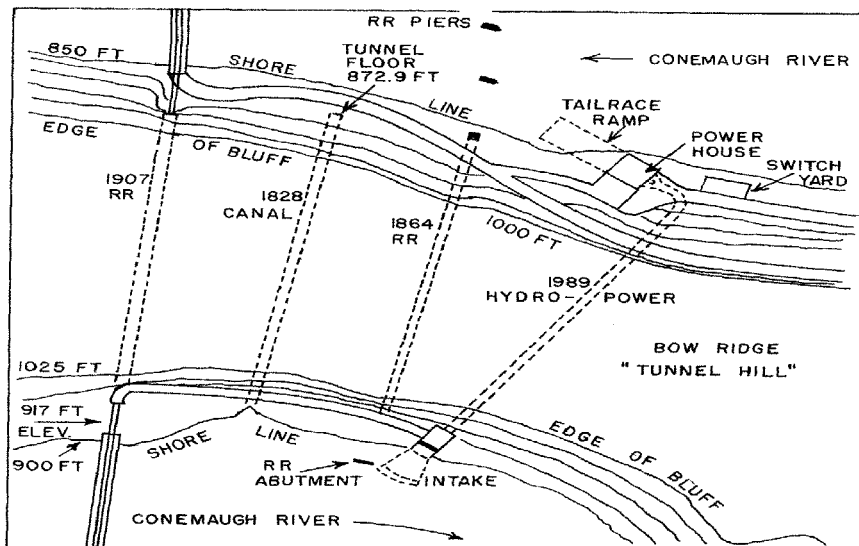


# WEST PENN TRAIL at WATER - POWER TUNNEL



A steel pipe, 20 feet in diameter, delivers water to a hydro-electric power station located on the west side of Bow Ridge, below the Conemaugh Dam. Usually, all of the gates in the floodcontrol dam are closed so that the entire flow of the river passes into this tunnel and goes on to the powerhouse, where the water falls, 50 feet, through two turbines that spin electrical generators rated at 15 megawatts. The annual output, 56 million kilowatt-hours, would supply 10,000 homes.

This tunnel opening is covered by a strong metal screen that prevents floating debris from getting in to damage the turbine blades. After each rain storm or snowmelt event, high river flows bring tree branches and debris onto the intake screen;

that flotsam clogs the screen, impeding the flow of water to the turbines.

To remove the trash from the screen, a rake, attached to a moving chain, is pulled up from the bottom of the trash rack.

To provide the 50-foot waterfall used to spin the turbines, the U.S. Corps of Engineers maintains the lake level elevation at 900 feet (above sea level); river level elevation, at the outflow from the powerhouse, is 850 feet.

Difference = 50 foot waterfall.

When heavy rains elevate the lake level, the turbines cannot pass the high flow rate in the river, so, at such times, sluice gates in the dam are opened, to allow the unused water to bypass the power station at a rate controlled to prevent flooding at Pittsburgh.