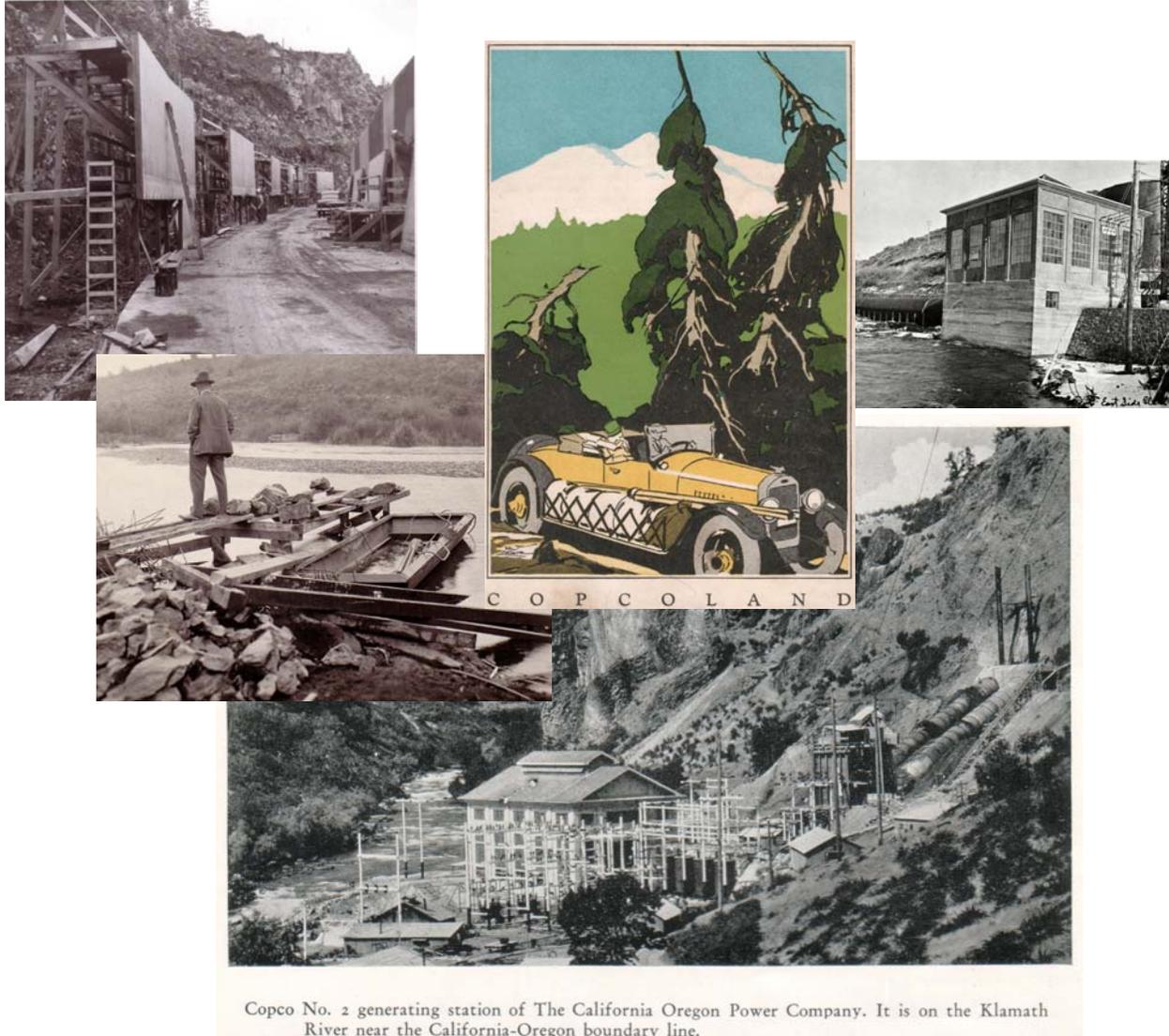


# KLAMATH HYDROELECTRIC PROJECT

FERC No. 2082

## HISTORIC CONTEXT STATEMENT

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for PacifiCorp  
Portland, Oregon

Prepared by George Kramer, M.S., HP  
Preservation Specialist  
under contract for CH2M-Hill, Corvallis  
June 2003



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HYDROELECTRIC  
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**FEDERAL ENERGY REGULATORY COMMISSION  
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**GEORGE KRAMER, M.S. HP  
PRESERVATION SPECIALIST  
ASHLAND, OR**

JUNE 2003

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## **INTRODUCTION:**

The following historic context statement documents the significant development of hydroelectric generation facilities along the Klamath River and its tributaries in Klamath County, Oregon and Siskiyou County, California, beginning in the early 1890s. Today, owned by Portland, Oregon-based PacifiCorp, the Klamath Hydroelectric Project consists of seven generation facilities and numerous related resources that operate under Federal Energy Regulatory Commission License No. 2082.

A historic context statement is by nature both focused and something of an overview. Intended solely to provide background information for PacifiCorp and its contractors in conducting a review of potential historic significance as required under Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800 et seq), this document traces the development of the components of the Klamath Hydroelectric Project from the earliest history of electrical generation in the region to the completion of Iron Gate Dam in 1962. At the same time, to assist in understanding the impact of the project and the forces in place during its development, a brief analysis of the social, economic, and industrial history of the southern Oregon and northern California Klamath-Siskiyou County region is also provided. These latter sections make no attempt to fully cover the colorful history that has characterized the Klamath Basin for the past 100 years but rather to relate its development to the availability, and ultimately the need, for electric power that was addressed by PacifiCorp and its fifty-plus predecessor entities, each, in one way or another, connected with the development of electric generation facilities on the Klamath River.

This study was commissioned by PacifiCorp as an element in its Federal Energy Regulatory Commission relicensing process for the Klamath Hydroelectric Project. It has been prepared under contract to CH2M-Hill by George Kramer, M.S., a cultural resource historian with extensive background in the southern Oregon/northern California region and the history of the hydroelectric industry in the greater west. Preliminary fieldwork was undertaken in Fall 2002 and the majority of this document was drafted in Spring of 2003.

Archival materials at the Siskiyou County Historical Society, the Southern Oregon Historical Society and in the possession of Margo Boyle Collins and the late Gertrude Boyle Drew provided substantial background materials. The extensive materials related to Copco and the Siskiyou Electric Light and Power Company, now part of the PacifiCorp Archive in Portland, served as the primary source of information on the development and operation of the Klamath Hydroelectric Project in the first six decades of the 20<sup>th</sup> century.

## **PART 1.0      HISTORIC OVERVIEW**

*The history of southern Oregon and northern California is closely linked with that of the California Oregon Power Company. This company, with home offices in at Medford...serves this area, extending 275 miles in length and 100 miles in width, embracing 54 cities and communities*

*Oregon Journal, 4-June-1939*

### **1.1      GEOGRAPHIC BOUNDARIES**

The Klamath Hydroelectric Project consists of a series of seven hydroelectric generation facilities and the various diversion dams, support structures, linear elements such as transmission lines, flumes, tunnels and other related resources that are located along the Klamath River and its tributaries in Klamath County, Oregon and Siskiyou County, California. The Project Boundary begins at the Link River Dam, in Klamath Falls, Oregon and continues in a roughly southwesterly direction following the Klamath River through the unincorporated community of Keno, Oregon. Crossing the Oregon-California border, the river, and the project, continues through the rugged mountain canyons to the hydro-related developments at Copco 1, Copco 2, John Boyle (formerly Big Bend) and then finally Iron Gate Dam, the end of the project. The Fall Creek Powerhouse is located on Fall Creek, a tributary to the Klamath, just north of the Copco 2 development. This sparsely inhabited country has been intrinsically connected to the development of the Klamath Hydroelectric Project for the past 90+ years. The geographic boundary for the context, therefore, is coincident with the Klamath Hydroelectric Project boundary as defined by Federal Energy Regulatory Commission [FERC] License No. 2082.

### **1.2      TEMPORAL BOUNDARIES — 1902-1958**

The historic development of hydroelectricity within the Klamath River region began in 1891 with pioneer developments in Yreka, followed shortly by those in Klamath Falls. As these small and earlier plants were serially upgraded and eventually replaced, the oldest standing facilities remaining in the project date from 1902-1903 and the development of the Fall Creek Power Plant. Standard National Register evaluation would typically establish a 50-year requirement for consideration of potential historic significance. For the Klamath Project, based upon the renewal period under the present FERC operation license which lasts until 2006, the temporal boundary would be 1956. However, given the particular history of the generation facilities that constitute the Klamath Project today, which were initially envisioned as a river-wide system by 1911, the temporal boundaries are extended to 1958, so as to include the development of the Big Bend Hydroelectric Plant (now John Boyle) and its related structures, all of which will meet the so-called 50-year rule within two years of the new license period. The Boyle project, envisioned as an original element in the system, represent the first of Copco's post-war expansions of the Klamath Project, and were built in response to the growth in demand and population that characterized the service area during that period. Iron Gate Dam was completed in 1962, after the end of the Copco period.

**1.3 COPCOLAND, IN THE “STATE OF JEFFERSON”**

The Klamath Hydroelectric Project is located within a two-county, two-state region that straddles the Oregon-California border. Klamath County and the city of Klamath Falls, in southern Oregon, and the area surrounding Yreka in northern Siskiyou County, California have long been joined by a range of interests, economic ties, and inter-related concerns that ignore the geopolitical boundary that places the two areas under the jurisdiction of different state governments. Historically, especially during the mid-19<sup>th</sup>

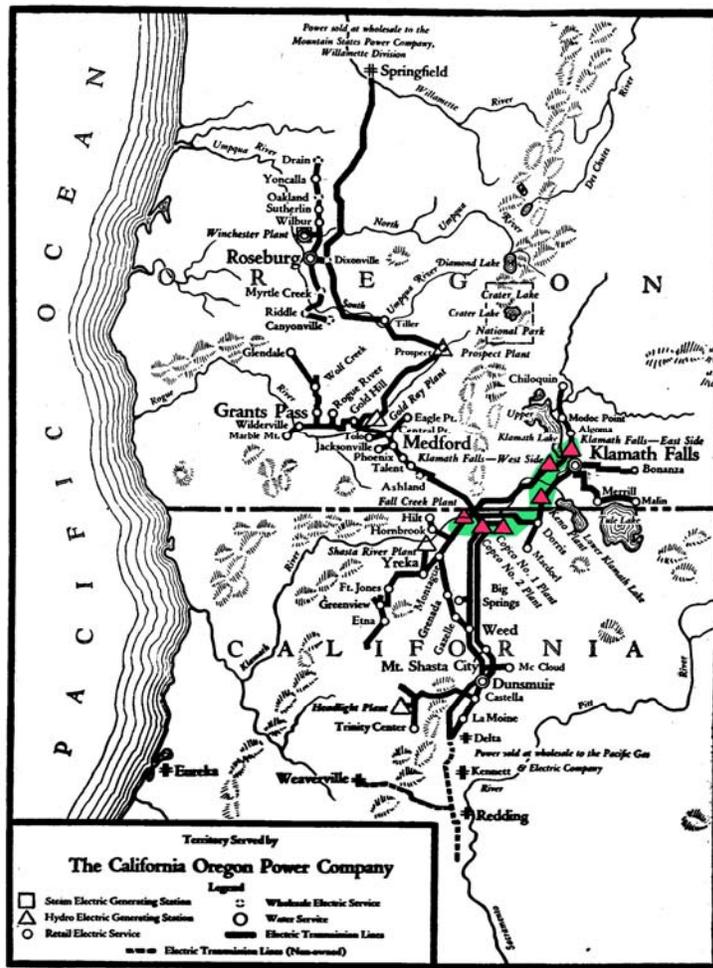


Figure 1: “Copoland” 1926, showing the Klamath River facilities then in operation (Source; *The Volt Annual*, Dec 1926, annotated)

century settlement period, Klamath and Siskiyou counties, along with other nearby areas, promoted serious effort toward secession from their respective states to create a new unified entity, long dubbed the “State of Jefferson,” that reflects these shared ties.

The concept of a “State of Jefferson” was first formally revealed in 1852 when a bill was introduced in the California State Legislature meeting at Vallejo. This

bill died in committee and the proposal was never acted upon. The issue, however, was far from over (Rock, 1998).

Various other attempts at formation of the State of Jefferson continued through the late 19<sup>th</sup> century, coupled with California-led efforts to create a state named “Shasta” and southern Oregonian-led efforts to create a state named Siskiyou, which had a abortive start in 1909. The most recent attempt to form the State of Jefferson, in 1941, was based upon a joint Oregon-California effort that stemmed at root from frustration over the poor roads in the area and the feeling that disinterest from Salem and Sacramento was the primary cause. Garnering national coverage after the Yreka Chamber of Commerce voted to “investigate the possibility of forming a new state” on November 18, 1941, the secession movement benefited greatly from coverage in the San Francisco Chronicle, who sent Stanton Delaplane, then a young reporter, north to cover the action<sup>1</sup>.



With the development of the California-Oregon Power Company and its successors as the dominant provider of electric power throughout almost all of the State of Jefferson the area was also often known as “Copcoland.” As a locally-based corporation that maintained a very visible, and influential, position throughout its service area, with local leaders on its board and in its employ, Copco was typical of the almost paternalistic corporate mentality of this period in power generation. Advertising materials produced by the company included a monthly publication entitled *The Volt* and the Copco Current Event Newsreels, produced by company employee Horace Bromley between 1925 and 1936. The newsreels documented life and important events throughout the service area and supported Copco’s role as a unifying presence throughout its bi-state, multi-county service area. “[T]he Copco films enjoyed immense popularity and were much in demand for viewing at gatherings of all sorts” (Alley, 1998:26). As described in Section 2, at the various dedication ceremonies for its plants, Copco developments were applauded by elected officials and dignitaries from both Oregon and California, with pennants or flags representing not only the two states but each of the counties within the Copcoland service area.

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<sup>1</sup> The 1941 effort reached a crescendo when partisans blockades US Highway 99 at the entrance to the new “State” and offered passports to motorists passing through. This publicity stunt, while successful, was poorly timed in early December and was soon pushed off the front page by the bombing of Pearl Harbor and the U.S. entry in WWII. Today the “State of Jefferson” survives as a local marketing vehicle, with parades in Klamath County and various local businesses that serve the region incorporating the concept into their name. The most prominent of these is the National Public Radio affiliate at Southern Oregon University, dubbed Jefferson Public Radio, which broadcasts throughout the entire area, from Lakeview to the coast and from Redding to Roseburg.

### 1.3.1 KLAMATH COUNTY, OREGON

The Oregon Legislature created Klamath County by partition from Lake County, to the east, in October 1882. With 6,135 square miles, Klamath is the fourth largest county in the state and, in area, is slightly larger than Connecticut.

Klamath County is a series of broad level basins encased by high mountain ranges...Lands in the basins are fertile and the soil is deep. The mountain streams furnish abundant water for irrigation (State of Oregon, 1915:176).

Klamath's "broad level basins," former lake beds, are fed with water from several large lakes, particularly in the mountainous northern portion of the county where Crater Lake, in Oregon's only National Park, is located. Upper Klamath Lake, flows through the Link River into Lake Ewauna, and ultimately into the Klamath River. Upper Klamath Lake, with a surface acreage of 58,922 acres, is the largest lake in Oregon. First settled by Euro-Americans in the mid-19<sup>th</sup> century, Klamath County developed an economy based on ranching and agriculture and eventually became one of the largest timber-producing counties in the nation. The county's major settlements began surrounding Fort Klamath and the Klamath Indian Reservation in the mid-19<sup>th</sup> century.

To the south of the reservation, Linkville was established on the shores of Lake Ewauna in 1867 by George Nurse and soon grew to become the principal town in the region. Linkville was named the county seat with the creation of Klamath County in 1882 and by 1893 town leaders had come to the conclusion that "...the connotation of the name Linkville was as a small town. A new charter in 1893 shows Klamath Falls was adopted as the new name to *show nearness of water power...*" (KCHS, 1984:2, emphasis added). While the population of Klamath County grew more than 60% between 1890 and 1900, from 2,444 to 3,970, the county still remained largely rural, with a sparsely populated series of ranches and timber camps surrounding Klamath Falls (State of Oregon, 1915:143).

### 1.3.2 SISKIYOU COUNTY, CALIFORNIA

Extending from the ridge that lies between the Salmon and Trinity rivers on the west, the lava beds on the east, and from the Sacramento divide to the Siskiyou mountains on the north, the county of Siskiyou contains a total area of over three thousand square miles. It is essentially a region of mountains (Wells, 1881:28)

First settled following gold strikes in the early 1850s, Siskiyou County was formed by the California Legislature in 1852 and the mining camp of Yreka was designated as the county seat (Wells, 1881:64). Yreka City, as it was first known, developed quickly and became an important trading center and hub for the surrounding region. Incorporated in 1857, Yreka, remains the only town of any size in the county's 6,287 square mile territory, fifth largest in California.

