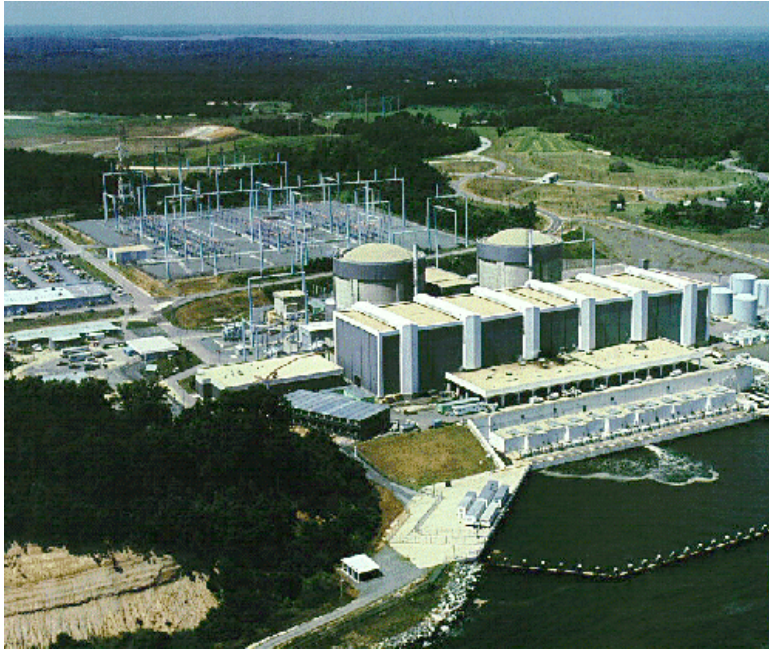


Calvert Cliffs Nuclear Power Plant

The [Calvert Cliffs](#) Plant at Lusby, Maryland has 2 Combustion Engineering [PWR](#) units with ~800 MWe generators. Calvert Cliffs is the first US plant authorized for renewal of the operating license past 40 years.

The Screenhouse is shown in the foreground, substation in the background. This facility is owned/operated by Baltimore Gas & Electric.



Courtesy [EEI-Electric Perspectives](#)

A number of simplified diagrams illustrate the the design of this pressurized water reactor plant. Although these diagrams were provided by [Westinghouse](#), they are representative of the Combustion Engineering design. A major difference between the two designs is that Combustion Engineering plants have 2 reactor coolant pumps per loop, whereas Westinghouse plants have 1 reactor coolant pump per loop. The original Combustion Engineering design also made more use of computer-based systems in the reactor protection system which automatically shuts down the plant. For more on the [PWR Cycle](#).

In each reactor, 217 fuel assemblies of the 14x14 design are used with 176 fuel rods per assembly. The containment is a large steel structure rated at 50 psi pressure. Each reactor coolant loop has 1 U-tube vertical steam generator and 2 reactor coolant pumps. Each unit has a pressurizer connected to one of the 2 loops. Normal makeup water is provided by 1 of 3 Chemical and Volume Control System charging pumps rated at 44 gpm and 2500 psi.

On the non-radioactive secondary side of the steam generators, condensate-feedwater is supplied by 3 condensate pumps, then 3 condensate booster pumps, and 2 turbine-driven feedwater pumps which move the water from the condenser to the steam generators. Pressure and temperature are raised from vacuum and 90F to 1100 psi and 425 F.

Emergency equipment for each unit include:

- 2 Low head safety injection pumps rated at ?? gpm @ 155 psid with a shutoff head of 205 psig supplied from the 420,000 gallon Refueling Water Storage Tank.
- 3 Intermediate head safety injection pumps rated at 345 gpm @ 1250 psid with a shutoff head of 1535 psid supplied first from 1 of 2 1270 cubic foot Boric Acid Makeup Tanks, and then from from the 420,000

gallon Refueling Water Storage Tank.

- 2 motor-driven and 1 turbine-driven Emergency Feedwater pumps supplied from a 350,000 gallon Condensate Storage Tank and 500,000 gallons Pretreated Water Storage Tanks .
- 3 Diesel generators shared between the 2 units.

See the US plant [address](#), [plants](#), and [map](#) pages for more information.

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