The Big Creek Project Expansion

By 1915, it was time to start thinking about expanding the Big Creek Project. The Pacific Electric, operating over 868 miles of interurban track, and the Los Angeles Railway operating 355 miles of track, were using about 80% of the power generated by the Big Creek Project. So, they were nearly already at capacity. But, before any new construction could commence, PL&L needed to address some issues that had arisen.

The San Joaquin and Eastern Railroad was still in operation, although only barely by most accounts. Hardly any revenue was generated on a yearly basis since the "Initial Development" had concluded, and losses each year amounted to over $125,000. But PL&P was satisfied to maintain the status quo, and those losses were simply passed on as part of the costs of producing electricity. But the railroad's quick and somewhat shoddy construction was starting to show. Curves were too sharp, trestles were in danger from fires, and wear and tear on the equipment was causing a maintenance headache. So, an improvement program was established that would, over several years, replace the highest and most dangerous trestles with fill, straighten out the curves, lay heavier rail on the worst portions of the line, and improve the quality of the roadbed.

At the time, most railroads would try to attract tourists to their domain, and the SJ&E was no different. As the ATSF had done at the Grand Canyon, and the Union Pacific had done at Yellowstone, the SJ&E built a lodge at Huntington Lake to provide suitable lodging for tourists and the many dignitaries who would to travel to the incredibly scenic area. At the time, there was absolutely nothing above Cascada in the way of public tourist accommodations. The Huntington Lake Hotel Company was established as a subsidiary of the SJ&E, and their lodge was constructed at the west end of the

lake, near Dam 3. The lodge opened in July 1915, but only saw limited use for the first year. It was thought that it could be a wonderful snow resort during the winter, but no one except for one group from Fresno was interested in winter accommodations. So, it was operated as a summer only resort.

The lodge was built in the style of a Swiss Chalet, located about 500 feet from the lakeshore. The lodge was all electric, and was heated by electric heat! There were many row boats on the lake available for taking tourists on a leisurely journey.

With the lodge built and improvements on the railroad underway, it was time to begin thinking about expansion. The first idea was to raise the height of the three dams at Huntington Lake by 35 feet. As built, the lake was 4 ½ miles long and had a storage capacity of 53,000 acre feet of water. By raising the three dams, the storage capacity would be increased to almost 90,000 acre feet, nearly double in size.

Work began on Sept 1, 1916, using crews from the PL&P. Suddenly, the railroad sprang back to life and was being heavily used again. The sawmill was reactivated on the south side of the lake, and once again the incline was put back to work bringing supplies up the steep grade. Work continued around the clock, as it had done before. The mountains were teeming with workers again. The construction railroad at the lake was used in a unique way. Saddle tank locomotives rode along the top of the dam's wooden formwork, pulling a train of V shaped hopper cars that would tip to the sides, dropping their load of freshly mixed concrete down chutes to the intended area of the pour. This was fine in good weather. But, heavy winter snows late in the year stopped most of the work.

The railroad was in need of more equipment, too. They put in an order for more Shay locomotives, but Lima

Locomotive Works was unable to fill the orders, due to shortages brought on by WWI. A salesman for Climax Locomotives, another geared locomotive, made a strong pitch for the railroad to try one of their locomotives. A Climax has the driveshaft under the center of the locomotive instead of on the side like a Shay. Because of this, it is less likely to roll on its side when pulling hard around a curve or when on unstable roadbed. The center shaft is also unlikely to be fouled by snow on the sides of the track, which had been a problem for the Shays. The Climaxes could also out pull a Shay on the very tight curves. The SJ&E purchased two new Climaxes, which were put into service in 1917, and they were a Climax customer forever after.

Dam construction resumed in April 1917, and by October the dams were finished. But, while the dams were still under construction in May 1917, the PL&P merged with the Southern California Edison Company, its main competitor. While the PL&P was the larger of the two companies in physical assets at the time of the merger, the officers of the new company were mostly derived from the ranks of SCE. Henry Huntington, who nearly owned all of the PL&P by himself, was slowly pulling away from managing the PL&P, and was devoting more time and attention to art collecting. The officers of SCE were much more aggressive organizationally, headed by John B. Miller. The new company would have assets of over $75 million and a service population of 1,250,000 people in over 100 towns and cities.