Economically tied to the Rogue River Valley in southern Oregon by first the Oregon-California wagon road, then an established stage line, and after 1887 by the Southern Pacific

Railroad, Siskiyou County remained significantly isolated from the population centers of Sacramento and San Francisco and naturally gravitated towards the more populous communities to its north, including Ashland and Medford in Oregon. Linked by the river to Klamath Falls, these two growing, if isolated, resource-rich communities would share similar development and interests during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, with regular reports of business and personal doings in their respective newspapers regarding progress in the region.

#### **1.4 REGIONAL ECONOMIC AND INDUSTRIAL DEVELOPMENT**

Although settled in the mid-1850s and characterized by ranching and early timber developments throughout the 1860s and 1870s, Klamath County remained largely a huge untapped forest in its northern mountainous regions and under-developed wheat or ranching uses in the broad river bottoms that characterize much of its southern portions. Klamath was at this time what was considered an “interior county,” meaning one largely isolated by its lack of a railroad or other easy transport routes. As a result Klamath’s timber and agricultural riches saw only limited export, inhibiting economic growth. To grow Klamath would require ready transport to distant markets and, as would become readily apparent by late 19<sup>th</sup> century, more water, and electricity.<sup>2</sup>

Klamath’s river bottoms offered fertile soil but the limited rainfall made irrigation a must. As early as 1878 a group of residents formed a company called the Linkville Water Ditch Company, eventually providing controlled water to some 4000 acres (KCHS, 1984:23). It was a start. Subsequent efforts such as the Adams Canal and the Van Brimmer Ditch had only limited success, even after 1891 when electricity first became available to power improved pumps to augment gravity fed canals.

The forests of this country lead natural resources and are the source of great future wealth and industrial activity. Irrigation has more than doubled the past year and has worked wonders in transforming miles of sagebrush plains into fields of luxuriant alfalfa and grain (*Oregonian*, 1-January-1902).

Interest in irrigation, and more specifically “reclamation,” took on a new fervor with President Theodore Roosevelt’s signing of the Reclamation Act in 1902. In 1903 government engineers John T. Whistler and H. E. Green toured the Klamath Basin, looking for potential lands to develop into irrigated farms under the new act.

They found Klamath Falls to be a frontier town of 450 residents, isolated, with few roads, no railroads, supported by a few ranches, some irrigated farm land and a struggling timber industry...the basin floors were level and appeared to be very adaptable to irrigation...(KCHS, 1984:19).

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<sup>2</sup> Klamath County had a rather extensive network of ship transport plying Upper Klamath Lake but, obviously, such a system was of little utility in transporting goods outside the region. Horses, then the county’s major “export” were sent over the mountains to the Rogue River Valley for sale but the barrier of the Cascade Mountains generally limited any other sort of shipments.



Figure 2: Headgates of the Klamath Irrigation Canal, Link River, c1910  
(Source: Postcard, Author's Collection)

Soon petitions were sent encouraging a government role in irrigation and by 1905 Secretary of the Interior E. A. Hitchcock authorized the “Klamath Project,” the twelfth in the nation under the 1902 Reclamation Act. Subject to a complicated series of development and legal issues that still characterize this irrigation today, the Klamath Project and its various related developments would ultimately provide water to more than 200,000 acres in the Klamath Basin, allowing major agricultural development in both ranching and farming that continue to form an important element in the regional economy. The growth of irrigation, which would aide the agricultural community, brought with it a huge demand for increased electricity.

And there will soon be another immense help to Klamath county, which will build it up and make it one of the greatest counties in the state, for the enterprise of using electrical power for irrigation purposes. This is so easy to be done, the benefit so great, and the cost so little, that is cannot fail to meet with the approval of every citizen...(*Klamath Evening Herald*, 8-August-1901, 3:1)

The first “immense help” referred to in the above portion of an editorial entitled “Railroads and Irrigation” was the coming end of Klamath’s lamentable status as an “interior county.” By 1900, drawn by the seemingly endless forests of the northern portion of the county, the Klamath-Siskiyou region had begun to attract well-financed Midwestern lumbermen such as Weyerhaeuser, Yawkey and others to compliment its earlier locally-funded and generally smaller scale, operations. Such firms were, in particular, interested in the lands of the

Klamath Indian Reservation which alone held one of the largest stands of timber in the country. “With the opening of Oregon and California’s untouched timber lands, [the large companies] were quick to move in and secure all available timber land at a very early date” (Helfrich, 1980:26). Largely as the result of large scale timber development, and the steady freight it would generate, Klamath Falls was soon the focus of fierce interest from several competing rail lines.

Between 1890 and 1931 Klamath Falls went from the unfortunate position of a town no railroad would serve to the agreeable status of a railroad “hub” — served by six lines radiating out in different directions. By no coincidence, these were also the years that saw Klamath Falls emerge as one of the major lumber-producing centers in the nation (Tonsfeldt, 1989:10).

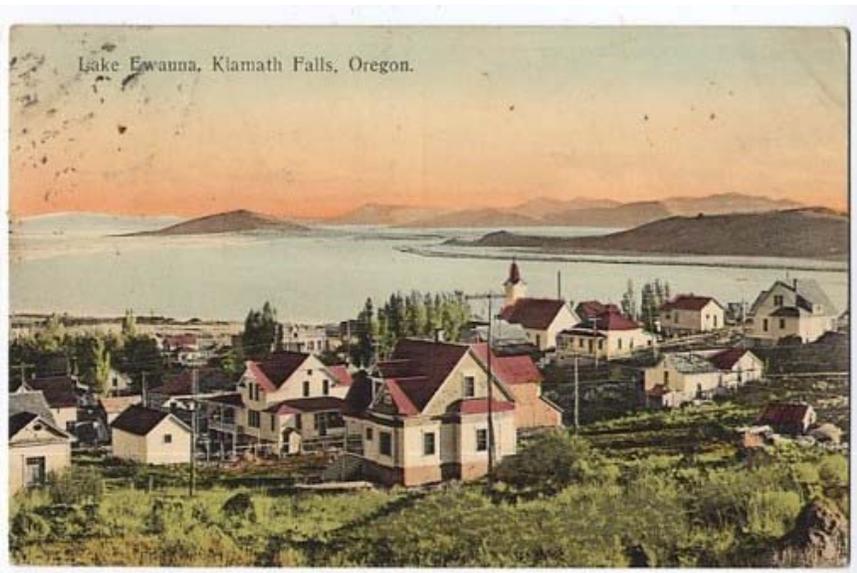


Figure 3: Klamath Falls, on Lake Ewauna, c1910  
(Source: Postcard, Author’s Collection)

Lumber mills were established along the shore of Lake Klamath and Lake Ewauna where the main Southern Pacific Railroad and Great Northern Railroad provided direct connection to distant markets. The competition for Klamath between these two railroads became what industrial historian Tonsfeldt calls “...a battlefield in the great commercial war between E. H. Harriman and James J. Hill — two men whose ambition and energy shaped the U. S. west of the Mississippi” (Tonsfeldt, 1989:10).<sup>3</sup> Klamath County was initially bypassed by the Southern Pacific, which ran its main line from California to the west through Montague, California and then over the Siskiyou Mountains into Jackson County, Oregon. In 1926 Southern Pacific opened the Natron Cut-off and moved the primary north-south rail line in

<sup>3</sup> Edward H. Harriman gained control of both Union Pacific and Southern Pacific railroads in the late 19<sup>th</sup> century and until his death in 1910 was a key figure in the expansion of the line throughout the State of Jefferson area, building new depots and branch lines. James J. Hill, of the Great Northern Railroad, was an initially well-financed threat to the dominant Harriman-controlled lines..

Oregon through Klamath Falls, reconnecting with the Willamette Valley in Eugene, a route that remains Oregon's main rail connection to California. "Harriman had what must be regarded as a personal enthusiasm for the Klamath Basin...he maintained a summer lodge on Upper Klamath Lake, near Pelican Bay (where) he spent summers with his family..." (Tonsfeldt, 1989:11).

Augmenting the two main lines were a complex series of smaller feeder and logging railroads that radiated out from shipping points on the main line or were used between smaller mills and the timber stands that served them. Typical was "Kirk," a terminus in northern Klamath County that served as a central shipping point for dozens of smaller, private logging railroads.

Collectively the arrival of railroads allowed Klamath Falls' mills to successfully service a huge surrounding area, extending across the California border in many cases. Lines to Pokegama, Algoma and elsewhere in both Klamath and Siskiyou counties, including the Klamath Logging Railroad which was ultimately purchased by Copco for use as a rail connection to both Copco One and Two, all played an important role in the region's industry and development in the pre-WWII era.

The entrance of railway facilities into Klamath Falls marked the beginning of a remarkable period of development in the Klamath Basin. Since that time the town of Klamath Falls has grown from a mere village of 2,000 inhabitants to the proportions of an industrial city of 16,000...[T]he lumbering industry has increased from two small sawmills with a daily capacity of only a few thousand feet of sawed lumber to 26 modern plants capable of turning out 1,500,000 feet...every day (Hayden, 1933).

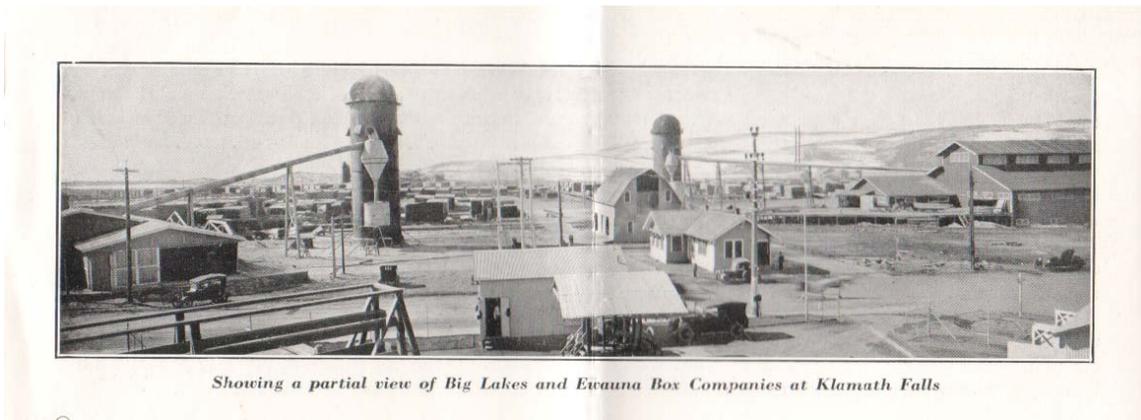


Figure 4: Typical Lumber Mill, Klamath Falls, circa 1923  
(Source: Klamath County, OR, *Klamath Chamber of Commerce*)

Other areas in Copcoland, including Siskiyou County and Jackson County, also developed or expanded industries in agricultural and timber during the early 20<sup>th</sup> century period. In

Medford population between 1900 and 1910 grew 395%, one of the fastest rates of growth in the nation. Here orchard crops, predominately pears, benefited from new irrigation districts (which also required electricity for pumping) and resulted in a so-called “Orchard Boom” that was every bit as instrumental in defining this area’s character as was timber and railroads in Klamath a decade later. Siskiyou County enjoyed growth in timber as well, but unlike its Oregon neighbors had a more balanced growth, fostered by not only timber but agriculture and mining. In all these industries the plentiful electricity of locally-based Copco played an acknowledged role.

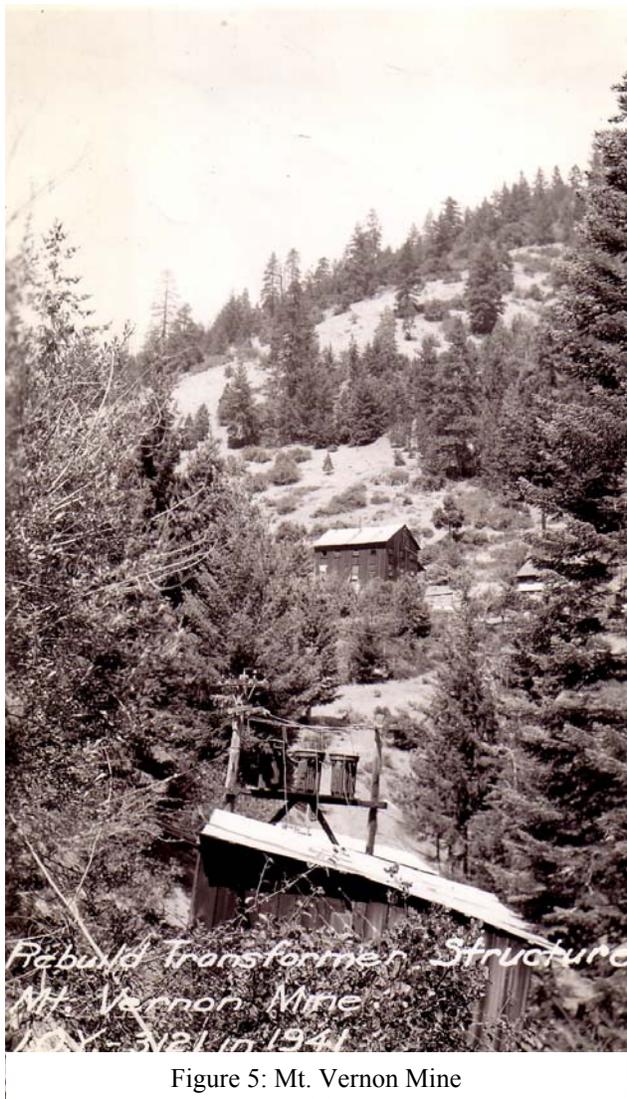


Figure 5: Mt. Vernon Mine  
1941

(Source: PacificCorp Archive, Box 19594, Neg 77:67)

“Electricity has stimulated the recent development of Siskiyou County to a marked degree. Several hydro-electric plants of high potentiality supply the mines and mill towns with power to operate at the lowest possible cost...Electricity is widely used in hundreds of up-to-date homes for domestic purposes while every town is abundantly illuminated” (French, 1915:9).

Although less influential, particularly in the long-term, recreation also played a role in the economy of Klamath and Siskiyou counties during the period when electricity was first available. Klamath Lake was the site of several nationally-regarded resorts in addition to the Pelican Bay lodge favored by Edward Harriman of the railroads. Both counties, with extensive forests and natural areas in addition to streams, offered hunting and fishing. “The Klamath country cannot be excelled for summer camping — no excessive heat, cool nights always, and pure, cold water in abundance everywhere (Klamath County Chamber, 1923:14). Scenic wonders such as Crater Lake, designated one of America’s earliest National Parks in 1902, nearby Mount Shasta and the Klamath and Salmon rivers all became tourist sites

along with the developed resort facilities at Shasta Springs, Pelican Lodge, Eagle Ridge, Rocky Point and others.



Figure 6: Shasta Springs Resort, at the base of Mt. Shasta  
(Source: *Southern Pacific, "The Shasta Route," 1910*)

In the 1930s, as in the rest of the nation, economic development in the Klamath Basin slowed during the Great Depression. It would remain stagnant until the early 1940s when government investment resulting from first America's support of the British and then finally from our nation's entry into World War II after the bombing of Pearl Harbor. Demand for regional products such as timber and agriculture, particularly the rapidly expanding potato crop of Klamath Falls, created world-wide markets that benefited the local area. Mining, although limited by the institution of War Production Order L-208, which prohibited all "non-essential" mining efforts for the war's duration, did not alter the fact that Josephine County, Oregon and Siskiyou County, California contain some the richest deposits of chromite in the world, a key mineral in military development. While never a large industry, a modest "boom" in chromite mining continued until the Korean War. New mines, and new electrical needs, were part of the mining development pattern.

Direct military construction saw Camp White, a 100,000 person U. S. Army Cantonment built just east of Medford and a U.S. Marine Barracks in Klamath Falls, both of which required additional power and brought thousands of new residents to the area in addition to the actual military personnel. At the war's end the Veteran's Housing Act and the rapid population growth throughout the western United States coincided with massive development in the timber industry, most notably the rapid acceptance of plywood and the growing standardization of kiln-dried (as opposed to "air-dried") lumber products. Most kilns were electric-powered. These, combined with new, larger, and more powerful mill equipment, and a demand for timber that kept mills opened around-the-clock, all led to brown-outs and serious electrical power shortages throughout Copcoland (PacifiCorp, 1994:4.3-1:21-22).

