COLLEGE OF STATEN ISLAND, NY

Emergency Boiler Plant Repair

IMPROVEMENT DETAILS

- Performed ultrasonic thickness testing and dye penetrant testing
- Developed a repair procedure for replacing floor and bridge wall tubes for Boilers 1 and 2
- Designed a specialty plate cutter pilot drill to remove boiler tube sections
- Provided on-site technical support throughout critical phases of repair
- Coordinated delivery of construction materials
- Supported boiler start-up and testing requirements such as hydrostatic testing of boiler and refractory dry-out

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GOALS AND CHALLENGES

Established in 1956 and completed in 1994, the College of Staten island is a 204-acre campus of the City University of New York (CUNY) and can meet the demands of 14,000 students with 14 neo-Georgian buildings. At the request of the Dormitory Authority of the State of New York (DASNY) and CUNY, Willdan | Genesys investigated damages to Boiler No. 1 at the College. Damages were the result of a demolition attempt by a contractor trying to repair leaking bridge wall tubes on the boiler. In the course of the investigation, a tube leak developed in Boiler No. 3 and it was discovered that Boiler No. 2 tubes were also eroded. This escalated the project to a very high priority.

The project provided site construction, administration and technical field services on a per diem basis, and design engineering services on a lump sum basis.

SOLUTIONS AND OUTCOME

DASNY requested that Willdan | Genesys develop an engineered solution and repair the failed tubes and defective conditions on both boilers on an emergency basis. We corrected the problem by repairing the damaged header and boiler casings. New tubes were installed using a specialty plate cutter pilot drill we designed to cleanly remove boiler tube sections.

While in the process of repairing Boiler No. 1, Boiler No. 3 had a ruptured tube. These boilers were replaced before the heating season before replacing the equipment for Boiler No. 2, avoiding the extra costs of replacing the entire boilers and of renting temporary boilers.