

Today's announcement that the Pacific Gas & Electric Company (PG&E) has reached an agreement with several environmental and labor groups to plan for the eventual shutdown of the Diablo Canyon Nuclear Plant is a stunning development, when viewed in an historical perspective. PG&E has agreed not to seek new licenses for its power plant that might otherwise have allowed for operation beyond the current license expirations for the two units in 2024 and 2025.

When Diablo Canyon was first conceived in the 1960s, PG&E wanted to add numerous nuclear plants along California's coast. That vision started to unravel when a seismic fault was discovered at the proposed site for a plant on Bodega Head in Sonoma County. Yet at one point, there were three commercial nuclear generating stations operating along the coast (Humboldt, Diablo Canyon, and San Onofre) and one in the Sacramento Valley (Rancho Seco). PG&E retired the tiny Humboldt plant in 1976 after just 13 years of operation. The Sacramento Municipal Utility District retired Rancho Seco in 1989 after 14 years of service. The Southern California Edison Company and its partners declared the closure of San Onofre in 2013, 30 years after operation began, but only two years after the completion of a billion dollar investment in new steam generators. Diablo has been in service for 30 years and is hoping to operate for another nine. The state has imposed a moratorium on new nuclear plant construction until the U.S. develops a dependable means for the long-term storage of high-level nuclear waste. But after today's announcement, it is hard to imagine that California will see another large-scale nuclear plant in the state.

Diablo Canyon was always the most controversial of the California projects. First proposed in the 1960s, its two units went into service in 1984 and 1985. In between, PG&E committed a series of critical mistakes that caused the project to drag on for so long, and helped the cost mushroom from \$690 million to almost \$7 billion. From the outset, environmentalists objected to the plant site atop a cliff on a remote but spectacular bay near the city of San Luis Obispo. When PG&E undertook seismic studies, it failed to look offshore and concluded that seismic danger was relatively low. After initial construction was almost complete, the Hosgri Fault was discovered offshore, and PG&E had to reconfigure the plant. But PG&E lacked a quality assurance/quality control program and failed to notice that the seismic redesigners got the mirror-image generating units reversed. As a result, it installed the wrong supports in the wrong places. When federal regulators discovered this mistake, they expressed a lack of confidence in the overall design of the plant and undertook a thorough review. This uncovered other design mistakes. What was to have been a 60s-vintage plant became a far more expensive 80s-vintage plant by the time all of the problems were fixed.

PG&E wanted to have the plant relicensed, but this raised new questions about seismic safety. In addition, as the decades passed, the onsite temporary storage pools for high-level

waste were filled to capacity and dry-cask storage facilities had to be added. Perhaps most critically, state regulators questioned the merits of PG&E continuing to use the ocean for cooling water, thereby killing unimaginable quantities of sea creatures.

For many observers, it became unclear as to how an inflexible nuclear power plant would match up with tens of gigawatts of intermittent renewables. Nonetheless, a consortium of concerned engineers and scientists recently declared that retaining Diablo was critical to meeting long-term greenhouse gas reduction goals. Today's agreement makes it clear that PG&E and various environmental groups disagree. As part of the deal, PG&E pledges to replace the Diablo power only with carbon-free resources. In exchange, environmentalists agree to support the protection of union jobs, the continuation of access to the cooling water until the plant is retired, and various other elements that will add cost for PG&E ratepayers.

Conspicuously missing from the settling parties are groups representing the interests of ratepayers large and small. Conspicuously present is a remarkable woman named Rochelle Becker - a San Luis Obispo resident who has dedicated her adult life to protecting her community from the hazards of a nuclear plant next door. She has been in the fray since at least the 1970s and is a well-informed, well-spoken advocate.

The new agreement will not go into effect unless approved by the California Public Utilities Commission. Other agencies will have to sign on, as well. Regardless, a utility that had once staked its future on nuclear power has closed that door - perhaps forever.