

Gold Ray

Unusual Rope-Driven Plant to Retire; PP&L Offers Historical Site to County

To visit Gold Ray is to step backwards in time.

The dam and powerhouse, located on southern Oregon's Rogue River, seven miles east of Gold Hill, belongs to the era of early power generation.

The second oldest operating hydroelectric plant in the Company's system, Gold Ray continues to turn out kilowatts as it did six years before Pacific Power was a company.

Gold Ray will soon go "off the line" as surplus property but plans are underway to keep the plant, with its history and charm, from being relegated to a forgotten retirement.

Pacific wants to turn the plant and its scenic backwaters, which shelter a large wildlife refuge and bird sanctuary, over to public ownership and is negotiating with Jackson County to do so. Representing PP&L in the negotiations is Larry Espey, recreation facilities director, who indicates there is considerable interest by local residents to keep Gold Ray intact as a historical museum.

Gold Ray has the distinction of being one of the *first* hydro plants and is among the *last* of its kind. Company officials believe Gold Ray is one of two remaining rope-drive plants still in operation in the United States.

Planning for the Gold Ray plant started in 1902 when Colonel Frank Ray and his brother purchased the river site from a miner named Dan Condor with the intention of providing a source of power to nearby gold mining camps. When the plant went into service on December 7, 1904, it also supplied the city of Medford with its first hydro-generated energy. Operating as the Condor Water & Power Company, it delivered wholesale power to the city over a 12-mile transmission line.

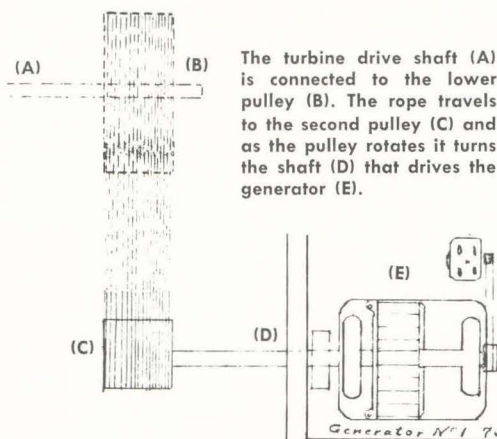
The dam portion of the facility was originally built of logs which were replaced by concrete in 1941. Two 750-kilowatt generators were installed in 1905, replacing the initial unit, and the third was added in 1908. The third unit was removed to the Keno plant on the Klamath River in 1921 and again to the Fall Creek plant on the same river in 1946 where it is still in operation.

The rope drive feature of the plant, as

well as its length of service make Gold Ray unique to the Company's hydroelectric operation. Normally the energy of water is transmitted from swiftly turning underwater turbines to vertically mounted generators via a solid steel drive shaft.

Gold Ray's rope drive adds another step.

Two multi-grooved pulleys for each of the two generators are connected by 1,600 feet of 1 $\frac{3}{4}$ inch manila rope that rides in



the 20 grooves, moving through first one pulley and then the other in a continuous manner. The turbine pulley, located in the bottom of the powerhouse, is linked to the turbine drive shaft. The shaft is propelled by the force of the water in the plant's forebay turning huge underwater turbine runners connected to the shaft which, in turn, activates the lower pulley. The rope travels to the second pulley on the powerhouse floor several feet above. The upper pulley as it revolves 360 rpm rotates the horizontally-mounted generator to produce electricity.

The rope drive method is troublesome—and has been since it first went into operation 67 years ago.

Gerry Morningstar, retired Siskiyou power superintendent, remembers when he went to work at the plant in 1928.

"You needed to be half sailor to work there. Even then, Jim Robins, the chief operator, was the only one who knew how to splice the rope when repairs were necessary."

"We rigged up a mechanical device above the turning ropes," Morningstar recalls. "When the splice started pulling out, the unravelling strands would hit the device

and trigger a bell. When it rang, you knew trouble was coming. All you could do was shut down the plant and call Mr. Robins."

The rope still causes problems as rope splicers aren't any more common now than then. The skill has been passed down from one employee to another over the years. As far as can be determined, Robins instructed J. "Frank" Ward who retired as chief operator at the plant in 1962. Ward's successor was Willis Mann, operator at the plant, whose rope splicing duties have been carried on since he went on long term disability in 1970 by George Yell, labor foreman, Rogue power maintenance.

The establishment of Gold Ray as a museum would be a fitting retirement for the plant. Entering the rectangular powerhouse is like entering another age. At the end of the building, two General Electric generators, one with the nameplate bearing patent marks of 1897, still hum vigorously. At the right, the operator's house, a small room enclosed in glass, offers refuge from the constant sound of the generators. A well-used shiny brass doorknob allows entrance to the room where logs, noting generation statistics, have been kept in the same place for 67 years.

