

JT Winston
Hydroelectric Power

Hydroelectricity is a very interesting way to create power, and is also a cleaner way compared to other power types. Natural power interests me to a large extent.

The question that I investigated was, if the angle of the valve (volume and pressure) affects how much power the hydroelectric power plant produces then the wider the valve is open the more power the hydroelectric power plant will produce.

To conduct this investigation I constructed a model hydroelectric power plant. Using this model I was able to find how the angle of the valve affected how much power the hydropower plant produced.

The answer that I obtained through my tests was that my hypothesis was correct: the wider the opening of the valve, the higher the amount of power it will produce. My data supports this conclusion because when the valve is fully open ($\frac{3}{4}$ inch) it produces an average amount of power of 0.18 20 DCV (Direct Current Volts), when the valve is $\frac{3}{4}$ ($\frac{9}{16}$ inch) open it produces an average of 0.17 20 DCV (Direct Current Volts), and when the valve is $\frac{1}{2}$ ($\frac{3}{8}$ inch) of a turn open it produces an average of 0.15 20 DCV (Direct Current Volts).

I believe that my project has the potential to contribute to the area that I live in because there are many lakes and rivers that could be harnessed for the production of hydroelectric power around the Montrose area.