Our Ocean Backyard — *Santa Cruz Sentinel* columns by Gary Griggs, Director, Institute of Marine Sciences, UC Santa Cruz.

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Shuttering San Onofre

San Onofre Nuclear Plant which is being closed. Photo: California Coastal Records Project, Kenneth and Gabrielle Adelman.

On June 7th, Southern California Edison announced that they were going to permanently close the San Onofre Nuclear Generating Station (often referred to by the acronym SONGS, although there is nothing remotely musical about a nuclear power plant), perched on the coastal bluff of northern San Diego County.

At full capacity, San Onofre provided power for about 1.5 million homes in Southern California, however the plant has had a number of mechanical problems since it first went on line in 1968. Unit 1, a first generation reactor, operated for 25 years and closed permanently in 1992. Units 2 and 3 went into commercial operation in 1983 and 1984, but had received multiple citations over the years. These two reactors have been shut down since January 2012 due to premature wear found on tubes in steam generators, which apparently contributed to the accidental release of a small amount of radioactive steam.

That release, coming not long after the meltdown of the Fukushima Daiichi nuclear plant in Japan, set off a flood of public opposition and a regulatory and legal struggle between the Nuclear Regulatory Commission, Southern California Edison and Mitsubishi Heavy Industries, which built the flawed parts.

The closing and decommissioning of San Onofre, which will cost in excess of $2.7 billion, leaves one remaining operating commercial nuclear power plant in California. Diablo Canyon, on the coast south of Morro Bay, has struggled with its own issues over the years, most recently the newly discovered Shoreline Fault, which lies a short distance offshore. There are uncertainties about how this fault is related to the larger, offshore San Gregorio-Hosgri Fault system, and therefore, what seismic concerns this presents for the reactors.

Forty-three years ago, on April 9, 1970, Pacific Gas & Electric Company held a press conference in Santa Cruz, announcing that they had taken out a lease on 6800 acres of coastal land north of Santa Cruz owned by Coast Dairies and Land. Their proposal was to build what would have been the world's largest nuclear power facility on the coastal terrace just north of Davenport.

I was at that meeting 43 years ago and with a handful of others, immediately began to wonder what this might mean for Santa Cruz. Why here? Santa Cruz was a small, somewhat isolated community at that time and certainly didn't need all that power.

Well, there were several reasons. Most importantly, the ideal place to build a large power plant of any type is close to the center of the demand, in this case, the rapidly suburbanizing Santa Clara Valley. And with a thermal generating station, whether fossil fuel, like Moss Landing, or nuclear, you want to be next to a large source of cooling water, the Pacific Ocean. There was also an objective of placing plants away from large population centers. Davenport was seen by PG&S as the perfect location.

In the 1960s and 1970s, everything was different in California. Growth and associated electrical demand were increasing rapidly. The Resources Agency in a 1970 report maintained that a growing population and increasing per capita consumption of electrical power would double the electric power demand in California every nine years. Nuclear power was seen as an answer, and was advertised at that time by PG&E as "efficient, economical, safe and clean".

The state has had a long and checkered history with nuclear power plants. There were two that were built and shut down years ago, Humboldt Bay and Rancho Seca, near Sacramento. There were also others proposed at Point Arena, Bodega Head, Moss Landing, Malibu and Long Beach, all proposed along the coast for access to large volumes of cold seawater. None of these were ever built, although

approval was received for Bodega Head and excavation had started on the foundation when a branch of the San Andreas Fault was discovered in the pit. The project was terminated in 1964.