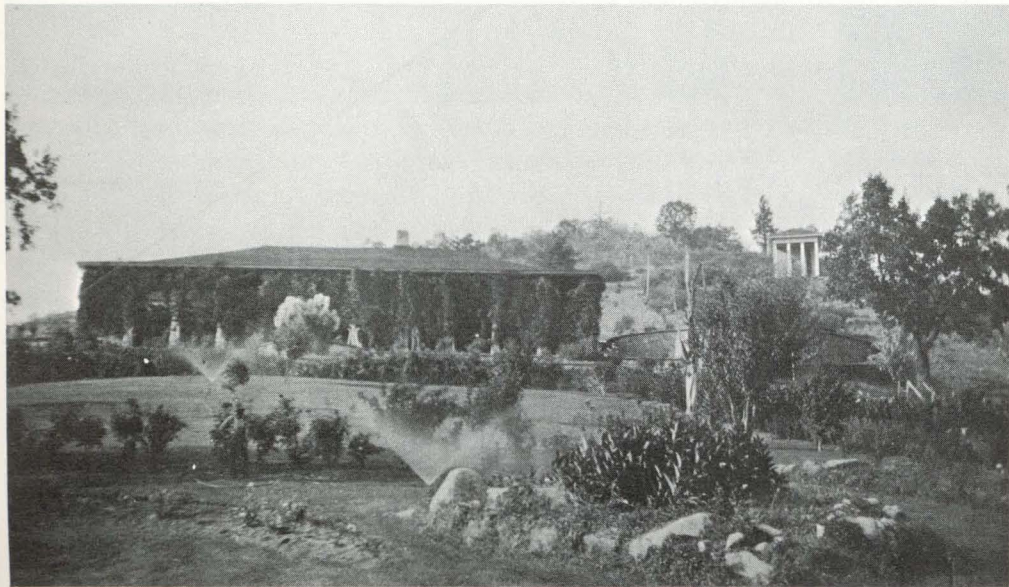
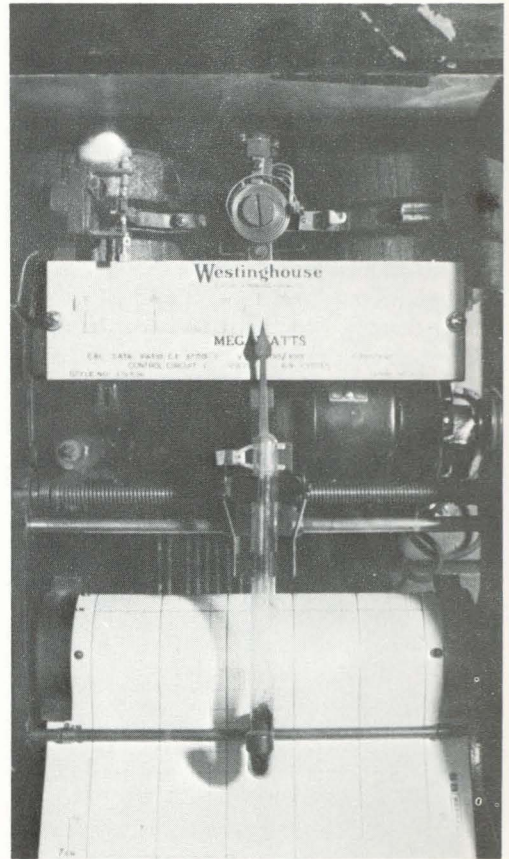
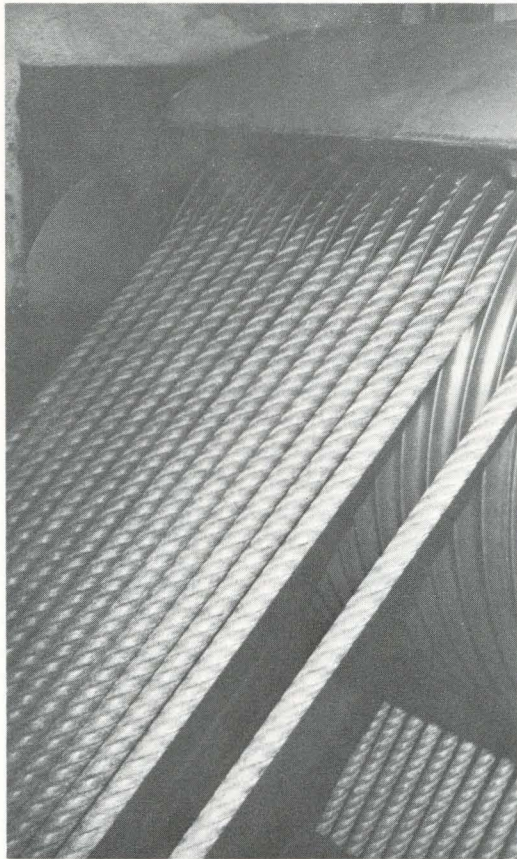
On the left side of the building, the regulating panel, the plant's control center, stands like a prop out of a Boris Karloff movie. Its gray marble front is filled with strange dials, mysterious black handles and curly wires.

On the hill above the plant stand two white houses, reminiscent of the days when operators lived at the site. The houses replaced an expansive clubhouse used by the Rays for entertaining.

While negotiations as to ultimate disposal of the plant are underway, the plant is operating "on its own."

"We've installed the last rope at Gold Ray," declares Terry Hercher, Rogue power superintendent.

It would take a thousand plants with Gold Ray's present 1,250 kilowatt capacity to stack up against the output of new PP&L plants such as Centralia with its 1.4 million kilowatt capacity. But there is no way to measure the nostalgia of Gold Ray, of the men who built and operated it, and of its importance in the first chapter of the power generation story in Oregon.



PHOTOS FROM THE TOP, left to right: Gold Ray dam, originally built of logs, has a wildlife refuge and bird sanctuary in backwaters: The powerhouse contains a working museum: One of the unusual rope pulleys is inspected by Maurice Chappel, operator: The rope rides in the 20 grooves of the pulley: One of the early recording devices still in operation: Clubhouse built by the Rays for entertaining was part of earlier history.