

Encina Power Station

Retired December 18, 2018

History

Reliable power generation from 1954 to 2018

Encina Power Station, located along the coast in Carlsbad, was San Diego County's largest fossil-fueled electric generating plant, and was retired on December 11, 2018. Encina first began operating in 1954 with one turbine-generator producing 100 megawatts (MW) of electricity.

By 1978, five steam turbine-generators, along with one combustion turbine, would be in service with the capacity to produce up to 965 MW of electricity that was essential to ensuring reliable electric service in Carlsbad and the greater San Diego area.

From Base to Peak

From 1954 until 2000, Encina operated as a base load facility, supplying a great deal of San Diego County's electrical needs on a continuous basis. From 2000 until its retirement in 2018, the station operated as a peaking facility, operating only when called upon to resolve transmission constrains or serve high regional demand.

General Plant Info

Boilers

Each of the five steam turbine generators had its own boiler, rising 10 stories tall, spanning 2,500 sq ft, and hanging from the roof within the powerblock building, which allowed for more optimal downward expansion of the boilers as each was heated.

Fuel

Boilers were originally fueled by oil until the 1980's, when Encina transitioned to cleaner burning natural gas, which powered the station until retirement. Oil was supplied to Encina via an offshore Marine Oil Terminal (MOT) that was retired in 2009 when the State no longer required fuel oil to be available as backup fuel. The MOT buoys and ~2500 feet of pipeline were removed in 2018; a smaller rock jetty remains that hosts lifeguard tower #30.

Combined Unit Chimney (CUC)

Installed in 1978, the CUC was the common exhaust stack for all five boilers. It stood over 400' above sea level.

Turbine Generators

The turbine changes the energy of high pressure steam created in a boiler into rotating mechanical energy. Each turbine contains several thousand specially curved steel-alloy blades in various sizes, all mounted on a shaft rotating freely when the force of high pressure steam is directed against the blades.

Transmission

Encina delivered up to 965 MW to a nearby switchyard, which was then transmitted at high voltage (138,000 and 230,000 volts) to support the regional transmission grid.

By the numbers

6
Total generating units able to generate up to **965 MW** of electricity.

98%
Average unit availability all-time

400'
Stack height above sea level

965
Total MW of electric generation capability

2,500°
Number of degrees inside the boiler of each turbine-generator while online

230,000
Maximum voltage transmitted from Encina switchyard during peak load

1,000,000
At its height, Encina met the electricity needs of up to one million consumers

FOR MORE INFORMATION

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