At each critical juncture in the economic development of southern Oregon and northern California, whether it be agriculture and irrigation, timber processing, mining, or the population growth that resulted from the development of an industrial base and the tourism that the region's natural scenery logically attracted, the development of electrical power would play a key role. An area that transitioned from its pioneer isolation to a major exporter of a variety of products, "Copcoland" grew to a mature regional economy at the same time that electricity became an accepted and necessary component in the American culture. As the *Oregon Journal* noted, the history of Copco and its spreading service region were surely "closely linked" (Oregon Journal, 4-June-1939).

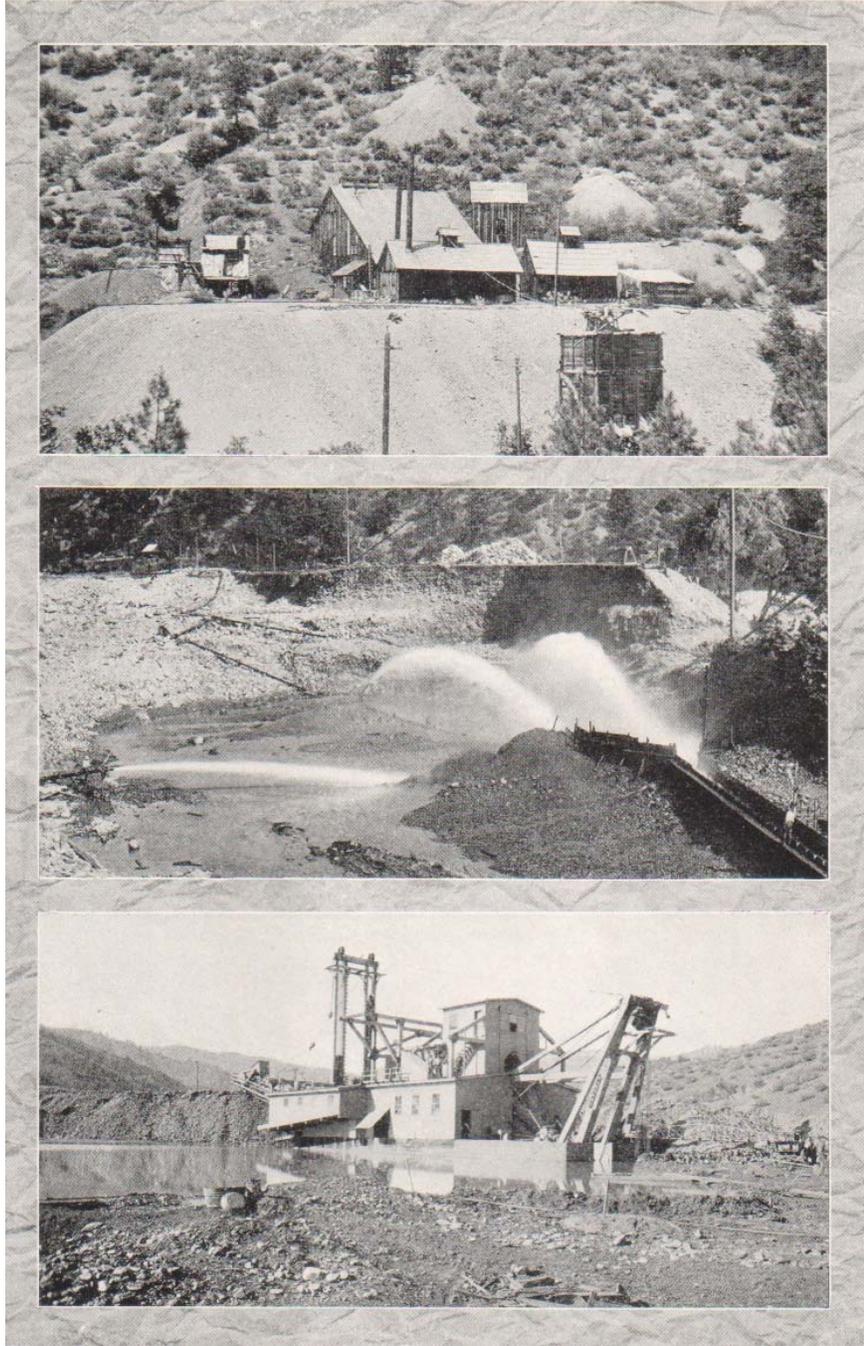


Figure 7: Mining in Siskiyou County, 1915.  
Note electrical lines in all three images.  
(Source: French, *Siskiyou County, California, 1915:10*)

## **1.5 EARLY ELECTRIC PROVIDERS**

According to George “Buck” Taylor, long-time company employee who prepared an internal report called “History by Years of the California-Oregon Power Company” during the latter part of 1964, the first step toward development of hydroelectric power in what would become the Klamath Hydroelectric Project area occurred in 1882, when a canal was constructed “...to carry water out of Link River...to operate a flour mill by water power...this canal was later known as the Keno Canal” (Taylor, 1964:1).<sup>4</sup>

Yreka early realized the benefit of electrification and in March 1890 the local newspaper stated:

...[Y]reka needs more light as well as water. It would not require a very great additional power to generate electricity for lights sufficient to light up every street and house in Yreka. Then running the engine from sundown to sunrise for lights it would serve double purpose of supplying Yreka with all the light and all the water needed. Only one plant would thus be required and regular force of three men... [Rippon 1895:23, (13-Mar-1890)].<sup>5</sup>

In April, apparently taking the paper’s advice, James Quinn “....commenced making preparations to establish his electric light plant for supplying Yreka with electric lights by placing a water power wheel in Shasta River Canyon, below the mouth of Yreka Creek” (Rippon/Journal, 29-Apr-1891). In October 1891 Quinn’s plant was tested and then, on October 17th, put into commercial operation.

About 5:30 P.M., the whole town was lighted up, as if by magic, all the lights burning within lighting, if not turned off, and as the shades evening grew darker, the lights become more brilliant...The light is a beautiful white light without the least flicker...(Rippon/Journal, 17-Oct-1891).

One of the names that would eventually become pivotal in electric power development in Siskiyou County was Churchill. Jerome Churchill a well-to-do rancher and businessman, may have been an early investor in Quinn’s operation and others. Churchill’s son Jesse, generally known as J.H., would remain active in the field for many decades and the family was obviously quick to recognize the benefit of electricity. In 1892 Jerome Churchill built a fine new dwelling on North Main Street. “It will be lighted throughout with electric lights and have many other modern conveniences. It is being built by J. Boyle, San Francisco,

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<sup>4</sup> Buck Taylor started work for COPCO in 1924 as a timekeeper on Copco No. 2 and continued in various jobs until 1928 when he moved to the corporate office in Medford, Oregon to work as a construction job order clerk. He remained with the company as special accountant until after its 1961 merger with Pacific Power and Light (now PacifiCorp).

<sup>5</sup> Detailed abstracts of early Siskiyou County newspaper accounts related to power development were compiled by Cy and Sally Rippon and published in *Pioneering with Electricity in Siskiyou County* (Weed, CA, 1985). Most articles are taken from the *Siskiyou Journal* and are arranged in Rippon’s work by date of publication. All subsequent citations from this work will be “Rippon/Journal” with the original date of publication as cited by the Rippons.

architect and builder. The residence of Mr. Churchill's son, Jesse, adjoining,...is also being wired for electric lights" (Rippon/Journal, 20-July-1892).<sup>6</sup>



Figure 8: James Quinn's Shasta River Plant, 1921  
(Source: PacificCorp Archive, Box 19594, Neg. 86-75)

While Yreka was now ablaze with modern electrical lamps, Klamath Falls was not too far behind. In 1895 the Klamath Falls Light and Water Company, under the direction of H. V. Gates, obtained a franchise to furnish that city with power.

Mr. Gates and his electricians, already having sockets for electric lights hung in most of the business houses and many of the private dwellings, are now busy at work with the transformers, making all things ready so that as soon as the wheel, which is on the road from Ohio, gets here, it will be but a short time till our county seat will be illuminated by electricity (*Klamath Star*, 19-Sept-1895 2:2)

In November 1895, Gates' small power plant, housed in a wooden building located on the east side of the Link River, was completed and put into operation. "It turned on the first lights in Klamath Falls on November 1, 1895...(Boyle, 1976:27).

Typical of the history of many pioneer power providers and the early plants they built, neither the Yreka Electric Light Works, as the Shasta River plant developed by Quinn was called, or what became known as Eastside No. 1 in Klamath Falls would remain sufficient to meet the rapidly growing demand for electricity in their respective communities. In 1901 a Yreka editor, obviously completely convinced of the value of electricity, and the city's need

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<sup>6</sup> This early mention of J[ohn] Boyle "architect and builder" may somehow represent an early connection between the Boyle family, and the Churchills, a connection that would grow substantially, as documented below. While clearly *not* John Christie Boyle (who was five years old in 1892) this likely refers to Boyle's father or other relative, indicating some long-term relationship with the Churchill family.

for more if it was to prosper, wrote the following laundry list of electricity's increased application.

Yreka, although it has electric lights, is in need of more electrical power, which would prove a paying investment, especially in connection with more lighting. With more power electric fans could be operated in homes, restaurants, hotels, saloons, etc., and cooking could be done avoiding oppressive heat in the summer. Mining machinery, pumping plants, machine shops tools etc., could be operated and to great benefit. Huge power plants run by river waters may soon be used to operate railroads by electricity in mountain areas...(Rippon/Journal, 23-July-1901).

In 1902 a group of investors led by Jerome Jr. and Jesse Churchill, Alex Rosborough, and Hubert Steele announced plans for a seemingly huge new hydroelectric project that would serve the Yreka market and directly compete with Quinn's smaller Shasta River plant. The Siskiyou Electric Power Company, as the group was known, began survey work above Fall Creek, in northern Siskiyou County east of the community of Ager, in August of that year. "Just above Fall Creek falls, the low dam will be built, leading water into the ditch, bringing water to about 200 feet of flume and the large penstock made of 2x8 planking, from which the large pipe will lead down the hills a lengthy ways to the power plant" (Rippon/Journal, 5-August-1902).

The Fall Creek Plant, as the company's plant would be known, was under construction by the following month and was scheduled to go into operation in 1903. Looking toward the future, "The company also located a right to use Klamath River, should more power be needed" (Rippon/Journal, 23-September-1903).

Work on Siskiyou Electric Light and Power Company's (sic)<sup>7</sup> Fall Creek project is advancing very rapidly....a camp has been set up on the flat near the flume and penstock...[the] Fall Creek Power Plant will be located on the North Bank wagon road upon the Klamath River...For natural advantages as a power site, none better can be found in this part of the State, and the company is doing all of its work in the most modern and substantial practice along these lines, making it one of the most unique power plants on the West coast (Rippon/Journal, 16-Dec-1902).

Faced with the new competition from Churchill and the Siskiyou Electric Power Company, James Quinn, developer of the earlier generation plant on the Shasta River, sold his interests to Edward T. Osborn and Edgar T. Wallace who initiated plans to improve the pioneer facility and increase service to the Yreka area. Work on Fall Creek continued and was nearing completion by Spring 1903.

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<sup>7</sup> Rippon generally refers to the Churchill-led company during this period as "Siskiyou Electric *Light and Power* Company," which is incorrect. The Siskiyou Electric *Power and Light* Company [SEPL] was incorporated in 1908. It absorbed the original Siskiyou Electric Power Company, incorporated in 1902, which had built Fall River. SEPL operated in the Yreka area as described above until merging with other pioneer entities in 1912.

Siskiyou Electric Light & Power Company (sic) has commenced erection of the steel frame and sheet iron power house at Fall Creek to have everything ready as soon as machinery is put together, power poles set up and wires strung (Rippon/Journal, 3-March-1903).

In May, still having produced not a watt of power, the well-financed Churchill interests sealed a deal to purchase the Ashland [Oregon] Electric Power and Light Company for \$40,000. Alex Rosborough, an officer of the company, stated that "...it is the policy of the company to absorb the smaller plants rather than make war upon them by a competition which would be unprofitable to all concerned...[and] that the inauguration of the company's plant will mean important development in manufacturing enterprises in this section..." (Rippon/Journal, 5-May-1903).

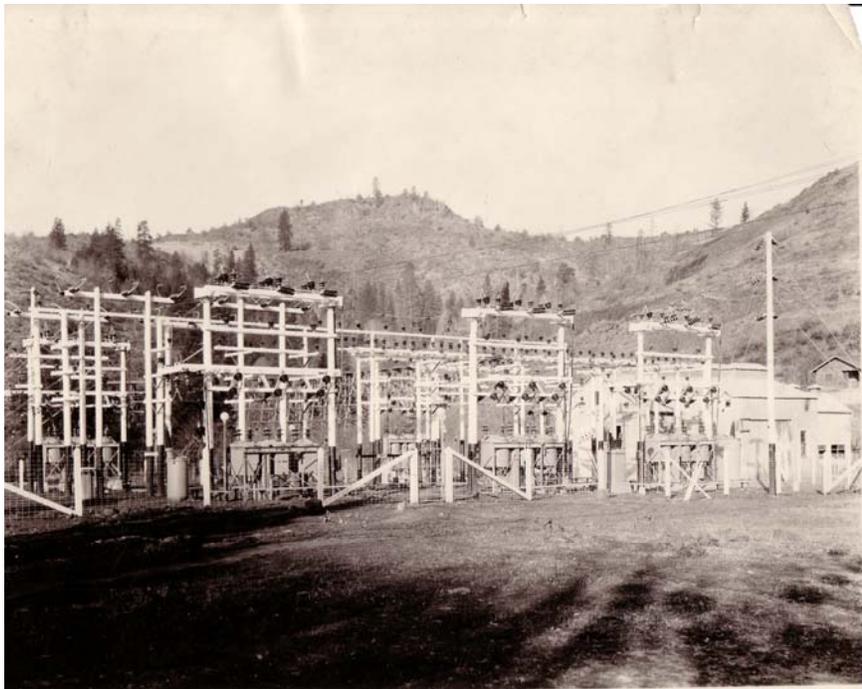


Figure 9: Fall Creek Substation and Powerhouse, c1920  
(Source: PacificCorp Archive Box 19591)

The Fall Creek Power Plant went into commercial service in mid-September 1903 and Siskiyou Electric Power Company quickly established its presence as the leading power provider in the region, with lines across the Siskiyou Mountains in Oregon, connecting its Oregon and California operations. In October 1903 the company secured franchises for street lights and electric power in the California towns of Henley and Hornbrook along with other communities near its Fall River plant such as Ager, Klamathon, and all of the Scott Valley, west of Yreka, including the towns of Etna, Fort Jones and Greenview. True to Mr. Rosborough's statement of 1903, favoring consolidation rather than competition, the Siskiyou Electric Power Company purchased the former Quinn interests in July 1905. (Rippon/Journal, 26-July-1905).

Meanwhile, in Klamath Falls, a similar competition and eventual consolidation process was occurring.<sup>8</sup> In 1906 the Gates company that had developed the original Eastside No. 1 powerhouse was challenged by the formation of the Klamath Light and Power Company, controlled by Rufus and Charles Moore. The Moore brothers owned a successful lumber mill on the Link River and in 1908 completed a power plant almost directly opposite Gates' development — the “Westside” plant. In 1910 the Moores purchased Gates' operation and re-organized the combined venture as the Klamath Power Company (Taylor, 1964:4). Two years later, in the best Rosborough tradition, the Klamath Power Company, the Siskiyou Electric Power & Light Company, and ten additional local power providers including the Rogue River Electric Company, were joined as the Siskiyou Electric Power and Light Company, a firm largely under the control of the same Churchill-led interests<sup>9</sup> that had developed the Fall Creek Plant only a decade earlier.<sup>10</sup>

Recently the Moore's announced the sale of the Electric Light and Power Plant and Water Works to the Siskiyou Electric Light & Power Company (sic). This will mean considerable [improvement] for Klamath Falls, in so much that it will combine the electric light and power facilities of Klamath Falls with that of the Siskiyou Electric Power & Light Company, who are now generating a large amount of electricity at their Fall Creek and other power plants.. (*Siskiyou Semi-Weekly News*, 15-June-1911)

Siskiyou Electric Power and Light [SEP&L], in total, combined the generation and transmission facilities of 27 different companies that had been providing power to a region that spanned from Grants Pass, Oregon in the north, to Dunsmuir, California in the south, Etna, California in the west and Klamath Falls, Oregon in the east, a bi-state region that forms the heart of the State of Jefferson. Almost immediately SEP&L was re-organized into the California-Oregon Power Company, or Copco, reflecting the bi-state service area that would soon become colloquially known as “CopcoLand”(Taylor 1964:4-6).