John B. Miller became President of the new company, and George Ward, who had been the President of PL&P became the new vice-president. SCE needed additional electrical power even more than PL&P, so they embarked on an aggressive plan to expand. The ultimate expansion of the Big Creek Project had never been fully determined. But now there was thought that perhaps 20 powerhouses would be built in the area. SCE needed the railroad more than ever before if this level of expansion was to be realized.

WWI took its toll on the Big Creek Project, and not much happened throughout 1918. The railroad was still showing losses, even in 1919, but SCE was satisfied to maintain status quo. The roadbed maintenance program was continued. Thousands of ties were replaced, a warehouse and storeroom were built at Auberry, sidings were added, spurs were added, and plans were made for the purchase of more equipment in anticipation of the heavy work that would commence some day soon.

On July 30, 1919, the assets of the Fresno Flume and Lumber Company were purchased by SCE. Shaver Lake Lumber Mill, the Shaver Lake Logging Railroad, and Shaver Lake itself were all included as part of the purchase. This area along Stevenson Creek, would be the first part of a major system of tunnels, pipelines, dams, reservoirs, and powerhouses that would be added to the system.

The purchase of Shaver Lake was a win-win for SCE. Obviously, the lake would provide more water storage capacity, even considering that it was much smaller than its ultimate size. But equally important was the fact that Shaver Lake had a huge sawmill with its own logging railroad and abundant supplies of large trees nearby. To proceed with the expansion as planned, enormous amounts of lumber would be needed for construction.

The history of Shaver Lake is a good topic for another day's history report. But suffice to say that there had been logging going on in the Stevenson Creek area for many years. The lumber flume actually terminated at Clovis, not Fresno, and was responsible for the growth that created Clovis in the mid 1890's and later. The dam that created Shaver Lake was rockfill, about 40 feet high and 300 feet long, completed in 1893. The original Shaver Lake was about 5000 acre feet capacity…an overgrown logging pond really, and was situated at about 5275 feet in elevation. A huge

snowstorm in 1914 wrecked major portions of the flume. WWI had suspended operations at the mill, and most of the flume fell into disrepair. The mill area was abandoned and all activity ceased after 1914.

When SCE bought the property, they re-established the mill, and by 1920 Shaver Lake Lumber Company was again cutting nearby timber and hauling it by wagon to the SJ&E at Shaver Crossing. The flume was scrapped, but it was difficult to access in many places. Most of the flume was removed, but some portions remained intact into the 1960's and 70's. The Shaver Lake Lumber Company railroad was dismantled, and the two Shay locomotives were transferred to SCE ownership. They were assigned to the SJ&E, where they assisted in construction work.

A wooden flume and tunnel were constructed to carry water from Shaver Lake to Big Creek Tunnel #2, about three miles downhill. The flume carried the water 2500 feet from the dam to the tunnel. This tunnel intersected Tunnel 2 near where Tunnel 2 entered the penstocks before dropping down to Powerhouse 2. The additional water added to the system made it possible to build a new powerhouse at Powerhouse 2, called Powerhouse 2A. Eventually Shaver Lake would receive a much bigger dam, increasing its capacity to over 135,000 acre feet of water.

Below Powerhouse 2 and 2A a few miles, where Jose Creek dumps into the San Joaquin River, Powerhouse 3 was being built. A six mile long tunnel would connect it from uphill where Big Creek met the San Joaquin River. This project was a long term development and wasn't a high priority. But the power needs of Los Angeles increased, and a quicker solution was required. On June 1, 1920, all work was shifted from the Powerhouse 3 project to the Powerhouse 8 project.

Powerhouse 8 was located just a 700 vertical foot drop from Powerhouse 2 and 2A. Dam 5 was built at Powerhouse

2A, and a tunnel 5933 feet long sent water down to Powerhouse 8. All equipment for Powerhouse 8 was carried over yet a third incline. This incline was 10,800 feet long, running from the SJ&E mainline to Powerhouse 8. The incline grade was 50% at its steepest portion and dropped a total of 2470 feet. On August 13, 1921, Powerhouse 8 was put into service, only 90 days after the first concrete was poured!!!

