

The Vancouver Power Company.

The Vancouver Power Co. is developing a hydro-electro transmission plant which will be capable ultimately of delivering 30,000 horse-power to Vancouver and the surrounding districts. Work was commenced in the early summer of 1902, and while the final completion of the undertaking is yet a matter of a year or more, the generation of power sufficient for immediate requirements will, it is expected, be possible by December of this year. Primarily, the installation of the plant is for the purpose of furnishing light and power for operating the street and inter-urban railways in Vancouver, New Westminster and Burnaby, but the installation has been designed to furnish 30,000 horse-power, for which the hydraulic end of the plant is being developed; the initial installation of machinery being equal to the generation of 9,000 horse-power.

The sources of water supply for power are two very deep glacial lakes, known as Coquitlam and Trout, or Lake Beautiful. The first mentioned lake has an area of 2,300 acres, and it is at an elevation of 32 ft. above the latter, which has an area of 460 acres. Both lakes are surrounded to their outlets by rugged mountains, rising abruptly from the shore lines, and between the two towers a granite range 4,000 ft. above water level. It

is through this range that a tunnel 13,000 ft., or nearly 2½ miles in length, is being driven to connect the two lakes for the purpose of using the stored waters of Coquitlam for the main supply, and Trout lake as a balancing reservoir. Trout lake alone as a source of power is of no value whatever, as the watershed is very limited, and the outlet is practically dry except during the rainy season.

The first plan of development proposed some years ago was to convey the Coquitlam lake water by means of a flume along the steep hillside a distance of about seven miles, placing the power house on Burrard inlet, nearly opposite Port Moody. The soil along the proposed flume route is of glacial silt, and exceptionally subject to landslides, which would make expensive construction, and be subject to serious interruptions which would cripple the service for long periods, no matter what precautions were taken. This scheme was discarded on account of there being no storage at the end of the flume and the heavy cost of depreciation and maintenance, and the unreliability of service. It was then suggested that a tunnel connecting Coquitlam lake with the North Arm be constructed. While such a tunnel would be slightly shorter than the one now under construction, the main objections were that there was no possible means of procuring storage to act as a balancing reservoir, and also that the tunnel

would of necessity be large enough to carry water for the highest peak load. It was then decided to run the tunnel from Coquitlam to Trout lake. Under this plan of development Trout lake acts as a balancing reservoir, and the tunnel required is only large enough for the average instead of the peak load. The depreciation and maintenance on the hydraulic system will be exceedingly low, and the reliability of service to be obtained will make an ideal installation.

Both lakes will be controlled by dams at their outlets, and from the dam at Trout lake steel pipe lines will convey the water under an effective head of 390 ft. to the power station, located just above high tide mark on the shore of the North Arm of Burrard inlet, into which the water wheels will discharge. The dam at the outlet of Coquitlam lake will raise the water 12 ft. above low water level. It will be constructed of rock-filled timber crib, a type which has proven thoroughly successful in many mountainous streams. The materials are provided by nature in ample quantity at the point where they will be used. The dam will be planked and constructed with an apron, extending far enough down stream to prevent any back-cutting action by the water flowing over.

The tunnel is 9 ft. wide by 9 ft. in height, with rounded corners, and is being driven from both ends by compressed air drills. At

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