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To facilitate effective recycling, Brandenburg crews established a highly coordinated workflow to remove, separate and load materials throughout the demolition process.

# An Ecosystem of Opportunity

Recycling, upcycling and the shifting dynamics of demolition

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# Inside the First Phase Demolition of California Nuclear Power Station

The decommissioning of the high profile San Onofre Nuclear Generating Station in San Clemente, California began in earnest with the initiation of the first phase of what will be a multiphase, multiyear effort. The success of the first phase established the foundation for the safe and timely execution of all future work.

Southern California Edison (SCE), the primary owner of the power plant, selected SONGS Decommissioning Solutions, a joint venture between AECOM and EnergySolutions, as the plant decommissioning general contractor in 2016. After a two-year, competitive bidding process, the general contractor subsequently selected Brandenburg Industrial Service Company (Brandenburg) to complete the first phase demolition. This initial effort included approximately 385,000 sq ft of structures, including the famed AWS 'Queen Mary' office complex, the Units 2 and 3 diesel generator buildings, a warehouse and several outbuildings as well as transformer areas.

The demolition project included universal waste removal, asbestos abatement, steel recycling and the removal, processing and disposal of concrete. For Brandenburg, this 16-month effort was

the optimal opportunity to demonstrate its experience and expertise in the planning and safe execution of complex demolition activities with speed, safety and remarkable coordination.

## Categorically Speaking

One of the biggest logistical challenges in the phase 1 demolition was to remove and sort materials, separating concrete and steel, for instance, on site with speed and efficiency.

With a crew of 70, the construction equipment included hydraulic excavators equipped with concrete hammers, grapples, processors, shears, front-end loaders, man-lifts and skid steers. The major construction equipment was owned and supplied by Brandenburg with non-demolition specific type machinery such as man-lifts, generators, compressors, articulated trucks and compactors provided by a local vendor.

Specifically, Brandenburg relied on four Liebherr 956 Hydraulic Excavators with demolition attachments, one Liebherr 926 Hydraulic Excavator with demolition attachments and one Komatsu WA500 Rubber Tired End Loader with grab bucket. Another track end loader with a grab bucket, multiple skid steer loaders, four dust suppression systems and two man-lifts rounded out the major resources needed to not just dismantle—but quickly sort through—materials.

The Brandenburg team's coordinated action plan was clearly evident on the AWS, better known as the Queen Mary, because the two top floors of the four-story office complex resembled the ship's upper decks. The large building was internally cleared with smaller machinery before the actual structure was dismantled then crushed, sorted and hauled out via rail cars and semi-trucks. It's a carefully coordinated workflow designed for safety and efficiency, where one operator tears down a section, another is sorting the material on the ground and another is loading



Phase 1 of San Onofre Nuclear Generating Station's demo took 16 months to complete.

out the material with concurrent dust suppression occurring in all three activities. Crews finished demolishing the AWS building in October, making way for a railyard expansion to support future demolition works.

In another section of the plant, and in order to create the necessary room for equipment staging, crews and machines rose to the challenge of removing two seismically reinforced diesel generator buildings. When complete, crews had recycled 100% of the steel estimated at about 7,377 tons, processed 29,611 tons of concrete to 4-in. minus and disposed of 3,717 tons of trash debris. Manhours totaled 130,000, with no lost time.

## Controlled Conditions

The phase 1 demolition and environmental remediation of the power plant was completed in August 2021. The project's success led to Brandenburg's selection as the phase 3 demolition contractor. In all, 62 structures will be dismantled over eight years, including the twin containment domes.

As SCE Decommissioning Oversight Specialist Frank Pavia noted, "The team's housekeeping skills were remarkable. Brandenburg was simultaneously demolishing the structure and clearing the area. You would think chaos—and instead, it was highly orchestrated with a strong safety focus." ♦



Approximately 29,611 tons of concrete was processed to 4-in. minus to maximize the amount that could be loaded into the rail cars for disposal, since recycling was not an option.