Work immediately shifted back to Powerhouse 3. A fourth incline was constructed reach Powerhouse 3. The maximum grade was 45% and the incline was 6800 feet long. Dam 6 was created below Powerhouse 8 to provide water for Powerhouse 3. A 28,313 foot long tunnel, 21 feet in diameter was built between Dam 6 and Powerhouse 3. Powerhouse 3 went into service Sept. 30, 1923.

Are you confused yet about the numbering of the powerhouses? They don't follow chronological build order, position on the creek, or any reasonable pattern. The powerhouses were numbered according to when the operational permits were granted by the government.

SCE now turned their complete attention to what would be the biggest project of all…the Florence Lake Tunnel. Work on this project began in 1920, but now the full force of SCE builders could be brought to bear. Roads and camps had been built, and adits and other tunnel work would continue as weather allowed. But most of this project was at over 7000 feet in elevation, so it was covered in snow for half the year. As a result, the camps were isolated for as long as eight months out of the year. SCE hired an Alaskan dogsled team driven by Jerry Dwyer to haul mail and supplies to the various camps scattered throughout the back country. On Kaiser Pass Road above Huntington Lake, there is a monument expounding the bravery of Jerry Dwyer and his team of dogs, Whiskey, Babe, and Trim.

Built in 1925-26, Florence Lake Dam would impound the upper San Joaquin River, and deliver that water via the Florence Lake Tunnel through Portal Forebay, and then down to the east end of Huntington Lake. This would insure a year round supply of water moving through the system, even in the driest of years. Florence Lake Dam would be constructed as an arch dam, invented by John Eastwood the Fresno City engineer who first created the Big Creek Project. The Florence Lake Tunnel has a total length of 13 miles and is 15 feet in diameter. It was the largest water tunnel ever constructed at the time. Soon after its construction, it was renamed Ward Tunnel, after George Ward who was the construction director of the Big Creek Project, and would one day become the president of SCE. Ward Lake is located along the tunnel and is also named after him

An all electric railroad ran the length of the tunnel, providing access for equipment, materials, and workers. The most modern equipment and digging methods in the world were in use in the tunnel. Workers toiled seven days a week in three eight hour shifts. Hot meals were transported deep into the tunnel by the railroad, as transporting the miners back to the surface for meals would have cost several work hours.

In late 1925, construction began on a railroad branch line to deliver materials, equipment, and workers to the site of the new Shaver Lake Dam. The railroad ran from the SJ&E mainline at Dawn to the Shaver Lake Dam site, approximately 4.6 miles. This roadbed still exists and is called the Shaver to Dawn road. Construction of the dam itself began in May 1926, and was completed in October 1927.

Additional diversion dams were built on Mono Creek and Bear Creek to add to the supply of water in the Florence Lake Tunnel. Another tunnel was built between Dam 2 at Huntington Lake and Stevenson Creek above Shaver Lake,

beginning in November of 1925. Pitman Creek was diverted into this tunnel, as was the North Fork of Stevenson Creek. The tunnel then was impounded at Balsam Meadow Forebay Dam, into another tunnel headed downhill to Eastwood Power Station, and finally emptying into Shaver Lake at Stevenson Creek. This would add even more water to the system, and allowed more control over water supplies and storage. The water conduit system between Huntington and Shaver was completed in April 1928.

Somewhere along the line, The Big Creek Project was called the "hardest working water in the world" because it gets used to make power multiple times during its journey from the backcountry to Millerton Lake.

During the 1920's, SCE hired nearly every able bodied man who wanted work in Fresno, Los Angeles, and San Francisco. Work crews during the 1920's averaged about 5000 men during the peak periods, utilizing 32 camps for housing. Prospective employees were provided transportation on the SJ&E to Big Creek and points beyond. The operation required three barber shops, six dentists, and commissaries fit for an army. Housing was in wooden barracks with absolutely no privacy. Room and board was deducted form each worker's pay check.