## **1.6 COPCO: 1911 TO WORLD WAR II**

The “hyphen” company, as the California-Oregon Power Company was subsequently known to differentiate it from a successor entity, this first Copco continued to consolidate its holdings and expand its service area while embarking on new development to meet the growing demand for electricity in its region. As relates to the Klamath Hydroelectric Project the most notable of these activities was the initiation of work first planned by Siskiyou

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<sup>8</sup> This basic pattern would repeat itself through much of the West. In the Rogue River Valley, from Ashland to Grants Pass, Oregon, the Condor Electric Company, which evolved into the Rogue River Electric Company, by 1910 would emerge as the leading provider by purchasing or merging with virtually all its competition.

<sup>9</sup> Officers in the reorganized company included Jerome Churchill, Sr., J.P. Churchill, Jesse W. Churchill, Alec Rosborough, Hubert Steel, Count DeTristan, P. B. McKay and Mr. Osborne. Senior staff who would long play important roles in the company that were part of this transition included O.G. Steele and, most notably John C. Boyle.

<sup>10</sup> The three major elements of the new firm were the Churchill's Siskiyou County company and in Oregon the Moore operation in Klamath County and Ray interests (Condor Power and the Rogue River Electric Company) in Jackson and Josephine counties.

Electric Power & Light for the construction of a large generation facility on the Klamath River — utilizing the water rights secured concurrently with the development of the Fall Creek plant in 1902-1903.<sup>11</sup>

Work on the first Klamath River generation project, which would be called “Copco No. 1,” had begun in Spring 1909 when SEP&L had begun the preliminary survey for an entire series of plants on the Klamath. The first project was to be focused on a Klamath River site near the Fall Creek Power Plant. “The plant will be located a ways down Ward’s Canyon from its eastern end..” (*Siskiyou Semi-Weekly News*, 4-March-1909). By 1911 SEP&L had completed sufficient survey work to develop a long-term development program for the Klamath River that, essentially, would serve as the primary blueprint for the hydroelectric development for the next five decades.<sup>12</sup>

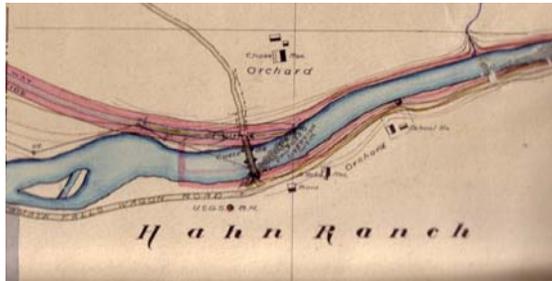


Figure 10: Hahn Ranch Area, Detail showing Copco No. 1 Diversion Dam site, 1911  
(Source: PacifiCorp Archive, File #18222)

In 1910 John Christie Boyle (1887-1979), born in Ft. Jones, in Siskiyou County was hired by the Churchills immediately after his graduation from the engineering department at the University of California, Berkeley. First hired as a field surveyor on the Copco No. 1/Ward’s Canyon project, by 1916 he was in charge of its construction. In 1913, though still only a junior member of the company’s engineering department under the direction of Sydney Sprout, Boyle penned an extensive article on the project for publication in the *Journal of Electricity Power and Gas* (22-February-1913, Volume XXV, No. 8).

The site is near the geological center of the 10,000 square mile territory in Southern Oregon and Northern California in which the company now distributes 20,000 horsepower, which will eventually be increased by a great amount...(*Yreka Journal*, 9-July-1913).

Construction complications, notably the lack of “regular” sand in the area and, apparently, some financial considerations, slowed the pace in Ward’s Canyon.

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<sup>11</sup> The other large generation project COPCO embarked upon was at Prospect, on the Rogue River, completing work begun by the Ray interests of Rogue River Electric Company.

<sup>12</sup> See SEP&L, Klamath River Project, (Noel Graves, Engineer & Delineator), PacifiCorp Archive #18222.

The new year found the company with an uncompleted power plant at Copco, on the Klamath River, on which more than \$1,000,000 had been expended, while the earnings of 1915 had run about \$1,000 a month below the fixed charges for the year. Under the circumstances the company was compelled to default on its January interest coupon on the \$3,165,000 California-Oregon power 40-year 5% first and refunding mortgage gold bonds although the interest on the \$1,206,000 of underlying issues had been paid regularly (*Klamath Evening Herald*, 11-Feb-1916, 1:6-7).

In early 1916 COPCO was re-organized with the infusion of large amounts of capital from a group of San Francisco investors.

....these financial arrangements have been accompanied by a reorganization of the company with some of the strongest financiers in California as executives. J. D. Grant of San Francisco, the new president, is a director of many banks with widespread commercial interests. John D. McKee, vice-president, is president of the Mercantile National Bank and director in other financial institutions. J. P. Churchill, of Yreka, former president, is now a vice president....Stocks and bonds of the company are largely held in San Francisco, northern California and southern Oregon. Power and light is supplied from Glendale, Oregon to Dunsmuir, Calif....(*Klamath Evening Herald*, 2-Mar-1916, 1:1).

“This marked the passing of control from Churchill to the McKee interests. The Churchills, Siskiyou County people, had pioneered and consolidated into an integrated company practically all of the power generating and distributing agencies in Northern California and Southern Oregon” (Boyle, 1976:13). The McKee group, with substantial new funding, rushed Copco No. 1 to completion and its first 10,000kw unit was put into commercial service in Spring 1918.

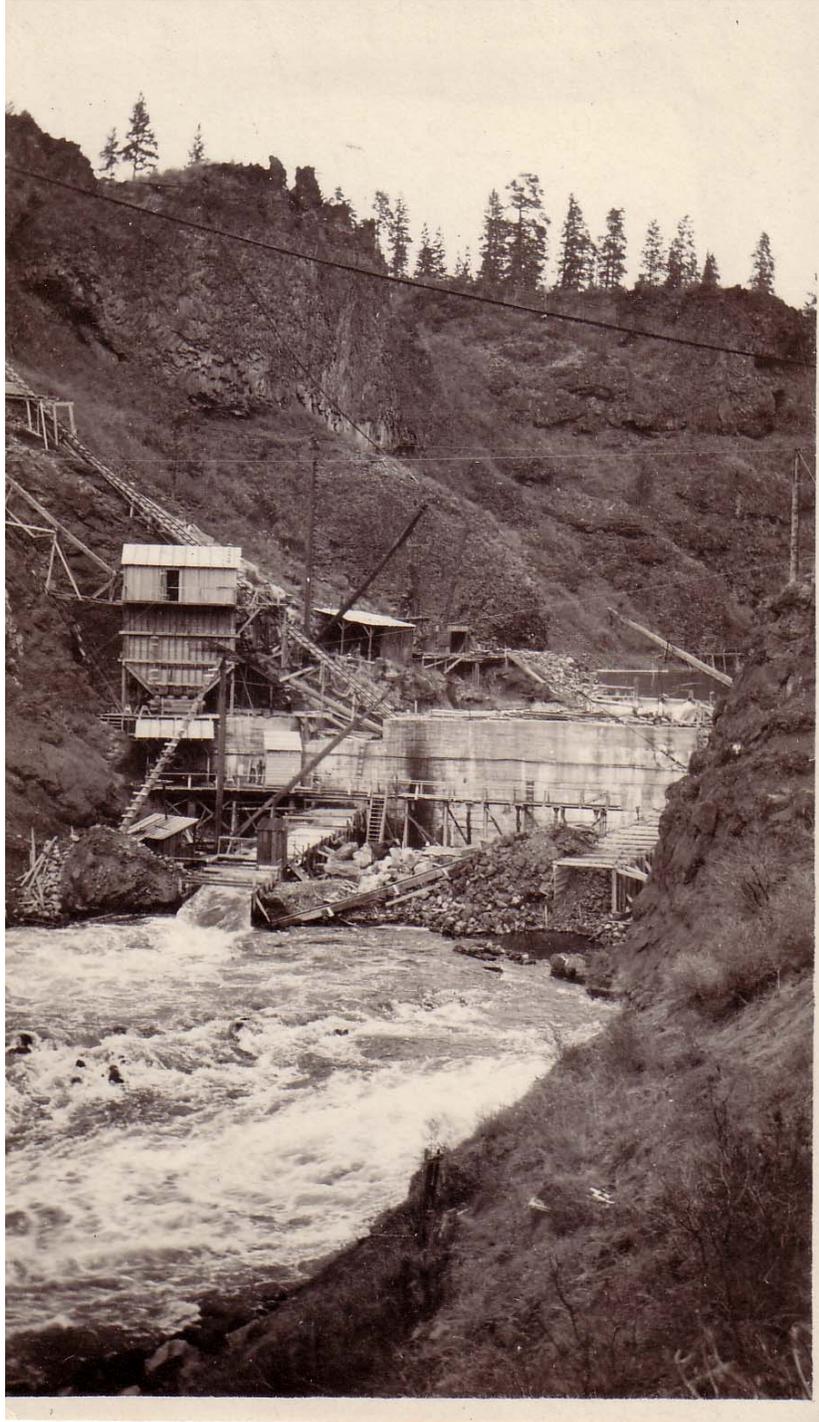


Figure 11: Copco No. 1 Construction, at Dam Site, looking upstream, 1916  
(Source: PacifiCorp Archive, Box 19594, Bk 86)

The formal dedication of the great Copco Dam and Power Plant in Ward's Canyon at Copco on the Klamath River took place last Sunday, February 3,

1918...Ceremonies were conducted at the beautiful, rustic and spacious guest house, built on the edge of the bluff at Copco, overlooking the dam, powerhouse and lake...(Rippon/Journal, 6-February-1918).



Figure 12: Copco No. 1, Opening Day, 3-February-1918  
(Source: *PacificCorp Archive, 19592, BK 84, Pg 50*)

The hyphen company continued to grow and acquire competitors in the region, expanding its existing plants, and dismantling or replacing early pioneer facilities with modern, significantly larger, capacity plants such as Copco No. 1. Paul and Donald McKee, the sons of John McKee, relocated to Medford in southern Oregon and took over the day-to-day control of the company with Paul designated General Manager. In 1920, working through W. B. Parker of the Klamath Development Company, an un-named “San Francisco capitalist” purchased the Keno Power Company, at Keno, on the Klamath River southwest of Klamath Falls.

The company owns about 20 miles of transmission line, covering all parts of the territory contiguous to Klamath Falls on the south and west sides of the city. Its plant on the Klamath River started in 1911 with a capacity of 250 horsepower which has been increased to a present capacity of 8509 horsepower and possesses possibilities of developing 2,250 horsepower under present conditions (*Klamath Evening Herald, 7-April-1920, 1:1*).

By 1920, largely as a result of its role in irrigation matters, and despite its pivotal role in developing the area’s industrial and agricultural economy, Copco was subject to a certain

amount of suspicion, warranted or not, in Klamath County. “The reasons for unsatisfactory relations towards the Company are mainly because of the regulation of Upper Klamath Lake and the purchase of the Keno and Ankeny Canals.” (Koppen, Report on Klamath Reclamation, April 1927).

Ruminating upon the possible identity of the “un-named” San Francisco capitalist behind the purchase of one of the only remaining independent power providers in the basin, the *Evening Herald*, fairly accurately as it would turn out, wrote:

The new purchasers have announced their intention to continue to operate under the old corporation title and the concern starts as a competitor of the California-Oregon Power company. Whether it will remain an active competitor is a matter of general conjecture in which any one’s guess is as good as another’s. It is known that the Fleischacker interests of San Francisco hold the hypothecated securities of the Klamath Development Company and it is said that they bear the same relationship to the California-Oregon Power company. It is, of course, only a reasonable assumption to believe that in order to protect their interests they are acting through the present purchasers of the Keno Power company to purchase a competing concern and eliminate it by merger or otherwise from the local field (*Klamath Evening Herald*, 7-April-1920, 1:1).

Buck Taylor, writing Copco’s history in 1964, blandly states that “The Keno Power Company, including plants and lines, was acquired by the Copco from the Kerns brothers on April 1, 1920. Company records regarding lawsuits between Keno Power and Copco indicate a more contentious situation, with the younger upstart company infringing upon Copco’s distribution lines and, at least in Copco’s opinion, endangering the public through improper installations and poorly designed service.<sup>13</sup> The Keno Power Company continued to operate as a separate utility until January 1, 1927, when its properties were merged into [COPCO]” (Taylor, 1964:8).

In 1920 the “hyphen” company was again re-organized and transformed into the California Oregon Power Company, without the hyphen, and still referred to as “Copco.” This company, with headquarters in Medford, Oregon, would continue to grow and consolidate service in the region for the next 40 years. By the mid-1920s, through the purchase of existing providers and construction of transmission and inter-tie facilities, the Copco service area stretched north to Douglas County, Oregon, east to Lakeview and south to Redding, California.

On the Klamath River, Copco’s development after 1920 was predominately focused on improving the pioneer facilities on the Link River, expanding Keno, and, most notably building a second large generation facility on the Klamath River, below Copco No. 1.

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<sup>13</sup> See *Before the Public Service Commission of Oregon; California-Oregon Power Company v. Keno Power Company*. (PacifiCorp Archives, Box 19591).



Figure 13: Keno Dam, 1921  
(Source: PacifiCorp Archive, Box 19582, Neg E-5-11)

Copco No. 2 was originally envisioned during the survey work for Copco No. 1 but, likely hampered by the construction and financial issues that delayed construction of that first plant, was deferred for more than a decade. Construction of Copco No. 2 was begun in 1924 and also faced issues as the result of the unusual geology of the canyon but was completed and put into initial operation in July 1925, adding 30,000kw to the company system (Boyle, 1976:16-17).

In October 1925 the McKee interests sold all of its common stock and most of the preferred stock in Copco to the Standard Gas & Electric Company, a subsidiary of the Chicago-based H. M. Byllesby Company. Byllesby, a pioneer electrical engineer, began his career working with Thomas Edison on some of the first electric light installations in the nation.<sup>14</sup> The company he founded and directed until his death in 1924 evolved from a nationwide consulting role into a massive electrical power conglomerate with holdings from coast-to-coast. In many ways Byllesby's operation was just a continuation of the Alec Rosborough's

<sup>14</sup> See <http://www.jhalpin.com/metuchen/tae/ehlai18.htm> for information on Byllesby's role with Edison.

1903 policy for the Siskiyou Electric Power Company. Byllesby absorbed and consolidated smaller providers and eliminated competition, albeit on a significantly larger scale, in which Copco itself was only a minor element.<sup>15</sup>



Figure 14: Main Street Klamath Falls, Oregon, with COPCO offices at left, c1930  
(Source: Wesley Andrews Postcard, Author's Collection)

Under Byllesby, or the “Chicago Interests” as they were referred to both internally at Copco and by the general populace, to the extent they were referred to at all, the “face” of Copco remained largely unchanged. Byllesby retained most of the Copco staff, the Medford headquarters, and Copco continued its purchase of other, smaller, providers and expanded the service area while appearing as a locally-owned utility.<sup>16</sup> While new plants were constructed, and additional units added to existing generation facilities to increase their capacity, the only major project in the Klamath region after 1926 was the construction of the new Keno Regulating Dam, completed in 1931 (Taylor, 1964:11).

<sup>15</sup> Byllesby’s interests including, among many many others, Minneapolis General Electric, Northern States Power, Western States Gas and Electric, San Diego Gas and Electric, Alabama Power Company, Oklahoma Electric, Mountain States Power Company (in Oregon), the Appalachian Power Company and literally dozens and dozens of other large and small regional entities such as Copco from coast to coast.

<sup>16</sup> Notable among the departures from Copco after the Byllesby purchase was Paul McKee, who left Copco as a vice-president in 1926. John Boyle, and many others including Harlan P. Bosworth, Frank Bash and A. S. Cummins, all of whom would long play important roles at COPCO, remained with the company. McKee eventually rose to the presidency of Pacific Power & Light and, as documented below, played a role in the consolidation of that company with Copco in 1961.

## **1.7 COPCO: WORLD WAR II TO 1961**

During WWII Copco struggled to maintain service levels while meeting increased demand in the region as the result of military encampments in both Jackson and Klamath counties that brought more than 100,000 new users to the area. Pioneer power plants such as those at Gold Ray, near Medford, and Winchester, on the Umpqua River, north of Roseburg, were pushed back into service, as even their minuscule 5kW capacity was sorely needed.

John Boyle, since 1941 a vice-president and general manager in addition to being the Chief Engineer of the company, had long been interested in developing linear systems of generation facilities. Boyle's idea was to efficiently use waterflow in the non-navigable upper reaches of the major rivers that started in mountains of the Cascade Range that defined so much of the company's service area by building projects that would recapture flow to realize additional energy on a single stream.

