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Best Projects

**Award of Merit, Energy/Industrial: Oconee Feedwater Heater  
Replacement**



*Photo courtesy ARC Energy Services*

*October 31, 2022*

In just 12 days and one hour, the project team planned and executed the complete replacement of two vertical 60-ton feed water heaters at the Oconee Nuclear Station, which power nearly 2 million homes in the region. A complete laser scan of units to create a 3-D model animation to aid in visualize the process during planning, including identifying non-essential elements that could be removed to create as much work space as possible. With other major maintenance activities underway at the power plant, coordination with those projects was essential, including the movement of various cranes.

A hydraulically-controlled sliding rail system was installed in the heater bay crane aisle to mobilize needed rigging equipment that would be used to lift the old units, and place them on carts for removal. With rocker carts controlling movement at the bottom of the heaters, a remotely operated temporary loading device (TLD) enabled the team to execute precise movements throughout the operation.

The process was reversed to install the replacement units. A motorized knuckle boom crane enhanced the operation's agility, as it could be mobilized to needed locations within 15 minutes.

Once the units' alignment was completed and verified, the team installed all piping and interferences—an operation that required 700 welds. Phased-array ultrasonic testing was performed on welds for the units' 24-inch inlet and outlet nozzles before and after post-weld heat treatment with no rejections. More than 40,000 safe work hours were invested in the effort, which extends the nuclear power plant's useful life.

## **Oconee Feedwater Heater Replacement**

**Seneca, S.C.**

**Award of Merit, Energy/Industrial**

**Submitted By: ARC Energy Services, Inc.**

**Owner: Duke Energy**

**General Contractor: ARC Energy Services, Inc.**

**Subcontractors: Structural Integrity Associates,  
Sarens Nuclear & Industrial Services, 3SPACE**

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