Southern California Edison (SCE) announced in June 2013 it would permanently retire San Onofre nuclear plant Units 2 and 3 and decommission the facility. In preparation for major dismantlement work, SCE will transfer San Onofre’s used nuclear fuel from steel-lined concrete pools into robust, concrete-encased steel canisters – a proven technology known as dry storage.

In December 2014, SCE selected Holtec International to design and build a robust, underground dry storage facility for San Onofre’s used nuclear fuel until the Department of Energy removes the fuel from the site. The selection of Holtec followed three detailed public discussions led by San Onofre’s Community Engagement Panel. About one-third of San Onofre’s used nuclear fuel is already in dry cask storage containers; Holtec plans to complete the transfer of the remaining fuel to dry storage by mid-2019.

SCE awarded the engineering, procurement and construction contract after determining that Holtec has the required engineering and fabrication capabilities, fuel handling and cask loading experience, and experience constructing dry storage facilities. SCE also cited Holtec’s experience with licensed dry storage facilities in the United States, including two in California. Holtec has qualified the design to withstand the same seismic spectra as the current San Onofre dry storage system. The current dry storage facility at San Onofre is designed to withstand a peak ground acceleration of 1.5 g, which is far above the California Building Code requirement of .38 g for buildings in the vicinity of San Onofre.

Holtec’s canister integrity monitoring program is designed to prevent, detect, monitor and address any cracking or corrosion. At SCE’s request, Holtec also will provide an empty dry storage canister to be used for advanced testing and inspection techniques at San Onofre to enhance existing industry aging management programs. In addition, SCE will leverage the Holtec project by partnering with the Electric Power Research Institute (EPRI) to apply leading-edge inspection techniques at San Onofre.
Holtec’s Hi-Storm Umax underground design for San Onofre features the most corrosion resistant grade of stainless steel. The design exceeds California earthquake requirements, and protects against hazards such as water, fire or tsunamis. The canisters weigh 50 tons. The underground storage cavities are encased in a concrete monolith. The surface of the stored canister is inaccessible to missiles or projectiles. Holtec, which has a corporate commitment to creating domestic jobs, will engineer and fabricate all components for San Onofre at its facilities in Pennsylvania, Ohio and New Jersey. Headquartered in Jupiter, Fla., Holtec performs industrial work on six continents, with 70 percent of its business in the United States.

San Onofre currently stores used nuclear fuel safely and securely using a combination of technologies: dry storage and enclosed, steel-lined pools known as wet storage. San Onofre currently has about 2,668 fuel assemblies in the spent fuel pools for Units 2 and 3 and about 800 Unit 2 and 3 fuel assemblies in dry cask storage. There are about 400 Unit 1 used nuclear fuel assemblies in dry cask storage on site. In addition, there are 270 fuel assemblies for Unit 1 stored offsite at General Electric’s used fuel storage facility in Morris, Ill.

Nuclear power plants throughout the United States have been safely storing used nuclear fuel in dry storage canisters since 1986. Analysis by EPRI shows that it would take at least 80 years before a severe crack could occur in a dry storage canister – a development characterized as a “through-wall” crack. Industry experts are developing advanced cask monitoring with new testing methods that are expected to be in place by 2019.