At the end of WWII Copco operated four generation facilities on the Klamath, tapping what Boyle had long recognized as only a small portion of that river's capacity. Two large projects at Prospect and one small pioneer facility (at Gold Ray) were in place on the Rogue, fairly exhausting the potential of that river which ran through major cities and settled areas.<sup>17</sup> In Douglas County, a major timber-producing region with rapidly growing power needs, only a single pioneer facility, at Winchester, was in place and so, almost immediately upon the war's end, Boyle began survey work for a massive inter-connected series of generation facilities on the North Umpqua River, entirely within the boundaries of the Umpqua National Forest.

The big development required an investment of \$57,000,000 and resulted in the addition of 208,600 kilowatts of generating capacity to the company's system...Plans called for eight separate plants...[and] construction was scheduled over a period of ten years beginning in 1947 (Dierdorff, 1971:276).

The first North Umpqua unit, "Toketee," was begun in January 1947 and went on line in 1949 (PacifiCorp, 1994). The eighth plant in the project, Lemolo No 2, was completed in November 1956. "It was believed that nowhere else in the world were there as many hydro plants remotely controlled from a single source" (Boyle, 1977, 157).

The North Umpqua Project, which effectively doubled the Copco's system capacity, was still insufficient to meet the growing demands of the region. "The company's growth continued at a rate in excess of anything anticipated a few years before, due to the rapid increase in population and industry in the Company's service area" (Taylor, 1964:16). The population of "Copcoland" grew substantially between 1940 and 1960, at a rate not seen since the first decade of the 20<sup>th</sup> century. This was especially true of the company's western area as

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<sup>17</sup> Early in this period several sources indicate Copco at least considered the possibility of plants on the lower Rogue River, though Hellsgate Canyon and other areas that are now a portion of the Wild and Scenic River section of the Rogue. None of these plans appear to have been seriously developed.

opposed to the more rural Klamath, Lake, Modoc and Siskiyou county regions of the Klamath Basin.

After World War II population figures for Klamath, Jackson, Josephine and Douglas counties in Oregon, and Siskiyou County in California virtually all reveal double-digit growth. Individual county populations are shown in Table 1.

TABLE 1  
 COPCOLAND POPULATION FIGURES, 1940-1960, BY COUNTY

County	1940	1960	% Increase (loss)
Douglas [OR]	25,728	68,458	166%
Jackson [OR]	36,213	73,962	104%
Josephine [OR]	16,301	29,917	84%
Klamath [OR]	40,497	47,475	17%
Shasta [CA]	28,800	59,468	106%
Siskiyou [CA]	28,598	32,885	15%
<b>TOTALS:</b>	<b>147,337</b>	<b>252,697</b>	<b>72%</b>

NOTE: Data on Oregon counties is from (State of Oregon, 1969:188). Data for California is from <http://www.dof.ca.gov/HTML/DEMOGRAP/histtext.htm> prepared by the Demographic Research Unit, California State Department of Finance.

In raw numbers, Copco in the two decades after WWII added nearly 150,000 more customers to its core service area, was contracted to provide generation capacity to other locales in California,<sup>18</sup> and faced an ever-growing demand for electricity from a rapidly expanding industrial sector, particularly in the area of lumber and plywood manufacturing. By 1970 the population of the core six county service area would grow to nearly 300,000, essentially doubling in just three decades.

In June 1947, as the construction and financing of the North Umpqua Project was underway, Standard Gas & Electric, the Byllesby subsidiary that had acquired Copco from the McKee interests in 1926, sold all its stock in the company to an Oregon-based investment corporation which in turn put the company into public ownership. Again in the hands of local investors, Copco would be based in Medford, Oregon for the remainder of its existence as an independent entity, continuing to benefit from the association of numerous long-time employees such as Boyle, Bosworth, Glenn Jackson, A. S. Cummins, Frank Bash and others (Taylor, 1964:16).

In 1951, as the various units coming online at Toketee were seen to be insufficient for the long-term needs of the region, Copco's leaders realized that it must develop even more generation capacity and so began scouting for appropriate hydroelectric opportunities.<sup>19</sup>

<sup>18</sup> Long-standing agreements between Copco and Pacific Gas & Electric Company supplied power to the San Francisco area through an inter-connection facility at Delta, in southern Siskiyou County (Coleman, 1952:289).

<sup>19</sup> Throughout its entire history virtually all of Copco's electric capacity would be hydroelectric, a function of the abundant water systems throughout the service area. Other than a steam-fired plant Copco operated under a lease arrangement with

First the company looked at a site on the McCloud River and filed for a possible project with the Federal Power Commission “However, Klamath Canyon was most attractive, being near the Copco load center where construction cost and transmission lines would be minimum. It was therefore decided to make another attempt to secure necessary water rights in Oregon sufficient to justify construction” (Boyle, 1976:53).

Still a contentious issue in the Klamath Basin, water rights and the conflicts between irrigators, fishermen, recreation interests and others stretching from northern Klamath County all the way to the Pacific Ocean have been a constant source of legal and political wrangling in the area for more than a century. The nature of the Klamath Basin in the early 20<sup>th</sup> century, a sparsely-settled area with fertile land and abundant natural and scenic resources, that span two states and are so subject to local laws, varied state agencies and ultimately the Federal government, often placed Copco and its various predecessor entities dating all the way back to the Moore brothers and the Churchills, at odds with this or that influential segment of the community.

Typical of the shifting alliances in the Klamath Basin are the events described by the *Klamath Herald*, a supporter of most things Copco did during the early 1920s and of the city’s booming lumber and railroad-fueled economy, in a full banner headline published in mid-1925. The *Herald*, proclaiming “COPCO WATER THEFT BLOCKED” praised the stalwart actions of the Klamath Irrigation District in successfully halting the company’s effort to divert additional waters from the Link River (*Klamath Herald*, 8-July-1925 1:1-8). As Boyle implies when stating that after WWII Copco determined to make “another attempt” in Klamath, such legal, political, and community wrangles in addition to the complicated nature of the regulatory system in the bi-state Klamath Basin area, likely played an important role in the fact that Copco initially looked elsewhere than the abundant flows of the Klamath River to build capacity after 1925 and the completion of Copco No. 2.

By January 1956, after a lengthy series of hearings and negotiations regarding the Klamath projects, Copco signed agreements with the Federal Power Commission, the Hydroelectric Commission of Oregon, and the Public Utility Commissions of both Oregon and California, in addition to other agreements with the Department of the Interior and the Bureau of Reclamation that cleared the way for construction of the first new generation facility on the Klamath in three decades. “The Big Bend project was rushed to completion and 88,000kW were added to the Copco system by October 1, 1958” (Boyle, 1976:54). Big Bend was essentially constructed, and even named, in concert with the Siskiyou Electric Power and Light development plan for the Klamath River that was prepared in April 1911.

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the Mountain States Power Company on the Oregon coast (Mountain States was also a Byllesby Company) virtually all of the company’s capacity was hydropower throughout its history.

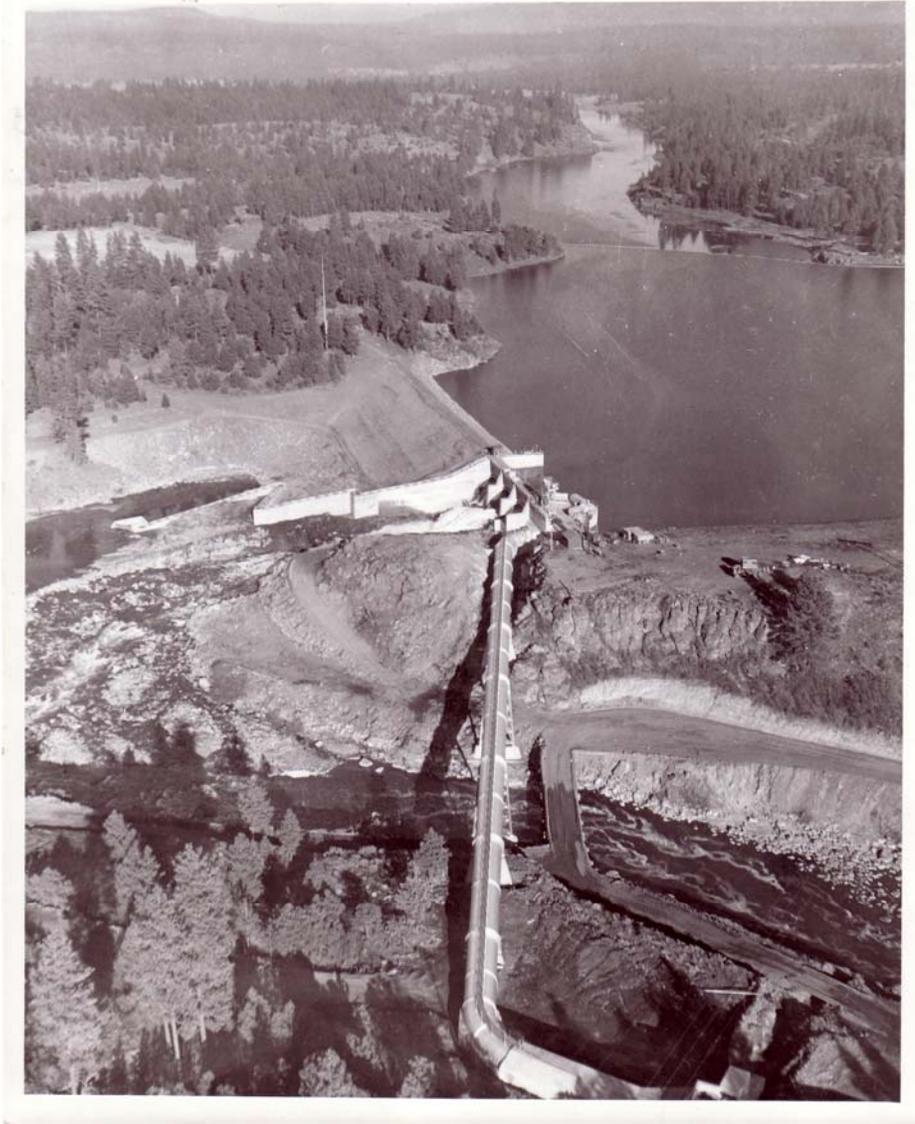


Figure 15: The Big Bend Development, Dec 1958  
(Source: PacifiCorp Archives, Image #BB-1032)

The final component of the Klamath Hydroelectric Project, both in terms of construction and, geographically, within the flow of water, is the Iron Gate project. Begun in 1960, it was completed and put into service on January 13, 1962. Just as at Big Bend, the name and location of Iron Gate were first identified in 1911 as part of the very first surveys of the hydroelectric potential of the Klamath River. With its construction, the development of electric generation facilities in the Klamath Basin, begun in the early 1890s, was at an end.<sup>20</sup>

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<sup>20</sup> Additional development sites identified by SEP&L and other Copco-predecessors also included the so-called Salt Caves Project, a controversial and still unbuilt development site near Klamath Falls.



Figure 16: Opening Day at Iron Gate, February 3, 1962  
(Source: PacifiCorp Archive, Iron Gate Development Neg IG-264).

## **1.8 MERGER- PACIFIC POWER & LIGHT, 1961-**

By the late 1950s, having been a major element in the development of “Copcoland” for six decades, the California Oregon Power Company was both well known and highly regarded throughout the region. Locally owned, since the company had embarked upon a period of growth and expansion the end of World War II that for a small and still generally rural area, was staggering, investing over \$150 million dollars “...in plants and facilities to provide full and adequate service to meet the needs of its growing service area” (*Medford Mail Tribune*, 26-July-1959, 12:1-8).

Having weathered the post-war growth years and accomplished the planning, financing and construction of ten major power projects, including the two on the Klamath River, in just over a decade, the California Oregon Power Company was merged into its larger neighbor to the north, Pacific Power and Light. PP&L (later PacifiCorp) shared a similar history with Copco and the two companies had had strong business ties for many years. Paul McKee, son of John McKee who with other San Francisco investors had spearheaded the reorganization of the “hyphen” company and secured the funding to complete Copco No. 1 in 1918, remained in the power generation field after leaving Copco following its 1926 sale to the Chicago-based Byllesby. After a stint in South America, McKee became President of PP&L in 1933 and held that influential position until 1958 when he was made Chairman of the Board of Directors (Dierdorff, 1971:296). With the joining of Copco and PP&L in 1961, McKee’s long career in electric power came full circle. Copco and PP&L’s boards were merged, including not only McKee but A. S. Cummins, Copco President since 1941, Frank Bash, H. P. Bosworth, and John Boyle. All were made vice-presidents and continued with PP&L for the remainder of their careers.

John Christie Boyle, who had worked on virtually every hydroelectric project development of the Siskiyou Electric Power and Light Company and its various successor entities since 1910, including the planning and design of the Klamath Hydroelectric Project, was personally honored at the dedication ceremony of its last unit, Iron Gate, in 1962. At that event, hosted by PP&L’s McKee, who had first worked with Boyle nearly half a century earlier, it was announced that the Big Bend Plant on the Klamath River would be renamed in honor of its designer.

The largest electric power producer in the Copco system of Pacific Power & Light Company was named the John C. Boyle Hydroelectric Project at a ceremony...Monday to honor the veteran utility industry leader who designed and built most of the southern Oregon’s power plants...The choice of this key project to bear his name is appropriate...for it typifies the scope of the vision of John C. Boyle and the contributions he has made to the long-range planning for the full use of the water resources in the basin...(Oregonian, 25-June-1962).

A plaque was erected at Big Bend as it was formally rededicated in Boyle’s name, unveiled by his grand-daughter Sue Anne Rutherford. Today the John C. Boyle Plant remains a vital

component of PacifiCorp's on-going generation activities at the Klamath Project. Today, with generation units ranging from the Eastside Powerhouse to Iron Gate geographically, from the 1903 Fall Creek Power Plant to the 1962 Iron Gate project in terms of construction, spanning two counties, two states, and some nearly 40 miles of the Klamath River, the Klamath Falls Hydroelectric Project boasts a generation capacity of 151 megawatts. The individual histories of its major elements are the basis of Section 3.

## **PART 2.0 IDENTIFICATION:**

As described in the previous historic overview, the development of hydroelectric generation facilities in the Klamath River basin essentially occurred during two major periods, pre- and post- World War II, with the majority of the standing generation plants and linear features pre-dating 1930. This is not at all unusual, reflecting the initial growth of electrification as a regular and necessary element in American life during the late-19<sup>th</sup> and early 20<sup>th</sup> century period, the reconstruction and improvement of those pioneer facilities in the years surrounding World War I and then, in general, the virtual cessation of almost all but the most critical maintenance needs during the era of the Great Depression. After WWII, with a return to prosperity nationally and, in the Klamath project area specifically, a huge influx in population and industrial development, growth returns. Post-WWII development of the Klamath Project is characterized by significantly larger facilities that represent not only the improved engineering required for their construction but the shift toward more functional and less “architectural” treatments for what had become an almost blasé attitude toward electricity compared to the excitement that characterized its initial development.

### **2.1 ARCHITECTURE, DESIGN AND ENGINEERING**

American historians of art and architecture now acknowledge the exceptional richness of industrial architecture, which is original in its forms and often pioneering in its use of materials (Bergeron & Maiullari-Pontois, 2000:24).

Industrial architecture, including both the powerhouses themselves as well as the various other structures (dams, flumes, penstocks, etc.) that characterize hydroelectric facilities, was only rarely designed to be “attractive” in the same sense that a designer might approach an office or public building, despite the obvious fact that such industrial facilities almost always represent at least comparable, if not considerably larger, levels of capital investment.

The pioneer power providers were typically struggling young companies embarking on the potentially risky assumption that electricity would in fact be in demand were they to develop the ability to offer it within a given market. The buildings they erected, often small in scale and built of wood such as the first Eastside and Westside plants on the Link River, or of metal-clad wood as at Fall Creek, were typically short-lived. Electricity did, of course, find a market and early power providers like the Siskiyou Electric Power and Light Company, and later the California Oregon Power Company both with and without the hyphen, quickly rose to rank with the most successful and influential business concerns in their service areas.

By the 1910-1920 period powerful privately-held utilities, like the railroad giants of the 19<sup>th</sup> century, could afford to build substantial and often beautiful, if still primarily functional, structures. When such a company replaced an early building, it built to last. Even when employing simple, functional materials such as concrete and steel, utilities built durable, fireproof, utilitarian buildings and features that have admirably stood the test of time. The

nature of the period, when companies built with the intent that their structures would endure, makes many of their engineering feats almost astounding, given the remote locations and the difficulties of obtaining materials and workers that were typically a part of any hydroelectric project. Though hardly extravagant, many power-related buildings of this period also boast architectural detailing.

