The Joseph M. Farley Nuclear Plant, located 30 miles east of Dothan in southeast Alabama, is a two-unit, Westinghouse pressurized water reactor plant with a generating capacity of 1,720 megawatts. Owned by Alabama Power Company and operated by Southern Nuclear Operating Company, it is located on a 1,850 acre wildlife preserve near the Chattahoochee River. Only 400 acres are used for plant operations, with the remainder providing a natural home for many wildlife species.

Construction of the plant began in 1970, with Unit 1 becoming operational in December 1977 and Unit 2 in July 1981. The total cost of the plant was in the $1.5 billion range. The complexity of the design, construction, engineering and operations of Plant Farley within the constraints of regulatory agencies make the plant an engineering feat. During the peak of construction activities, nearly 4,200 workers were employed. Full operation of the plant requires less than 1,000 employees.

Not the least of the engineering challenges centered around the safety factor. The detailed design of the plant with many safety features built into it and the commitment to safety and continuous monitoring of its operations by Southern Nuclear and the Nuclear Regulatory Commission make it among the safest plants in the world. Performance-wise, the plant's 2 units have been among the top performers in the nation and the world since start-up.

Each reactor vessel without its internal parts weighs 360 tons. Inside the vessel rests the reactor core, which is made up of 157 fuel assemblies, each holding 264 fuel rods containing more than 11,000,000 uranium dioxide pellets. One fuel pellet, about the size of a pencil eraser, contains more energy than a ton of coal. The fission process takes place inside the reactor and produces heat, which is carried to the steam generators by the primary loop water. Each of the three steam generators in each reactor vessel weighs 331 tons and is four stories high. They serve as boilers that use heat from the reactor to boil a secondary loop of condensate water, producing the steam which drives the turbine generators. Six cooling towers provide protection to the Chattahoochee River from release of any significant amount of heated water.

The management of the plant includes continual monitoring of soil, foliage and air as a part of the environmental program to which Alabama Power and Southern Nuclear are committed. Ongoing land-management efforts are aimed at enhancing the environment to maintain the plant site for wildlife including abundant deer, turkey, fish and birds, such as a rare bald eagle.

In addition to having an engineering/technological impact on the state and its citizens, Plant Farley also continues to have a positive economic effect on Houston County and its citizens.