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500,000 YARDS

Shaw Nuclear mobilizes for a milestone contract

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BY DON MARSH

Twin batch plants fuel construction of just-approved nuclear power site

Construction has stepped up several notches on the nation's first two new nuclear units in 30 years at the Georgia Power Plant Vogtle, near Waynesboro, Ga. The Nuclear Regulatory Commission voted last month to approve issuance of a Combined Construction and Operating License for Vogtle units 3 and 4, the first such license ever approved for a U.S. installation. It enables work to commence full bore toward Georgia Power's projected 2016 and 2017 unit start ups.

Lead contractor Shaw Nuclear Power Group is deploying two RexCon Model S-RM Central Mix batch plants and a fleet of about 15 mixer trucks, performing preliminary slab and subgrade work in advance of higher volume, main structures for both units. Updates Atlanta-based Southern Co., Georgia Power parent, has released from Plant Vogtle show service building construction and cooling-water systems of 10-ft.-diameter concrete pressure pipe design. Additionally, precast panels have been erected for mechanically stabilized earth structures encompassing each unit's "nuclear island," with reactor vessel, steam generators and support components.

"We are committed to bringing these units online to deliver clean, safe and reliable energy to our customers. The project is on track, and our targets related to cost and schedule are achievable," said Southern Co. CEO Thomas Fanning, upon the NRC license announcement.

"Our communities and country will benefit from this more than $14 billion investment, representing 4,000 to 5,000 jobs on site during peak construction, and in the process creating over 25,000 direct and indirect jobs by this project alone," added Georgia Power CEO Paul Bowers.

Construction on Vogtle units 3 and 4 (foreground) is proceeding on five- and six-year schedules. The facilities will have 1,100 megawatts capacity and incorporate new generation Westinghouse AP1000 reactors, housed in 215-ft. tall cylindrical structures (left of cooling towers). Georgia Power has a 45 percent stake in units 3 and 4, three other utilities holding the remaining interest. The Plant Vogtle expansion factors population growth trends indicating 4 million new Georgia residents by 2030.

PHOTOS: RexCon LLC

RexCon LLC has equipped Shaw Nuclear Power Group with twin batch plants for the Waynesboro, Ga., project and a companion power plant contract in Jenkinsville, S.C. Each site is geared to produce 500,000-plus yards of concrete over a five- to seven-year construction schedule. The Model S-RM Central Mix plants are capable of a minimum 250 yd./hour output using four aggregate and two cementitious materials.

RexCon's contract spanned material handling and conveyor systems; chilled and hot water systems; ice production and distribution components equal to 300,000 lbs. in 24 hours; environmental controls; admixture storage and dispensing; back-up Cat Diesel Power Generators; compressed air systems; and, computerized batch controls with integration of all systems combined into a central operator room. All equipment was to be fully portable and capable of being shifted to another site, excepting the ice storage room. The initial equipment contract was increased to include all site engineering, layout and foundations, and factory representatives' supervision of all installation, construction and erection work.

PHOTOS: Southern Co.

Approximately 300 sections of 10-ft.-diameter prestressed concrete cylinder pipe form the unit 4 circulating water system (above), to be encased in concrete like its unit 3 twin (left). The pipes will recirculate water between the cooling tower and turbine building condensers.

Enclosing the units' "nuclear islands" are mechanically stabilized earth retaining walls, placed 40 ft. below grade. Each island will support a reactor and containment building, two steam generators, used-fuel pool and auxiliary building. Concurrent with early-2012 MSE wall construction for the unit 4 island (left, top) was foundation work for a derrick crane. Equipped with a 560-ft. boom and rotating on a 300-ft.-diameter circular rail, the derrick will serve both units' construction and have several picks exceeding 1,000 tons.