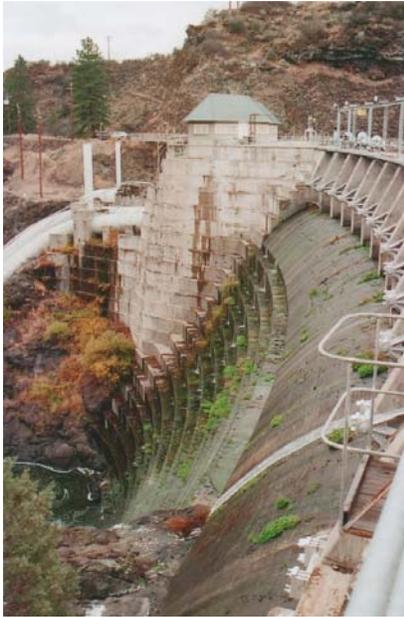


Figure 17: Copco No. 1  
*Author photo, 2002*

While the powerhouse often benefitted from more attention to design, the linear features of a hydroelectric system — the canals, flumes and penstocks that convey water to a generation facility or the transmission lines that had to be erected, often over rugged terrain for hundreds of miles, to send the generated electricity to population centers, were just the necessary infrastructure of a hydroelectric project. The true focus of a hydroelectric project, its *raison d'être*, was the actual conversion of moving water to electric power, a process that was centered on the generation equipment itself, which the powerhouse protected from the elements. That the builders of power projects in the 1910s and 1920s went to the trouble and expense of building anything beyond simple enclosure, adding decorative arch-topped metal windows or strong decorative cornices and constructing functional, simple, but attractive structures literally miles from any expectation of being seen by anyone other than company personnel, bespeaks volumes of both their concern for the equipment and their pride of accomplishment.

Pride and recognition of the value of power generation in building the service area did not diminish in the years following World War II. Its expression, however, shifted primarily to capacity and the sheer scale of projects to meet pressing needs. Aesthetic concerns, while never a primary focus by any means, were virtually overwhelmed by advances in technology. Two changes in particular would forever change the design of postwar hydroelectric developments. The first was the introduction of outdoor generation equipment that entirely eliminated the need for powerhouses in the traditional sense. The second was the rapid improvement in both automobile and road technologies, later coupled with telecommunications and computerization, that would virtually eliminate the need for the “villages” of housing and support facilities that characterized many pre-WWII projects. The small worker communities, often with schools, infirmaries, even stores and entertainment that developed during the early hydroelectric period largely disappeared or were drastically reduced in scope during the late 1960s-early 1970s. Power workers, once housed in company-owned cottages at the powerhouse, could, with the benefit of improved paved roads and more powerful cars or trucks, easily commute from a nearby town or city on a daily basis. With computerization and centralized control even the need for a daily commute ended in many cases and the “villages” of worker housing, shops, schools and other uses

were razed or converted to other purposes. Elements of such worker “villages,” where they remain, reflect an earlier, bypassed period of industrial history in the western United States.

As this context makes clear, resources within the Klamath Hydroelectric Project will only rarely, if at all, merit consideration for their individual design or engineering characteristics. And while many are interesting from an aesthetic or technological standpoint, at least in the simple utilitarian way that characterizes the form, it is their role in the development of the region and the establishment of its inter-connected generation system that primarily makes them significant.



Figure 18: Cottages at Copco No. 2, c1937  
(Source: PacificCorp Archive, 19593, Bk 62, Neg 30B)

## **2.2 PROJECT FACILITIES:**

The following specific resource discussion covers the major elements of the Klamath River Hydroelectric Project, including all generation facilities and major water control elements. It makes no attempt to document each and every remaining built element associated with the construction and operation of the Klamath project or its predecessor entities dating back to 1891.<sup>1</sup> Resources are documented in order of the water's flow, not construction sequence.

### 2.2.1 LINK RIVER DAM, 1921

Controlling the outlet of Upper Klamath Lake, the Link River Dam was built in 1920-1921 to provide water control for both Copco and the Bureau of Reclamation.

That a big dam at the head of Link River which will be used in the reclamation of seventy thousand acres of land in the Wood River Valley and will also be a big factor in making the big Upper Klamath Lake better adapted to logging purposes will be completed next year...is learned today from Manager George Walton of the California Oregon Power Company...The cost and size of the dam, which is being built in accordance with a contract with the U. S. Reclamation Service has not been ascertained...but it is expected it will be between six and seven feet high. It will be made of concrete and will be between four and five hundred feet in length (*Klamath Evening Herald*, 2-January-1919, 1:5).

As completed the concrete Link River Dam was 435'-6" long with an average height of 15 feet. Though owned by Bureau of Reclamation and not within the Klamath Project license, the Link River Dam feeds the East and West Side canals and, as such, is the furthest upstream element of the Klamath hydroelectric system.



Figure 19: Link River Dam and canal, looking east, circa 1930  
(Source: Postcard, Author's Collection)

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<sup>1</sup> Please refer to individual survey forms for additional information on these and other built resources within the project area).

#### 2.2.2 EAST SIDE POWERHOUSE NO. 3 (1924)

H. V. Gates' Klamath Falls Light and Water Company's powerhouse, the first electrical provider in the Klamath Falls region, was built on the east side of the Link River and went into operation in 1895. "This plant was located in an old wooden building on the east bank of the Link River at springs near the North end of Conger Avenue" and was expanded in 1906 by a 12x20 concrete and galvanized metal-roofed structure to house additional equipment (Boyle, 1976:27-28). Purchased by the Moore brothers, the East Side Power Plant No. 1 (as the Gates building is called) operated until 1908. East Side Powerhouse No. 2, a 20x40 foot L-shaped wooden building, was constructed in 1905-06 and operated until June 1917 "...when it had deteriorated sufficiently to need rebuilding" (Boyle, 1976:28).

The present East Side plant, East Side Powerhouse No. 3, was built in 1924 and went into operation in August of that year. The first automatic remote controlled plant in the Copco system, the East Side Powerhouse No. is fed via a ½ mile long 12" diameter wood stave pipe that begins at the Link River Dam. "This generating station is being installed for the purpose of giving improved service to the City of Klamath Falls, which is an important lumber manufacturing center (COPCO, Sept 1923). The East Side Powerhouse No. 3 building is of concrete, with multi-pane metal sash industrial windows and a shallow hipped roof. Modest engaged concrete detailing and fine projecting cornice accent the design.

#### 2.2.3 WEST SIDE POWERHOUSE, 1907-08 WITH C1920S ADDITION

This structure, built by Rufus and Charles Moore's Klamath Light & Power Company as the initial salvo in their competition with the Gates-owned Klamath Falls Light and Water Company, was completed and put into operation in 1908. Originally designed with what has been referred to as "...a unique wood flume spillway which discharged surplus water over the top of the powerhouse." this feature was removed in 1921 as the result of changes to the Link River Dam that allowed the construction of a new saw-tooth spillway with a concrete-lined chute to the river..." (Boyle, 1976:26).

Although not entirely clear, the present Westside Powerhouse compound includes two structures, a gable-roofed wood frame volume and a smaller flat-roofed concrete structure attached to the southwest. The wood volume is assumed to relate to the original Moore construction while the addition, designed in similar fashion to the East Side Powerhouse No. 3 across the river, likely dates from the 1920s based upon its architecture.

#### 2.2.4 KENO DIVERSION DAM, 1966

In 1920, when the "unnamed" San Francisco investors purchased the Keno Power Company, this general area was the site of not only a dam but a small powerhouse as well that had provided Keno with electricity. In 1921 Copco either replaced or augmented

that plant with the installation of a 450kw generation unit that had previously been in use at the Gold Ray Powerhouse in Jackson County (Taylor, 1964:8). In 1927, following resolution of legal and financial issues, Keno Power was officially extinguished and all of its holdings merged into Copco.

In 1931 the Keno Regulating Dam was constructed to regulate the flow of water between Klamath Falls and the site. “The Bureau [of Reclamation] and Copco, in a contract of July 3, 1930 provided that Copco would build a regulating dam at Keno reef...” (Boyle, 1976:52). This dam was replaced with the present structure, a 723’ long concrete gravity dam, in 1966. At the same time generation activities ended and the powerhouse structure was apparently removed.

#### 2.2.5 J. C. BOYLE DIVERSION DAM, 1958

Originally named the Big Bend Dam and completed in 1958 as the first of the post-WWII developments on the Klamath, the J. C. Boyle Diversion Dam is an earth-fill gravity dam 413.5 feet in length with a 117 foot spillway and other extensions that yield a total length of 692 feet. Steel-lined concrete tunnels lead to the surge tanks, impressively sited atop the twin 957 foot long penstock lines that drop to the powerhouse.



Figure 20: Setting the Tainter Gates  
Big Bend Diversion Dam, Nov 1956

(Source: PacificCorp Archive, Big Bend Photographs Vol. 4, Neg # BB 491)

#### 2.2.6 J. C. BOYLE POWERHOUSE, 1958

Built in 1958 and placed in service on October 1, 1958, the J. C. Boyle Powerhouse produces 88,000kW and is the single largest unit of the Klamath Hydroelectric Project. The plant has two outdoor-type generation units with a steel gantry crane system for repair and maintenance. A substation and small metal maintenance building are also

located at the site. Built as Big Bend, the powerhouse was rededicated in honor of John Boyle on June 25, 1962.



Figure 21: “View of powerhouse where two generating turbines will turn out 80,000kW, April 1958”

*(Source: PacifiCorp Archive, Big Bend Photographs Vol.5, Neg # BB 695)*

#### 2.2.7 COPCO NO. ONE POWERHOUSE/DAM, 1912-1918 (EXPANDED 1921-1922)

The first Klamath River project of the California-Oregon Power Company, the dam and powerhouse spanning Ward’s Canyon in Siskiyou County was, for its day, a massive multi-million dollar enterprise that nearly stretched the company to its breaking point. The project began in 1911, when the Siskiyou Electric Light & Power Company began

surveying the area "...just above the head of Ward's Canyon" (Rippon/Journal, 3-May-1911). Construction required "a branch feeder railroad," the old Klamath Lake logging railroad, that connected with the main line of the Southern Pacific Railroad south of Hornbrook. "Practically all the work done in the two years from June 1913 to June 1915 was in the foundation of the dam" and by January 1915 a total expenditure of just over \$1 million dollars still left the project a long way from a completion that was estimated to require an additional \$2million in funding (Boyle, 1976:12-14). With the re-organization of the company and the involvement the McKee interests from San Francisco, work resumed in 1916 after a hiatus.

Work on the big dam of the California Oregon Power Company (sic) now under construction in Ward's Canyon on the Klamath River at Copco...is going forward at a rapid pace...the dam is scheduled to be 112 feet high, 90 feet thick at the base, 20 feet wide at its top and 400 feet in length...just below the dam a large and extensive power house is taking shape...(Rippon/Journal, 22-November-1916).

By 1917, "...handicapped by a shortage of power for present demand"...Copco announced it would put a force of 300 men to work on "its big dam and power plant about 2 miles below the Oregon State Line...as soon as the weather conditions permit (Rippon/Journal, 14-March-1917). On February 3<sup>rd</sup> of the following year the "...great Copco Dam and Power Plant" were dedicated and placed into service (Rippon/Journal, 6-February-1917).

In addition to the dam, powerhouse and directly-related hydroelectric generation or water-management resources at Copco No. 1, the company built a "guest house" on the site, overlooking the dam.

Sometime in 1917, it is said, a beautiful, large rustic guest house was constructed at Copco One, for the convenience of the company officials and guests, and special visitors to enjoy their stay...The large building was built just a few feet back from the high lava bluff, about 50 to 75 yards above the dam, and overlooking the power house, gate houses, dam and the large expanse of lake. There was a wide veranda around three sides...with sturdy railings, so people could...enjoy the views. To get to the Guest House one walked along a cinder path from the cableway winch house, over a bridge-like railed (sic) walkway, and onto the wide veranda...(Rippon, 1986:104).<sup>2</sup>

Other support buildings at Copco No. One were located in a small workers house "village" above the dam site and included a concrete plant, railroad switch yard,

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<sup>2</sup> Unlike most citations in Rippon, which directly refer to the source newspaper article, this description of the guest house is apparently a compilation of some other information and is not specifically credited.

turntable, winch house, blacksmith shop, carpentry shop and various other construction-related structures.



Figure 22: Yreka Rotary Club at Copco No. One Expansion Project, July 1922  
(Siskiyou County Museum Photograph)

In December 1921 work began to raise the height of Copco Dam to 132 feet and to install a second generation unit that would raise the plant's capacity to 30,000 horsepower. Both elements had been eliminated from the initial design as cost-savings measures and in recognition of the fact that the service area in 1915 did not warrant that much additional capacity. The expansion of Copco No. 1 required a large work force and resulted in the construction of two "bungalows" for the engineers at Fall Creek. Many of the workers brought their families so "...another school house was built at Fall Creek, a few feet northerly of the first..." (Rippon, 1986:182). The 1922 school remained in use until a new and modern structure at Copco No. 2 was completed in 1965 (*Medford Mail Tribune*, 15-Dec-1965).

In November the expansion project was completed. Over 1,000 people trekked to the remote site for a dedication ceremony on November 5, 1922 (Rippon/Journal, 8-November-1922, Taylor, 1964:9). As a part of the day-long celebration, with bands, flag raisings, colorful pennants that represented each of the counties and the two states that would benefit from the project's power, numerous dignitaries assembled at the powerhouse at 2:00 for the formal dedication ceremony. Paul B. McKee served as the master of ceremonies. Superior Judge Charles Luttrell of Yreka spoke of the growth of the area and the vision of Copco's pioneers.

Just think of those days and their accomplishments, and my mind goes back to four young men, the Churchill brothers, Alex Rosborough and E. H. Steele, who with a small group of enthusiastic engineers came up the Klamath River, and a short way from here pioneered the Fall Creek power plant only a few years ago, going to build the beginnings of the present vast industrial system, and now seeing the completion of their dreams — the biggest and most efficient electrical plant which we dedicate today (Rippon/Journal, 8-November-1922).

McKee offered closing remarks and dedicated “...a tablet of enduring bronze...” to be affixed to the base of the gatehouse at the top of the dam, there to remain until time shall be no more. Miss Josephine Grant, daughter of Copco’s Chairman, then “...stepped to the switchboard and closed a switch which put the new great power unit in motion, which with the first one will serve the people long after most at the ceremonies have passed away...”(Rippon, Journal, 8-November-1922).



Figure 23: Copco No. 1, Dedication Plaque  
*Author photo, 2002*

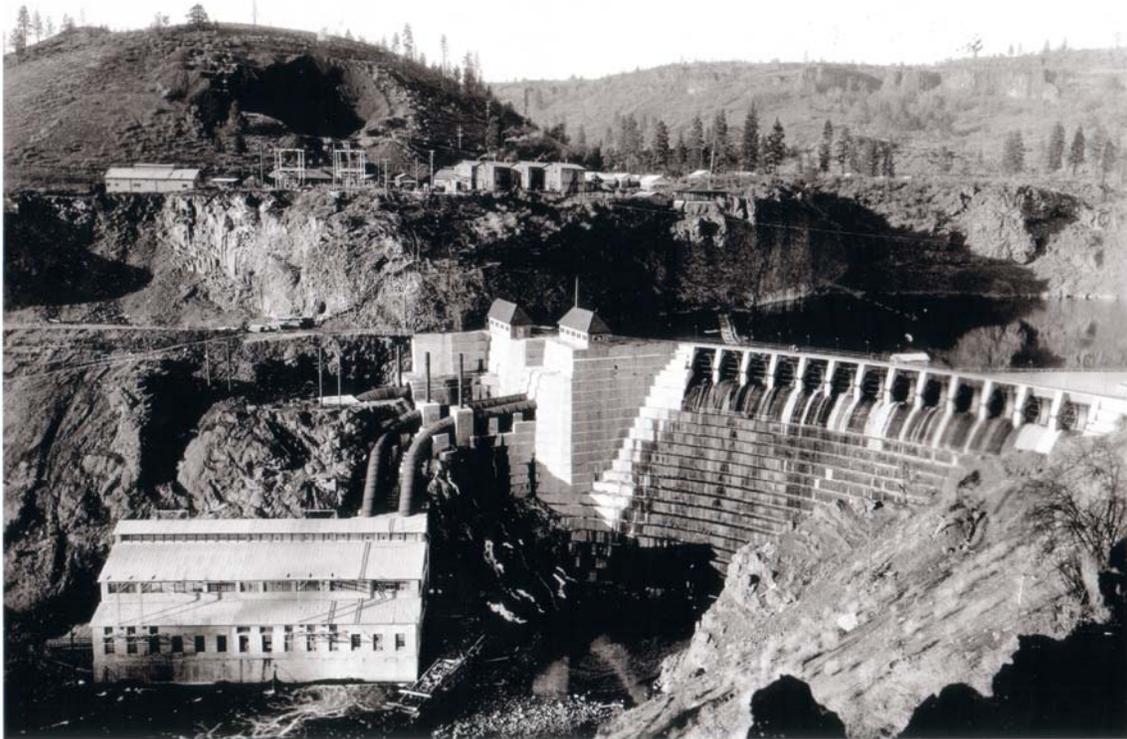


Figure 24: Copco No. 1, looking northeast, 1922  
*(Siskiyou County Museum Photograph)*

#### 2.2.8 COPCO NO. 2 POWERHOUSE, 1925

Begun less than two years after the expansion of Copco No. 1, Copco No. 2 was also envisioned and preliminarily scouted in the 1911-1913 initial survey period of the Klamath but delayed to save funding and await increased demand. By the mid-1920s, with the rapid expansion of the timber industry in much of Copcoland, increased power was again required and so Copco returned to the Klamath River.

