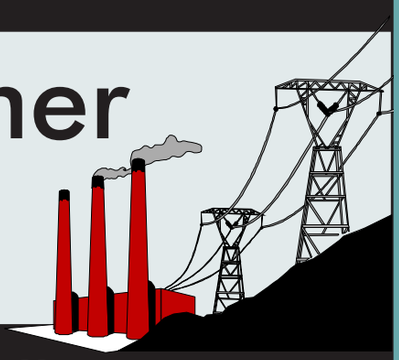
Florida Public Service Commission

Consumer Bulletin

Braulio L. Baez, Chairman



The Electric System

The production and delivery of safe, reliable, and affordable electric power to homes and businesses in Florida requires the coordinated function of several components. Each facet of this far-reaching network has to operate efficiently in order for electric consumers to realize the benefits of the system as a whole.

While an electric transmission and delivery system has scores of highly technical and often complex aspects, it can be broken down into two major categories: generation of electricity and the delivery of electricity to consumers.

Electric generation in Florida occurs through the use of a number of fuels. Coal, once the dominant fossil fuel of choice, gave way to oil, and more recently, natural gas. A number of power plants in Florida retain the ability to burn either oil or natural gas to maximize efficient operations. Florida also receives some of its power from nuclear reactors at three locations around the state. Whether a power plant uses fossil fuels or employs a nuclear reactor, the generation process involves the production of massive amounts of steam. The steam drives the blades of a turbine, which can be thought of as a large motor. The turbine rotates a generator and creates electric current.

Once electricity is produced, a system must be in place to deliver the power to consumers. The system responsible for the delivery of power is usually thought of as having two components, transmission and distribution.

Transmission lines are made of current-carrying materials such as copper or aluminum in various configurations. The purpose of a transmission line is to carry high-voltage electric power – sometimes exceeding 765 kilovolts — in large quantities from a power plant. The distances traversed by high-voltage transmission lines are often great.

Because the high-voltage current carried over transmission lines is not usable by residential and commercial customers, transmission lines usually terminate at a substation near the users' locations. Transformers in these substations, sometimes referred to as "step-down" transformers, reduce the voltage. From these substations, distribution lines carry electricity to customer locations. For users needing even lower voltages, voltage can be reduced by a distribution transformer or a line transformer to a level of 110 volts.

In order for business and residential customers to have access to an uninterrupted flow of reliable power, every aspect of the generation and transmission system must function as designed. This precise functioning extends to arrangements between electric utilities to interconnect their systems. Often times investor-owned utilities will have points of interconnection with municipal utilities or electric cooperatives and vice-versa. The purpose of having electric utilities connect their systems is to provide a greater measure of reliability for consumers. If a utility experiences a disruption in its system, power can be obtained from an interconnected utility until power is restored.

Braulio L. Baez is the Chairman of the Florida Public Service Commission. The PSC sets the rates regulated utility companies charge for natural gas, electric and telephone service within the state. In 36 counties, it sets the price you pay for the water you drink, if your water company is privately owned.

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