By 1928, SCE was winding up its construction projects related to the Big Creek Project. The next phase of SCE hydroelectric construction would be financially hampered by The Great Depression, then by WWII, and then by the small recession after WWII. It wouldn't be until the early 1950's that Redinger Lake (1951), Edison Lake (1954), and Mammoth Pool (1958), and would join the SCE Big Creek Project hydro system.

The biggest loser in the completion of construction of the Big Creek Project was ultimately the SJ&E. During 1922 alone, the SJ&E hauled 225 tons of fresh meat, 893 tons of

potatoes, 3000 tons of other food, 5457 tons of petroleum, 28,674 tons of lumber, 11,730 tons of cement, and 2416 tons of explosives. In 1927, 101,000 tons were hauled up to Big Creek, including 41,771 tons of cement and 25,903 tons of pipe and iron. Nearly 4000 carloads of freight were hauled in this one year alone.

And then, silence. Once construction was complete, there was no real business. Trains ran only in tri weekly service, up hill on Monday, Wednesday, and Friday, and downhill on Tuesday, Thursday, and Saturday, with no service on Sundays. The Big Creek merchants were upset, but it was soon discovered that nearly all passengers ever arriving in Big Creek were SCE employees. As better roads were built, and trucks and buses became trustworthy, powerful, and common, the railroad became less and less useful. Passenger ridership quickly dropped off.

In 1930, SCE purchased the Fresno stage franchise of W.R. Miles, and suddenly the railroad was actually in the bus and trucking business. Freight trains continued for a while on a two a week schedule, then down to one a week. The Huntington Lake Lodge, which had never really made any money, closed in 1931 further harming railroad ridership figures. The railroad lost $111,041 in 1932, and the bus company was barely breaking even.

The railroad was offered to the Southern Pacific, but they didn't want it. A group of bay area scrap dealers bought the entire railroad in 1933, and they began wrecking the railroad at once. They auctioned off what they could at Auberry on October 23, 1933. By August 1935 the wrecking operation was completed. The stage line was sold to Fortiers of Fresno, who continued the service using chain drive Mack trucks.

Today, if you know where to look for it, you can still find the roadbed of the SJ&E mainline between El Prado and

Auberry. Above Auberry it becomes Jose Basin Road, and Old Railroad Grade Road. A few miles below Big Creek it becomes impassible. This was the most hazardous portion of the line, and often had rockslides and washouts. Nosing around any of the lakes you can find evidence of the construction camps and earthworks.

There have been consistent rumors about locomotives and other equipment being left in Huntington Lake when construction was completed. Shaver Lake still has the old dam and the remains of the sawmill, its boiler still in place, in the bottom of the lake about 90 feet deep. The remains of the old steamship, The Michigan, are still there, too, in about 75 feet of water behind the dam.

Huntington Lake also contains an interesting bit of history. On December 6, 1943, a B24 Liberator bomber left hammer Field in Fresno looking for another missing bomber that had been presumed crashed. The Fresno B24 developed some kind of hydraulic failure, and attempted to land on what appeared to be a large snow covered meadow at about 7000 feet elevation. Unfortunately, the snow covered meadow was actually frozen Huntington Lake. The bomber crashed through the snow and ice, and sank. Six airmen died that day.

The lake is fairly deep where the bomber crashed, and the plane was not found until 1955 when the water was lowered to do renovation work on the dam. The tail and other parts of the bomber were visible as the water level reached its lowest point. The county coroner came and collected the bodies of the airmen, according to witnesses. One man's parents were also present.

The construction company attempted to remove the bomber from the lake by attaching a large cable to it and pulling it out with a Caterpillar tractor. Sadly, the plane hung up on some rocks, but the Cat kept pulling. It turned the

plane over, breaking off a wing in the process. It also bent the twin tail section.

According to "experts" all this damage happened when the plane hit the water. But according to Louis Soffell, who was an employee of the construction company working on the dam, and an eyewitness to the retrieval attempt, it was the Cat, not the crash, that broke off the wing and bent the tail.

In the early 1980s another attempt was made to salvage the bomber. But it was only moderately successful, removing the engines and not much else.