This new power house, to be known as Copco No. Two, to be located at the westerly end of the 2-mile canyon, will more than double the capacity of the present No. One plant at Copco, recently enlarged to two units, which has a rating of 30,000 horsepower...The area served by Copco is growing about ten times faster than heretofore. For example, the increase in the population during the last census was 28 percent, while the number of our customers increased 100 percent in the same length of time. Further....these customers use more and more electricity as they find its convenience and economy...(Rippon/Journal, 4-June-1924).

The Copco No. 2 powerhouse sits at the bottom the penstock run, tucked onto a small flat shelf next to the river channel. It is a large concrete structure with multi-pane industrial windows, a projecting cornice line, and other details that typify its period of construction.

To the west are a non-historic office structure and various repair sheds and similar maintenance structures.



Figure 25: Copco No. 2, Powerhouse Site during construction, looking downstream, January 1925  
(Source: PacificCorp Archive, Box 19592)

The construction of Copco No. 2 was the last major project of the McKee-led, Medford-based, corporation before it became a subsidiary of Byllesby's Standard Gas and Electric interests. It was also the last generation project to be built on the Klamath River for the next three decades.

#### 2.2.9 COPCO NO. 2 VILLAGE

Constructed just west of the Copco No. 2 powerhouse house and maintenance yard, Copco No. 2 Village is a series of dwellings built for workers and other company employees, storage buildings, a former cookhouse and a 1965 school building that is now used as a community center. Apparently an outgrowth of "Middle Camp," built during the initial construction period of the project, Copco No. 2 Village grew to include several wood-frame workers cottages along with support and maintenance facilities. As operations evolved over the years the 1965 school building replaced an earlier structure

that had stood at nearby Fall Creek and most of the cottages were removed or replaced by more modern “Ranch” housing. Several c1930s cottages as well as the cookhouse remain.



Figure 26: “Copco 2 Cook and Bunk House, 1942”  
(Source, PacifiCorp Archive, Box 19593, Bk 62, Neg 28A)

#### 2.2.10 FALL CREEK POWERHOUSE, 1903

The oldest hydroelectric site in the Klamath project, the Fall Creek Powerhouse was constructed by the Siskiyou Electric Power Company in 1902-1903 and represents the initial venture of the “Churchill interests” into the production of hydroelectric power.<sup>3</sup>

Construction at Fall Creek began in 1902 and continued, despite being hampered by the weather and shipping difficulties, though the winter of 1902-03.

Work on Siskiyou Electric Light and Power Company’s Fall Creek project is advancing very rapidly. The past month of rainy weather has delayed the work very little. The ditch carrying waters of small Spring Creek into Fall Creek had been completed and timber and earth fill dam across Fall Creek ...is now under construction (Rippon/Journal, 16-December-1902).

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<sup>3</sup> Fall Creek is also the oldest operating generation project in the PacifiCorp system and is among the oldest continuously operated facilities in the Pacific Northwest.

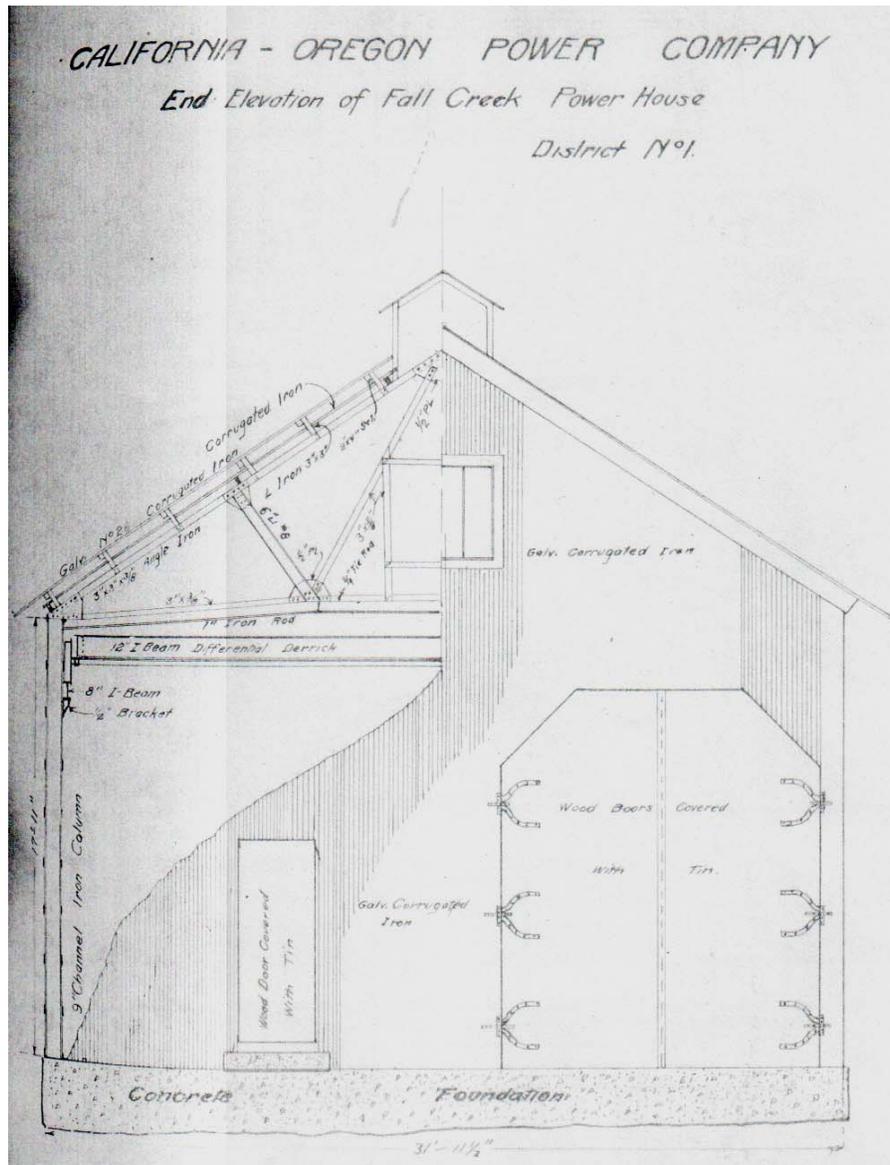


Figure 27: Cross-Section of the Fall Creek Powerhouse, 1915  
 (Source: PacifiCorp Archive, Box 43959)

To ease transportation of large machinery and supplies to the remote Fall Creek site, Siskiyou Power took advantage of the Klamath Lake Railroad line that ran nearby. Period reports of the construction, published regularly in the *Siskiyou Journal*, document the large construction crew and the various tent camps built for housing and support functions. Initial work focused on the ditch and other water features and by late January 1903 sixteen railcar loads of 30" diameter steel pipe had been delivered to the site and "[t]he 150 miles of stranded aluminum wire and the green glass insulators coming from the east" were expected shortly (Rippon/Journal, 27-January-1903). Construction of the powerhouse itself was underway by early March.

Siskiyou Electric Light & Power Company has commenced erection of the steel frame and sheet iron power house at Fall Creek, to have everything ready as soon as the machinery is put together (Rippon/Journal, 3-March-1903).



Figure 28: Copco No. 1 “Blacksmith Shop at North of Addit (sic)”, c1916  
(Source- PacifiCorp Archive, Box 19592)

The two carloads of equipment, “...consisting of a large generator, exciter dynamo, Pelton wheels and other apparatus...” finally arrived at Montague in late May 1903 and, awaiting completion of the Klamath Lake Railroad line, were soon to be delivered to the project site. “Two of the pieces weigh over 8 tons each and the other pieces are also quite heavy” (Rippon/Journal, 26-May-1903). By mid-summer the Fall Creek Power House was near completion.

The power house is to be all steel frame with galvanized iron sheeting, except wooden window sash and one small side entrance door frame. Two big double doors will be provided at each end for machinery, and a chain operated overhead traveling crane hoist will be used to move and place heavy machinery...(Rippon/Journal, 7-July-1903).

In mid-September 1903 all work was completed and the Fall Creek Power House was put into operation. On 1-October-1903 the *Siskiyou Semi-Weekly News*, of Yreka, published a lengthy article describing the new plant, reprinted from the *San Francisco Chronicle*. The first generation unit was a 500kW General Electric AC unit and the “Fall Creek power plant has been arranged to receive two more generator units...” when needed (Rippon/Journal, 1-October-1903).

In 1906 Siskiyou Electric Power & Light Company initiated the first of a series of upgrades and expansions at the Fall Creek plant. In October of that year, with the three-year old plant running a full capacity, a new switchyard was finished and the second generation unit added.

The power house is in course of being enlarged and extended Southward. New foundation will be put in and the building will be improved throughout and a new type of ventilator along the entire ridge of the roof will replace the first round type ventilators, making the steel frame and sheet metal building warmer in the winter and cooler in the summer (*Siskiyou Semi-Weekly News*, 18-October-1906).

The second Fall Creek unit went into operation in June 1907 and by 1909 the addition of a third unit to the facility was underway. This unit, the largest of the three, was apparently in operation by Spring 1910 (Rippon, 1985:105).

For many years Fall Creek, especially prior to the construction of Copco No. 1 and No. 2, was the focus of power operations in the Klamath River project. Comparatively easy to get to, Fall Creek remained a community center even after the construction its significantly larger neighbors. The Fall Creek School, built to the east of the powerhouse in 1911 and replaced in 1923, remained the education center for area children until the mid-1960s. Other structures known to have stood at Fall Creek, in addition to the powerhouse and switchyard, included “...a boarding house [and] bunkhouse..” in addition to tent houses erected during the initial construction (Rippon/Journal, 13-January-1903).



Figure 29: Fall Creek Power House and Transformer Building, 2002  
*(Author Photo)*

During Fall Creek Power Plant construction quite a camp of tents, tent houses, etc., was set up for the workers. However a number preferred a boarding house built just a bit Easterly above the plant, where Mrs. Beck and her daughter were cooks, maintained and lived in this boarding facility (sic)...in later years, quite possibly in the late 1930s, this large white rooming house...was destroyed by fire, being replaced with a modern cottage constructed by Mr. Nunamaker of Yreka... (Rippon, 1986:31).

New transformers, upgraded switching yards and the installation of new and improved equipment have allowed the Fall Creek Powerhouse to remain a functional and efficient unit with PacifiCorp's Klamath Hydroelectric Project for over 100 years. Although virtually all of the once extensive surrounding support structures have been removed, the actual structures of the Fall Creek Power House and the adjacent Transformer Building remain much as they were when completed by the Siskiyou Electric Light & Power Company in 1903.

#### 2.2.11 IRON GATE DAM/POWERHOUSE, 1962

The Iron Gate Dam and Powerhouse, the last of the Klamath River projects both in date of construction and flow of the water, was initiated in 1956 when Copco filed an application for water use with the State of California. In January 1960 FERC approved the company's license application and construction began almost immediately. The facilities were completed and put into service in 1962. Although not built for a half-century, Iron Gate was originally conceived and surveyed as a part of the company's investigations of the Klamath River prior to WWII.

Back in the late 1920s and early 1930s, California Oregon Power Company made complete engineering surveys of [the] Iron Gate site, a narrow volcanic gorge on the Klamath River, some 8 miles easterly of Hornbrook” (Rippon. 1986:1-ig).

Iron Gate Dam is an earth-fill structure with a compacted clay core and concrete spillway. The dam, 173 feet high and 685 feet long was built by the Morrison-Knudsen Company The outdoor type powerhouse is located at the dam’s base and produces 18,000kW. The dedication ceremony of the project, occurring a year after Copco was merged with Pacific Power and Light, was held on February 3, 1962, two days after commercial operations at the facility were started.

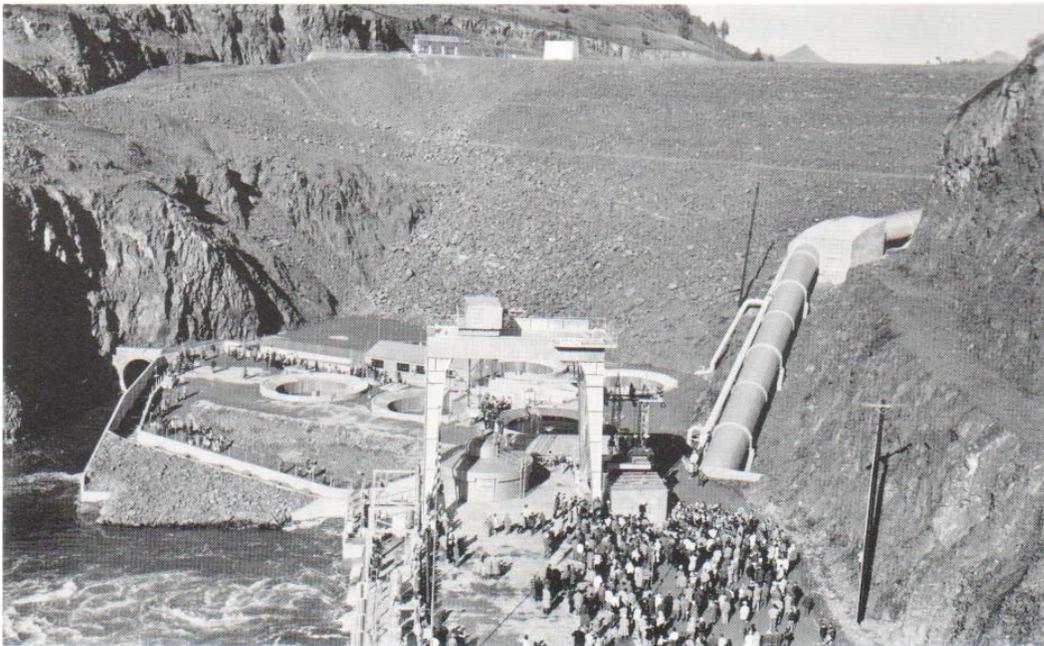


Figure 30: Dedication of Iron Gate Dam, February 3, 1962  
(Source: PacifiCorp Archive, *Big Bend Photographs Vol.8, Neg # BB 1023*)

### **PART 3.0      EVALUATION**

The primary purpose of this context statement is provide background information to allow the enlightened evaluation of the built resources of the Klamath Hydroelectric Project during the Federal Energy Regulatory Commission relicensing process, a federal undertaking. In compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800 et seq), the various generation-related facilities of the project must be assessed against the criterion of eligibility for possible inclusion in the National Register of Historic Places National Register of Historic Places [NRHP].

The following comments provide a global framework to assist in the initial evaluation process.

#### **3.1            NRHP-EVALUATION PROCESS AND STANDARDS**

The National Register process recognizes five basic types of properties that are eligible for listing—Buildings, Districts, Objects, Sites and Structures. Each property by definition will fall within one of these categories for the purposes of evaluation, and each category brings varied analysis requirements and thresholds for significance.

Within the five basic types, individual properties are evaluated for eligibility to the National Register of Historic Places using a multi-part process, recognizing both the inherent historic and physical aspects of the property.<sup>1</sup> To be considered eligible for listing on the National Register a property must have an association to a documented significant aspect of history and it must retain sufficient integrity, or “the ability to convey its significance.”

As defined by the National Park Service, historic significance occurs when a property meets at least one of the following four criteria:

- A) A property is associated with events that have made a significant contribution to the broad patterns of our history; or
- B) A property is associated with the lives of persons significant in our past; or
- C) A property embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D) A property has yielded or may be likely to yield, information important in prehistory or history.

