

# THE ROAD

*In storage at San Onofre for 18 years, the 670-ton SONGS-1 reactor pressure vessel undertook a 51-day trip across three states to its final disposal site.*





# TO UTAH



Six large trucks were used to push and pull the SONGS-1 reactor pressure vessel 400 miles through Nevada and into Utah with a maximum speed of 10 miles per hour over a 10-day period.

Photo: EnergySolutions





The RPV is lowered into its storage container in October 2002 during the decommissioning of SONGS-1. The cylindrical container is made from 2-inch-thick carbon steel with 3-in.-thick top and bottom plates, along with a 3-in.-thick carbon steel liner for additional radiation shielding. The container is a Class A radioactive waste shipment that meets all regulations for disposal at EnergySolutions' Clive disposal facility.

Photo: SCE



Leaving San Onofre, the RPV is slowly transported on a Goldhofer vehicle up the site's road leading to a rail spur just north of the power plant. Once there, the RPV package was transferred to a heavy-load Schnabel railroad car for transport to Apex, Nev. Rail transport took four days covering 366 miles with a maximum speed of 15 mph.

Photo: SCE



July 14 marked a milestone in the decommissioning of the San Onofre Nuclear Generating Station (SONGS), as the Unit 1 reactor pressure vessel (RPV) completed a seven-week journey from Southern California to EnergySolutions' Clive disposal facility in Utah. The approximately 670-ton RPV package, containing the pressure vessel from the previously decommissioned SONGS-1, pieces of radioactive metal, and grout for radiation shielding, left San Onofre on May 24, traveling by rail to a location outside Las Vegas, where it was transferred to a platform trailer to be transported the remaining 400 miles to Clive, about 75 miles west of Salt Lake City.

"This project was a very complex undertaking that required approvals and/or coordination with over two dozen federal, state, and local agencies and government entities," said Todd Eiler, director of the EnergySolutions Projects Group, which handled the transport. "The coordinated effort with the rail lines and departments of transportation in California, Nevada, and Utah resulted in another safe and successful large component shipment managed by the EnergySolutions Projects Group."

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The RPV package crosses the San Juan Creek Bridge in San Juan Capistrano, Calif., at night by rail. The 36-axle Schnabel car, the largest in the world, has a capacity to transport loads of up to 880 tons. "From start to finish, the project required detailed planning and coordination between the Southern California Edison SONGS oversight team and our contractors, and was done with safety as the top priority," stated Doug Bauder, SCE vice president and chief nuclear officer.

Photo: Mariusz Sulek





(RIGHT) At 15.5 feet in diameter and 38.5 ft long, the RPV shipping container squeezes under a rail overpass. Extensive rail planning included machining the carbon steel sides of the shipping container to comply with extremely tight railroad bridge clearances, multiple 3-D laser surveys of the rail route, and third-party structural evaluations of dozens of railroad bridges and structures.



The Unit 1 RPV was transferred to its transport and disposal storage container in 2002, when SONGS-1 was undergoing decommissioning. SONGS-1 operated from 1968 to 1992, and active dismantlement of the Westinghouse three-loop pressurized water reactor began in 1999. The above-grade material from the Unit 1 site, the concrete and steel of the plant, was shipped off-site, much like what will happen with Units 2 and 3 in the coming years. Initially, the RPV was to be shipped by barge via the Panama Canal to the Barnwell radiological disposal facility in South Carolina. These initial plans, however, were rejected for various reasons, and the RPV had been in temporary storage on-site at San Onofre since then.

(BELOW) Once the RPV arrived in Nevada, crews prepared the shipment to be transferred to a hydraulic platform trailer for road transport. More than 20 companies were involved in the scoping, planning, and execution of the project to transport the SONGS-1 RPV to the Clive facility in Utah.

