JOHN S. RAINEY GENERATING STATION

During construction of the John S. Rainey Generating Station near Starr, South Carolina, project engineers tapped into the proven performance of Tnemec protective coating systems at other Santee Cooper electric utility power plants for more than 20 years. "At this facility, there are multiple simple-cycle and combined-cycle generating units, along with a turbine building, a cooling tower, administration/ maintenance building, a warehouse, and various other structures where our coatings were used," Tnemec coating consultant Dan Anderson acknowledged. "Over a span of three years, more than 6,000 gallons of coatings were used at the station."

Equipment, piping, and steel in the plant's simple-cycle generating units were primed using Series 135 Chembuild, a modified polyamidoamine epoxy, followed by a finish coat of Series 82HS Versatone, a silicone alkyd finish coat that offers superior color and gloss retention. Combined cycle generating units at the plant received a finish coat of Series 73 Endura-Shield, an aliphatic acrylic polyurethane, which is highly resistant to abrasion, wet conditions, chemical contact, and exterior weathering.

The plant's two demineralized water tanks, filtered water tank, and condensate water tank were primed by the fabricator with Series 90-97 Tneme-Zinc, an advanced technology, zinc-rich urethane, which is compliant with hazardous air pollutants (HAPS) requirements for in-shop application. The demineralized and condensate tanks received a field-applied coat of Series 61 Tneme-Liner, a cycloaliphatic amine epoxy with excellent corrosion and chemical resistance, while the filter water tank was lined with Series 20 Pota-Pox, a polyamide epoxy for use in potable water storage. The exterior finish coat on all of the tanks was Series 1074 Endura-Shield II, an aliphatic acrylic polyurethane, which is highly resistant to abrasion, wet conditions, corrosive fumes, and exterior weathering. "Corrosion protection is important in generating plants, where steel is exposed to a range of environmental conditions," Anderson noted.

In addition, Series 210 Even-Flow SL, a high-gloss, high build, self-leveling aggregate-filled polyamine epoxy, was applied to the turbine deck floor. "It still looks beautiful, which is important since everyone who walks in the turbine sees the floor," Anderson added.

The first phase of the Rainey Generating Station, a 500-megawatt combined cycle unit, began commercial operation on January 1, 2002. By May 2002, two 150-MW simple-cycle combustion turbines were also in service. The Rainey Station is Santee Cooper's first facility with gas as its primary fuel source. Santee Cooper is South Carolina's state-owned electric and water utility, and the state's largest power producer.

FEATURED PRODUCTS

Series 20 Pota-Pox
Series 61 Tneme-Liner
Series 73 Endura-Shield
Series 82HS Versatone
Series 90-97 Tneme-Zinc
Series 135 Chembuild
Series 210 Even-Flow SL
Series 1074 Endura-Shield II

PROJECT INFORMATION

Project Location
Starr, South Carolina

Project Completion Date
November 2003

Owner
Santee Cooper
Moncks Corner, South Carolina

Engineer
Jack Warren, Santee Cooper Engineering Department
Starr, South Carolina

Field Applicator
Dunlap
Greenville, South Carolina

The John S. Rainey Generating Station in Starr, SC received a high-performance coating system from Tnemec to protect it from potentially damaging conditions.

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