Diablo Canyon Power Plant
Once-through cooling

For nearly three decades, Diablo Canyon Power Plant has remained one of the safest and most efficient commercial nuclear power plants in the United States. When operating at full power, Diablo Canyon Power Plant generates enough electricity to cleanly and reliably power nearly 3 million Northern and Central California homes. This is done by creating heat through the process of splitting uranium atoms (fission) that heats water to create steam. The steam then forces the turbine, connected to an electrical generator to spin, creating electricity.

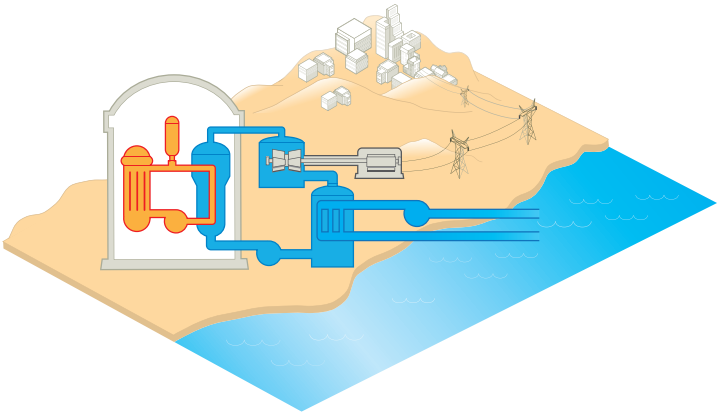
In order to safely and efficiently operate the plant, Diablo Canyon uses upwards of 2.5 billion gallons of water from the Pacific Ocean to condense steam after it has passed through the two electrical generators in a process known as "once-through cooling."

A Prime Location

Diablo Canyon is located on 12,000 acres of one of the most scenic and habitat-rich coastlines in the country. Pacific Gas and Electric Company preserves roughly 11,000 acres of land in a natural state as a home to many species of plant and animal wildlife. Like many large, utility-scale power plants in the U.S. built along rivers, oceans and other bodies of water, Diablo Canyon uses the abundant supply of ocean water to ensure the plant's reactors continue operating safely. The ocean water never touches the nuclear reactor itself. The water is separated by Diablo Canyon's system of three, independent water loops.

Primary Water System

Pure water in the first loop is pushed through the nuclear reactors to absorb heat and carry the heat to the steam generators. A pressurizer keeps the water at a high pressure to prevent boiling, allowing the water to reach over 600 degrees Fahrenheit and 2,200 pounds per square inch of pressure. This water is radioactive so it is enclosed inside the protective reactor containment dome.



Secondary Water System

Within the steam generators, pure water in the second loop is heated to create steam. The pressure from the steam spins a turbine, which drives a generator that produces electricity. The steam is then condensed when it comes into contact with the third system and is pushed back through the steam generators to be reheated into steam, continuing the process. This water does not come into contact with the reactor and is not radioactive.

Tertiary Water System

The third loop carries ocean water that condenses the steam in the turbine back into water. The ocean water is then returned to the ocean and more water is brought into the plant. Because each loop is separate, water in one loop cannot mix with water in other loops.

Revisions to California Law

In May 2010, the California Water Resources Control Board adopted a new policy mandating that power plants across the state update their once-through cooling systems. The policy provides a variance approach for nuclear power plants, recognizing their unique contribution to the state's electric generation capacity and greenhouse emission reduction goals. Under this policy, a nuclear review committee will be established to oversee a study of the feasibility and cost of a retrofit at Diablo Canyon. The study will be completed by 2013. Based on the results of the study, if the Board determines that the costs to install cooling towers are "wholly out of proportion" to the costs considered by the Board in developing its policy or if the installation of cooling towers would be "wholly unreasonable" after considering non-cost factors such as engineering and permitting constraints and adverse environmental impacts, Diablo Canyon would be granted a variance and allowed to continue operating its once-through cooling system and mitigate its impacts. Pacific Gas and Electric Company estimates the cost to retrofit Diablo Canyon at over $4.5 billon dollars. A retrofit at Diablo Canyon would also have significant negative environmental impact.

About PG&E

Pacific Gas and Electric Company, a subsidiary of PG&E Corporation (NYSE: PCG), is one of the largest combined natural gas and electric utilities in the United States. Based in San Francisco, with 20,000 employees, the company delivers some of the nation's cleanest energy to 15 million people in northern and central California. For more information, visit www.pge.com/about.

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