

A D&D Trifecta

A look at three different EnergySolutions-led decommissioning projects that are nearing completion.

Utah-based EnergySolutions is nearing the tail end of three separate decontamination and decommissioning projects: the Zion nuclear power station on the shores of Lake Michigan, an hour north of Chicago, Ill.; the La Crosse Boiling Water Reactor (LACBWR) on the banks of the Mississippi River near La Crosse, Wis.; and the Southwest Experimental Fast Oxide Reactor (SEFOR) on University of Arkansas (UA) property southwest of Fayetteville, Ark. Photographs show a few highlights of the decommissioning work being completed on each of these similar but very distinct projects.

Zion



In March 2016, the last of the large components from Zion were successfully removed and prepared for shipment and final disposition at EnergySolutions' Clive Disposal Site in Utah's west desert. Lessons learned resulted in the steam generators from Zion's Unit 2 reactor being removed in three months, two times faster than they were removed from Unit 1.



On Jan. 10, 2015, fuel transfer operations were completed when the 61st canister was safely placed at Zion's independent spent fuel storage installation (ISFSI), 366 days after the first canister arrived on the pad. According to EnergySolutions, this is the largest D&D ISFSI project in the U.S. to date—with the first modern security command center to be accepted by the Nuclear Regulatory Commission.



On May 14, 2015, the Zion D&D team completed the shipping campaign for Class B and C waste. The campaign resulted in 37 over-the-road shipments, covering roughly 96,000 miles. In total, the waste contained 32,390 curies of radioactivity, weighed 506,443 pounds, and measured 4,440 cubic feet.



Zion's reactor vessel (and internals) segmentation is the most cost-effective project of its kind to date, EnergySolutions said. Mechanical cutting was used to avoid the significant radiological concerns experienced in previous D&D projects. The team optimized cutting and waste loading campaigns to minimize Class B and C waste costs.

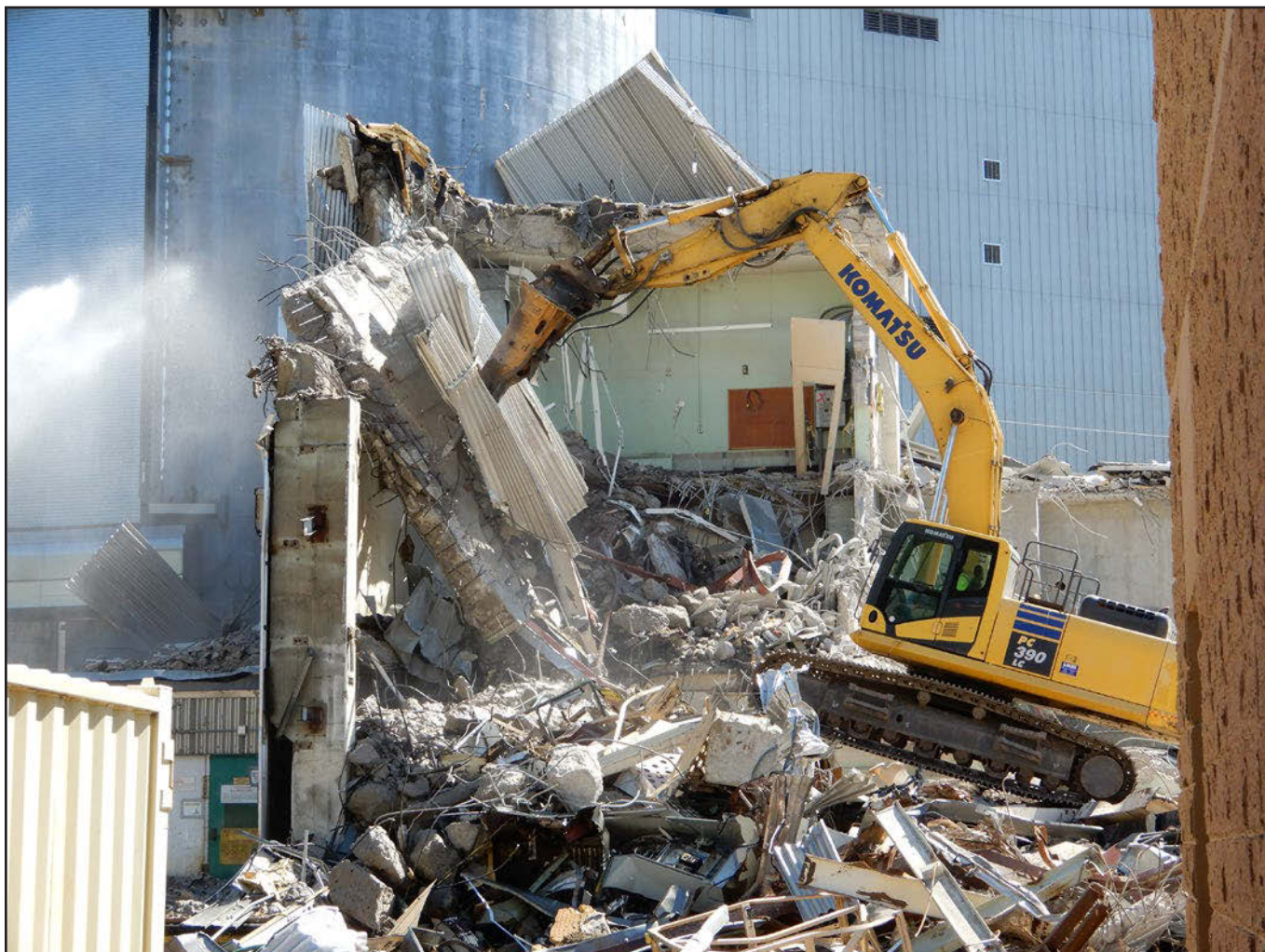
La Crosse



A key decommissioning activity occurred in 2007 when Dairyland Power Cooperative contracted with EnergySolutions to facilitate the removal, transportation, and disposal of LACBWR's reactor pressure vessel to the Barnwell disposal facility in South Carolina.



In 2016, EnergySolutions took operational control of LACBWR, allowing the company—as the 10 CFR Part 50 licensee—to continue expedited decommissioning activities at the plant. Demolition of LACBWR is expected to be completed in 2018. Removal of the plant's 350-foot-tall ventilation stack took about 150 days.



Demolition of the power plant's turbine building, waste treatment building, and underground structures was completed in August 2017. EnergySolutions said that its safety performance exceeded expectations, with zero recordable OSHA incidents during major demolition activities.

SEFOR



Sponsored by the U.S. Atomic Energy Commission (AEC), SEFOR is a former fast breeder test reactor that operated during the late 1960s and early 1970s. After operations and testing were completed at SEFOR, the reactor's fuel was removed by the AEC and the facility was placed in SAFSTOR.



In 2009, UA received funding from the Department of Energy to perform site characterization, develop a decommissioning cost estimate, and write the decommissioning plan for SEFOR. Contracted by the university, EnergySolutions completed the work in 2011. SEFOR D&D Project Manager Dean Wheeler, seen here, inspects the facility before deconstruction work begins.



EnergySolutions' contract was modified in 2017 to incorporate further work that was supported by additional funding granted to UA. The second phase consisted of deconstruction of the operations and reactor support buildings, with additional efforts to characterize the reactor internals and complete passivation of all sodium waste in the primary system. Phase 2 work was completed in September 2017 and only the containment building remains.