How Turkey Point Works

Turkey Point nuclear plant is similar to fossil-fired electric generating plants because it uses steam to generate electricity. But instead of burning oil or coal in a boiler, Turkey Point uses uranium fuel inside a nuclear reactor to generate steam.

Here's how it works:

Uranium atoms are split apart in a process called nuclear fission. As more and more atoms split inside the reactor, a large amount of heat is produced. This heat is absorbed by the first of three separate water systems in the plant called the *primary system*. The radioactive fuel is contained in the fuel assembly and does not come in contact with this water system.

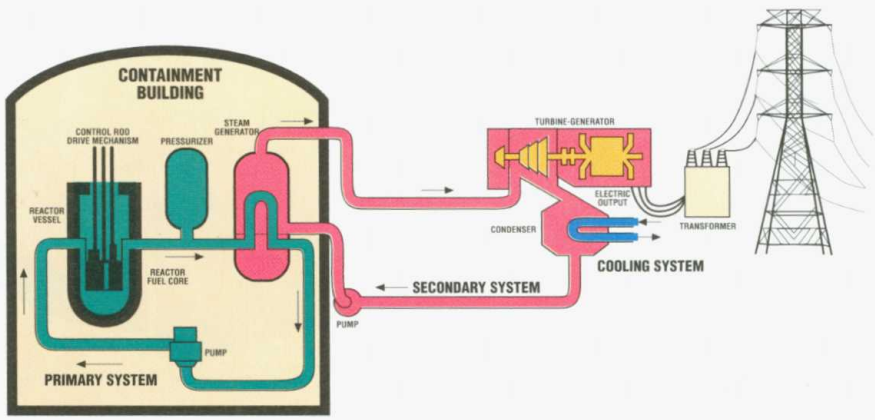
The primary water system is kept under pressure so that it does not boil. It passes through thousands of tubes in the plant's steam generator where the heat is transferred through the tube walls to another water system called the *secondary system*.

The heat turns water in the secondary system to steam. The steam pushes against the blades of a turbine, causing it to spin.

The turbine turns a generator on the same shaft to produce electricity.

As the steam leaves the turbine, it passes over hundreds of pipes carrying a third water system: the *cooling system*. Cooling water from a series of special canals condenses the steam back to water for reuse in the steam generator. Water from each system is physically separated from water in the other systems.

How Turkey Point Power Plant Works



Radiation-- A Part of Everyday Life

Radiation is energy that is given off as a particle or wave. It is everywhere and can be both natural and man-made.

Radioactive elements are scattered in small amounts throughout our environment. About 82% of the radiation to which the average person is exposed annually in the United States comes from natural sources: our food, water, soil - even our homes. Additional radiation comes from exposure to man-made sources such as dental and medical X-rays, color televisions, computer monitors and smoke detectors. Less than 1% of radiation to which people are exposed comes from nuclear power plants.

Measuring radiation

Radiation is measured in units called *rem* and *millirem* (one rem equals 1,000 millirem). Most people routinely receive an average of 360 millirem of radiation a year from all sources. A coast-to-coast jet trip results in about five millirem of radiation exposure. Living and working one mile from a nuclear power plant - 24-hours a day for an entire year - results in only one-half of one millirem of exposure.

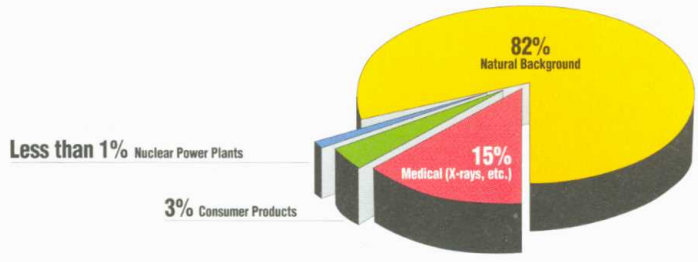
How is radiation monitored at Turkey Point?

Monitoring is done by FPL, state and federal agencies. Numerous measuring devices have been placed in and around the Turkey Point nuclear plant to monitor radiation levels. These instruments can detect minute amounts of natural background radiation levels.

If there were any increase in those radiation amounts, this constant monitoring would alert plant operators, who in turn, would notify state and county officials.

Sources of Radiation

Natural Background (Soil, sunlight, etc.)	82%
Medical (X-rays, etc.)	15%
Consumer Products (T.V., smoke detectors, etc.)	3%
Nuclear Power Plants	Less than 1%



Source: National Council on Radiation Protection Measurements