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<sup>1</sup> Discussed in detail below, “districts” as used in this discussion are considered a *single* entity although one may well contain hundreds of individual buildings, sites, objects or other features.

These four criterion are referred to by letter, i.e. “Criterion A” refers to significance for association with events or activities in the broad patterns of history, “Criterion C” refers to significance through design or other physical characteristics, and so forth.

Integral to the evaluation of significance is the definition of a *Period of Significance*. The period of significance is a temporal boundary during which the property achieved historic significance, remained in its historic use, or was associated with the individuals or themes that make it eligible under any of the four Criteria for Evaluation. Periods of significance may vary from a single day, as in a property that is significant for association with a single, distinct, moment in time; a single year, for a property significant due to its construction and design; or some longer period, for a property associated with a significant person, a significant use, or an extended period of occupancy.<sup>2</sup> Once defined, only those elements of the property that were present during the period of significance “contribute” to the property’s historic character. Other elements, including all subsequent alterations, additions, or other changes, may be compatible or non-compatible but are classified as “non-contributing” if they were not present until after the close of the defined period of significance.

It is critical to recognize that a contributing property may, and typically will, have some alterations or modifications that occurred after the close of the period of significance. This is particularly true for resources of the type normally associated with hydro-electric generation, an industry faced with an array of new safety and operational requirements as the result of varying federal and state-level regulations. Such alterations do not, by definition, inherently diminish the potential significance of a property. They are, however, factored into the final element of the assessment process — the evaluation of *integrity*. The National Park Service has identified seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.

To retain historic integrity a property will always possess several, and usually most, of the (seven) aspects. The retention of specific aspects is paramount for a property to convey its significance. Determining which of the seven aspects are most important to a particular property requires knowing why, where, and when the property is significant (NPS, 1997:44).

To aid evaluation, the National Register of Historic Places has established defined *areas of significance* or *historic themes* for varying properties both to streamline evaluation and provide uniform data base entry terms. Use of areas of significance and historic themes are related to the four criteria for evaluation as presented above; i.e. a particular resource may be significant under Criterion “A” and related to one or more areas of significance or themes and, additionally, be significant under Criterion “B” or “C” and related to a second or even a third area of significance.

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<sup>2</sup> An example of a resource significant for one single moment in time might be a location associated with a particular event such as a speech, a break-through invention or, in a more macabre example, an assassination or murder.

At this time, based upon the historic context information developed in Section 2.0 above, the hydroelectric generation, water management, and related support structures of the Klamath Hydroelectric Project may logically fall within one or more of the following areas of significance, depending upon the individual property and its particular development history:

**ARCHITECTURE:** The practical art of designing and constructing buildings and structures to serve human needs.

**COMMERCE:** The business of trading goods, services, and commodities.

**ENGINEERING:** The practical application of scientific principles to design, construct, and operate equipment, machinery, and structures to serve human needs.

**INDUSTRY:** The technology and process of managing materials, labor and equipment to produce goods and services.

## **3.2 APPLYING THE EVALUATION PROCESS TO KLAMATH HYDROELECTRIC PROJECT RESOURCES**

### **3.2.1 PROPERTY TYPE**

The inherent inter-connected nature of the Klamath Hydroelectric Project, with clusters of built resources at various locations along the Klamath River between Klamath Falls, Oregon and Iron Gate Dam, in Siskiyou County, California, indicate that it would be most appropriately evaluated as a whole. The project was first envisioned in 1911, designed and built in phases over the following five decades, and today continues to function, as a single “system” that utilizes the same water flow at each of its varied locations, with upstream features serving regulatory functions for generation facilities further downstream.

The Klamath Hydroelectric Project contains numerous built resources including dams, powerhouses, support buildings, water management features, repair sheds and worker housing which may each individually fall within the property type categories of “Building” or “Structure” depending on their use.<sup>3</sup> Other project facilities may be appropriately documented as “Sites” or, potentially, “Objects.”<sup>4</sup> And, while the FERC license boundary could, at least theoretically, serve as the basis for a National Register “District” evaluation, large portions of the project area remain essentially undeveloped, rugged terrain, even when traversed by a linear project feature such as a flume or pipeline. In other cases, particularly the Fall Creek Powerhouse and Copco No. 1, individual elements of the Klamath Project could easily be treated as individually significant properties, despite their historical role within the larger Klamath “system.”

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<sup>3</sup> In general, for National Register of Historic Places purposes, a “building” is one intended for human habitation or occupancy of some sort. A “structure” is a built resource such as a dam, bridge, or other work that does not allow human occupation.

<sup>4</sup> These acceptable resource types are defined by the National Park Service in NR Bulletin No. 16A (NPS, 1991:15).

As a result of the shared design and operation of the Klamath Hydroelectric Project, where individual “nodes” of built resources form intrinsic elements of a larger system joined by operation if not physical development, it appears the most logical approach to National Register evaluation of the Klamath Hydroelectric Project would be as a *Multiple Property Submission* or MPS.

A multiple property submission, formally known as a “Thematic” nomination or grouping consists of at least two related individual properties that share a common association but may or may not be geographically contiguous.<sup>5</sup> Typical MPS submittals include the “Covered Bridges of Oregon MPS” and “Light Stations of California MPS.” Other MPS have focused upon the work of a particular architect, works in a specific architectural style or period, or, as an example more appropriate to the resources of the subject, the “Hydroelectric Power Plants in Washington State, 1890-1938 MPS.”<sup>6</sup> By definition an MPS submittal defines a historic context and the pertinent association required for eligibility and then each individual resource that meets the registration criteria defined within that document is individually nominated for inclusion on the National Register of Historic Places.

Under a MPS framework such as “Hydroelectric Facilities of the Klamath River Basin” the resource clusters at Copco 1 and Copco 2 might result in *district* documentation where more individual properties such as the Link River Dam, the Boyle Regulating Dam, or others might be treated as single *structures*. Other resources, such as the East Side Power House, might be best documented as single *buildings*, and so on. All would fall within the overall significance of the development of Hydroelectric Power in the Klamath region.

While the MPS format was devised for formal listing of resources on the National Register of Historic Places the format, recognizing geographically dispersed but related resources, also provided a framework for Determinations of Eligibility. The later, in compliance with Section 106 of the National Historic Preservation Act of 1966, as revised, will likely constitute the extent of documentation undertaken in connection with the FERC relicensing process for the Klamath Hydroelectric Project.

### 3.2.2 INTEGRITY

Following the process outlined in 3.1, having determined that the Klamath Hydroelectric Project has significant association under the eligibility criterion, its integrity, or ability to relate that association, must be evaluated. As defined by the National Park Service, “integrity” is present when a historically significant resource retains sufficient connection to its character defining features.

To be listed in the National Register of Historic Places, a property must not only be shown to be significant under the National Register criteria, but it also must

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<sup>5</sup> Groups of resources that share a common association but are geographically contiguous constitute a *district*.

<sup>6</sup> For a complete listing of the 1,400+ multiple property documents that have been prepared nationwide see <http://www.cr.nps.gov/nr/research/mpslist.htm>.

have integrity. The evaluation of integrity is sometimes a subjective judgment, but it must always be grounded in an understanding of a property's physical features and how they relate to its significance. Historic properties either retain integrity (this is, convey their significance) or they do not (NPS, 1991:44).

Integrity and condition are not the same when applied to the evaluation of potentially significant properties. "Condition" refers to the present state of usability or suitability for the intended function. "Integrity" however refers solely to a connection to the historic character. Any particular property may retain sufficient integrity to convey its significance while otherwise being in poor condition from the standpoint of usability.<sup>7</sup>

To guide the evaluation of integrity NPS has defined seven aspects or qualities that reflect the various elements of integrity, depending upon the particular resource type *and* its areas of significance. As discussed earlier, the seven aspects of integrity are:

**LOCATION      DESIGN      SETTING      MATERIALS**  
**WORKMANSHIP      FEELING      ASSOCIATION**

It is critical to recognize that in order for a particular property to have integrity and the ability to relate its significance, does not necessarily require that it retains all seven aspects of integrity simultaneously or in equal proportion. In fact, in most situations, properties change somewhat over the time required for them to achieve significance and often are altered or modified during that period.

To retain historic integrity a property will always possess several, and usually most, of the aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance. Determining which of these aspects are most important to a particular property requires knowing why, where, and when the property is significant (NPS, 1991:44).

The property must, however, retain the essential physical features that enable it to convey its historic identity. The essential physical features are ...those that define both why a property is significant...and when it was significant...they are features without which a property can no longer be identified (NPS, 1991:46).

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<sup>7</sup> An example of this situation might be the Guest House at Copco No. 1, which lacks virtually all of its superstructure yet, through location and its remaining stone foundation and chimney, remains clearly recognizable as the structure built on this site as a part of the 1918-1922 development period. The guest house, therefore, retains "integrity" even while it obviously is not in any useable condition



Figure 31: Group at Copco No. 1 Guest House, c1920  
(Source: PacifiCorp Archives, Bk 52, Neg 6)



Figure 32: Guest House, Copco No. 1, 2002  
(Author Photo)

In the evaluation of industrial resources such as those associated with the development of hydroelectric generation facilities in the Klamath River, the inherent nature of the project as continually operating generation facilities complicates the evaluation of integrity since new technologies are often present to allow a powerhouse, water management feature or other

element continue functioning in a highly structured, highly regulated, environment.<sup>8</sup> The evaluation of integrity, therefore, must recognize the appropriate eligibility criterion and its relationship to design, as opposed to function, when assessing the impact of such modifications.

While modified by more than a century of continuing hydroelectric generation activity the resources of the Klamath Hydroelectric Project in general retain a high degree of integrity in most if not all of the seven aspects of integrity. Minor alterations, particularly to support facilities or improvements to generation facilities that enable their continued function within the system do not seriously reduce the ability to convey original character or association with historic events and themes under this context. Although each individual element will obviously require individual evaluation, at this point, as a whole, *the Klamath Hydroelectric Project is considered to maintain high integrity* in all seven aspects and effectively convey its association with the development of electric generation and development in the southern Oregon-northern California region.

### 3.2.3 PERIOD OF SIGNIFICANCE 1903-1958<sup>9</sup>

The National Park Service requires that a fixed temporal window, or “period of significance,” be defined as a part of the National Register evaluation process. “Period of significance is the length of time when a property was associated with the important events, activities or persons, or attained the characteristics which qualify it for National Register listing” (NPS 1991:42).

Generally a period of significance begins with the date of the earliest documented resource within the nominated area that can be appropriately placed within the defined area of significance. In this case, in the Klamath Hydroelectric Project study area as defined in Section 1.1, the earliest known generation activities occurred in 1895 with the development of the first East Side Power House in Klamath Falls.<sup>10</sup> However no built element of this structure is known to survive. The earliest surviving hydroelectric generation-related resource within the project area is the Fall Creek Powerhouse, begun in 1902 and completed in 1903. As a result 1903 serves as the beginning of the period of significance.

The closing date of a period of significance for “...activities begun historically that continue to have an importance,” is generally subject to the so-called “50-year rule” of the National Register of Historic Places process (NPS, 1990:42). Based on the 2006 FERC license renewal for the Klamath Hydroelectric Project, the period of significance would logically end at 1956, including all the main generation resources built prior to WWII and defining both the J. C. Boyle and Iron Gate developments as non-historic, dated from 1958 and 1962, respectively. There is precedence in FERC-license situations, which by nature extend the

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<sup>8</sup> A typical example might be modifications to a dam or water feature required to improve fish passage. Such changes are not historic but might be accomplished in a manner that either supports historic integrity or not.

<sup>9</sup> The closing date of 1958 may require re-evaluation (See page 59).

<sup>10</sup> James Quinn’s power house on the Shasta River occurs slightly earlier with the general “Copcoland” area but is not within the Klamath project boundary as herein defined.

Federal undertaking as defined by 36 CFR 800 over a long period of time subsequent to the actual date of relicensing, to extend the 50-year requirement so as to include properties that will achieve that status within the license period. At this point the Boyle development, first envisioned as early as 1911 and completed in 1958 (48 years old in 2006) is considered appropriately included, reflecting the important post-war developments on the Klamath River that responded to area growth as detailed in Section 2 of this context.

*The period of significance for the Klamath Hydroelectric Project is established as 1903-1958. After additional consultation with appropriate state and federal agencies, the period may either contract to 1956 in compliance with the standard 50-year rule, or expand to 1962 to include the Iron Gate development, envisioned in 1911, which will be 44 years old in 2006.*

### **3.3 SIGNIFICANCE**

The resources of the Klamath Hydroelectric Project were constructed by the California Oregon Power Company and its various pioneer predecessors between 1902 and 1962 and are now owned and operated by PacifiCorp. These resources are strongly associated with the early development of electricity in the southern Oregon and northern California region and played a significant role in the area's economy both directly, as a part of regionally-significant, locally-owned and operated, private utility and indirectly, through the role that increased electrical capacity played in the expansion of the timber, agriculture, and recreation industries during the first six decades of the 20<sup>th</sup> century.

Located along a waterway that crosses the Oregon-California border and serving a sparsely-settled multi-county region, *the resources of the Klamath Hydroelectric Project are considered regionally significant under Criterion "A" for listing in the National Register of Historic Places.* Specific portions of the project, most notably Fall Creek Powerhouse and Copco No. 1, may have additional significance under Criterion "C" for their very early construction, design and engineering characteristics, and exemplifying the design of pioneer-era hydroelectric generation facilities.

#### **3.3.1 APPLICABLE AREA OF SIGNIFICANCE AND HISTORIC THEMES**

The Klamath Hydroelectric Project is considered most significant for its role in the development of hydroelectric generation capacity in the southern Oregon-northern California region and for the role that development played in the expansion of the regional economy during the period. The applicable areas of significance for the project, therefore, are **Commerce**, for the development of electrical services, and **Industry**, for the economic impact on the area as a result of abundant hydropower capacity. Individual resources such as the Fall Creek Powerhouse and Copco No. 1 may additionally be evaluated in connection with the area of **Engineering**.

### **3.4 EVALUATION SUMMARY**

Based on the historic narrative presented in Section 1 and the property identification of Section 2, the resources of the Klamath Hydroelectric Project appear to have significant association with the development of the region under National Register eligibility Criterion A during the period 1903-1958. At this time, pending field survey and documentation, a sufficient number of project resources appear to retain high integrity and the ability to relate that significant association within areas of significance including Commerce, Industry and, in specific instances, Engineering.

The Klamath Hydroelectric Project should be **considered eligible** for listing on the National Register of Historic Places, subject to individual evaluation of sufficient integrity to relate that association effectively. “Multiple Property Submission” documentation is recommended as the appropriate format.



#### **PART 4.0 TREATMENT: FUTURE RESEARCH OPPORTUNITIES**

This section of the Context Statement identifies research needs, potential areas for further study, and opportunities for education or interpretation that may be appropriate mitigation strategies under the 106 Process. “Treatment” typically serves as a starting point for any Memoranda of Agreement between state and federal agencies involved with the management of historic or cultural resources. A Historic Properties Management Plan (HPMP) that serves as the process guide for future actions in the Klamath Project is assumed to be a given. Other possible mitigation/documentation options include:

- 1) Formal MPS Documentation & Submittal (as opposed to the 106-required “Request for a Determination of Eligibility”).
- 2) On-site educational or interpretive display: This could be at Iron Gate, perhaps in conjunction with the existing interpretative kiosk near the fish hatchery or at other public facilities associated with the Klamath project. Displays could provide explanatory materials on the development and operation of the Klamath Hydroelectric Project as well as its significant role in the history of the region. An alternate, or additional, facility could be placed in Klamath Falls, perhaps near the Link River Dam or in a local park. Additional road-side turn-outs or display signage at the various generation nodes might be a part of a “driving tour” through the project.
- 3) Publication: No comprehensive history of Copco or PacifiCorp’s Copco division has been published. This context provides a basis for a possible academic or general interest work on the history of electrification in the southern Oregon-northern California region.
- 4) Archival: The PacifiCorp Archive of materials related to Copco and the Klamath Basin represents an huge trove of largely unknown images that document not only the company and the area it served but, in many ways, the initial development of an entire industrial infrastructure. Many of these images and documents are assumed to be unique and irreplaceable. While these archival materials are safely stored, they are only generally catalogued and as a result remain somewhat inaccessible and thus largely under-used. In particular the conservation of irreplaceable acetate-based negatives, detailed and comprehensive indexing, and appropriate archival-quality storage would be an appropriate, and valuable addition to the historic record. Duplicate prints could be donated to appropriate historical societies or otherwise made available for academic study.



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