

Replacing San Onofre's Steam Generators

To ensure that the region's largest, cleanest power source – the San Onofre Nuclear Generating Station – is available to customers through its license period, Southern California Edison is preparing to replace the plant's largest components, its four steam generators.

What is a Steam Generator?

Steam generators turn heat from the plant's reactors into steam that drives turbines and generators, producing vast amounts of power. During 2009 and 2010 these major components will be replaced as they near the end of their life expectancy. The new components will be the 50th and 53rd replacements of 58 U.S. nuclear units with similar systems.

Why Replace San Onofre's Components?

Careful analysis of alternate available customer power options found that replacing the steam generators and continuing San Onofre's operation would save customers as much as \$1 billion during the next two decades. In addition, California will need every viable carbon reduction option available, including nuclear generation, to meet its ambitious climate change commitments.



San Onofre's first new steam generator moves toward the plant

to ensure the safety of the process it will use. After this project is complete, the domes will be as strong or stronger than the current structures. The construction process will be overseen by applicable regulatory agencies.

Ensuring Safety

Numerous U.S. nuclear plants have safely created and resealed openings in their containment domes. Even so, SCE has conducted extensive investigations and tests



How Do You Replace a Steam Generator?

Step #1 – All nuclear fuel will be removed from the reactor and placed in a building designed for safe storage.

Step #2 – A temporary opening 28' by 28' will be created in the side of the dome to allow removal of the original steam generators and installation of the new components. Equipment located on the inner face of the opening will be removed.

Step #3 – The original steam generators will be disconnected from their piping and supports.

Step #4 – A special crane will lift the first original steam generator and place it on a rail system running through the opening, sliding it outside the dome where it will be laid on a heavy haul vehicle and transported to a storage area.

Then the second original steam generator will be removed in the same way.

Step #5 – The new steam generators will be installed using the same process in reverse.

Step #6 – The crane system will be removed, the opening resealed and equipment reinstalled.

Step #7 – Extensive examination and testing will ensure the new components and reactor coolant system are working correctly.

Step #8 – The unit will be started up, functional testing conducted and, finally, full power production will resume.

