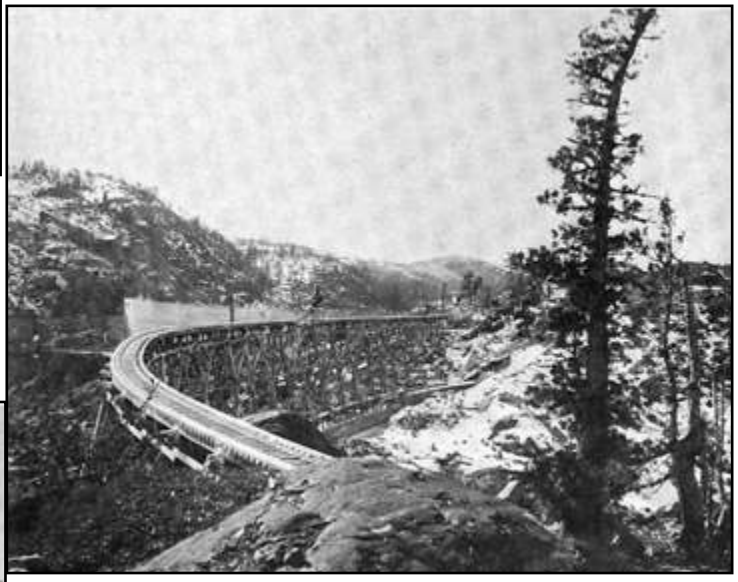
The first low area became the new spillway, while three others were blocked with small secondary dams. Concrete was mixed at the batch plant, then transferred in dump cars via the overhead cableway to the narrow gauge tracks on the far side of the dam. The cars were then transported on the narrow gauge tracks to the secondary dam locations using 19 ton and 14 ton dinkey locomotives. The furthermost dams 3, 4 and 5 were constructed using regular concrete pours, fed by 5 trains per hour of 3 concrete dump cars each. The final concrete pours were completed in December 1916, just prior to winter weather setting in.

PG&E's Spaulding Dam 1919 PG&E raised the height of the dam another 15 feet in 1919 to 275 feet. The concrete batch plant was reactivated for raising the main dam. Rather than employing a narrow gauge railroad to raise the height of the secondary dams, materials were floated across the reservoir on barges.

NOTE: Much more detail on railroad equipment and operations was found for the 1916 project than for the 1912-13 project, perhaps because the 1916 contractor also built railroads. PG&E's reports for the 1912-13 project did include brief mention of the railroads, but only in passing as one of several tools working in the background to accomplish the dam construction tasks.



Spaulding Dam was raised to a height of 260 feet in 1916. A portion of the narrow gauge railroad used in the construction of the secondary dams can be seen beyond the main dam.



This view shows the 500 foot long narrow gauge curved wood trestle looking back toward the main dam. The new spillway was constructed in the depression crossed by the trestle.

At the far end of the 3000 foot narrow gauge railroad three secondary dams were built to block low areas that were breached by the new reservoir height. Dam #3 increased the height of the old spillway. New dams 4 and 5 shown in this image were separated slightly by a ridge. When the main dam was raised to 275 feet in 1919, these two secondary dams became one.