Photos: EnergySolutions







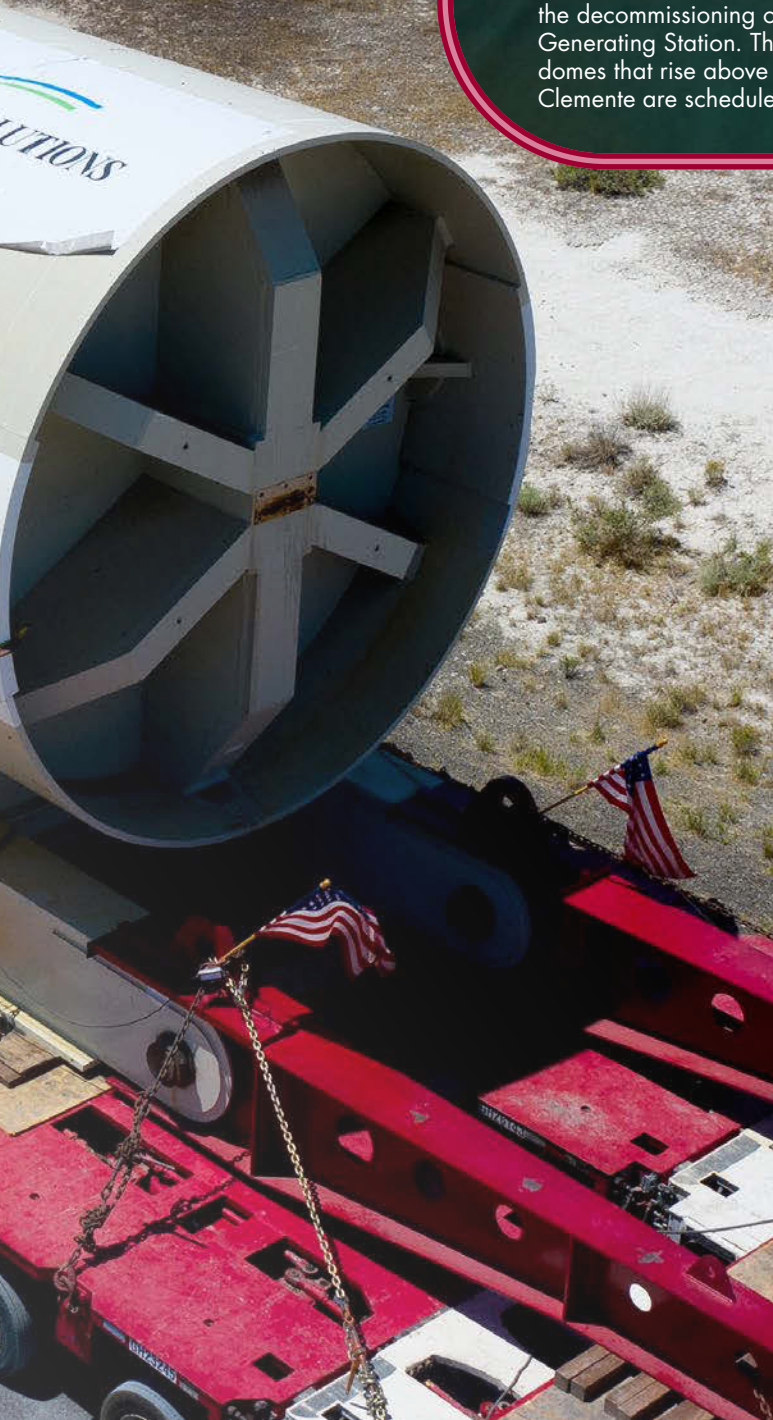
Photo: EnergySolutions

Tractor trucks pull the platform trailer with 384 trailer tires through the Nevada desert on its way to Utah. A spokesman for the Nevada Department of Transportation told *The San Diego Union-Tribune* that, with the RPV package weighing about 670 t, it was the heaviest load to ever traverse Nevada's roadways, the newspaper reported on July 20.





Removal of the Unit 1 RPV marks a milestone in the decommissioning of the San Onofre Nuclear Generating Station. The distinctive 200-ft-high twin domes that rise above Interstate 5 just south of San Clemente are scheduled to come down by 2028.



In December 2016, Southern California Edison (SCE) awarded a contract to SONGS Decommissioning Solutions, a joint venture of AECOM and EnergySolutions, to decommission and dismantle the SONGS plant. SCE decided to permanently shut down SONGS Units 2 and 3 in June 2013. Both units had been off line since January 2012 after premature wear was discovered in replacement steam generators in 2010 and 2011. SCE expects to complete the demolition of SONGS to approximately 3 feet below grade, with the exception of the on-site independent spent fuel storage installation and the plant's switchyard, by the end of 2028 at an estimated cost of about \$4.4 billion, including used fuel management, radiological decommissioning, and site restoration costs.