

TRANSPORTATION CATEGORY

Concrete Structural Repairs & Load Capacity Enhancements of an Access Bridge

JACKSONVILLE, FL

SUBMITTED BY PREMIER CORROSION PROTECTION SERVICES, INC.

The Northside Generating Station (NGS) uses natural gas, fuel oil, coal and petroleum coke in three large steam units and four small diesel-powered peaking units to produce more than 1300MW of peak electric capacity. NGS was originally placed into service in 1966.

As part of a design/build project to maintain NGS, a restoration program was developed to repair and strengthen the bridge beams, pile caps and slab on the



Flume Road Access Bridge that spans Nichols Creek and links the generating station to raw materials barges from the Port Authority.

The 960 ft (293 m) long access bridge incorporates precast double "T" slabs supported on 64 concrete pile/pile caps with 63 beams along one side and the other side supported on a precast concrete wall which is part of the discharge flume.



Over the years, considerable deterioration occurred at the pile caps and beams in the bridge, causing the bridge beams to torque, requiring structural reinforcement to meet the current code requirements and load specifications. During repairs, the underside of the bridge was accessed through three holes cut through the top of the bridge. Much of the work on the bridge was at or just above water level, requiring the crews to work aboard a system of 30 floating platforms that were moved between the beams and pile caps as needed. Debris was captured on the work surface and disposed of according to regulations.

The physical aspects of undertaking the project were challenging due to the extent of the damage in the concrete structure, difficult access to the repair area, an aggressive environment, low clearance between the repair area and the water, and environmental regulations. The repair and rehabilitation of the Flume Road Access Bridge was completed on time and on budget.

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SUBMITTED BY

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Tampa, FL

OWNER

Jacksonville Electric Authority (JEA)
Jacksonville, FL

PROJECT ENGINEER/DESIGNER

B Squared Engineering Group
Haddonfield, NJ

REPAIR CONTRACTOR

Premier Corrosion Protection Services, Inc.
Tampa, FL

MATERIALS SUPPLIER/MANUFACTURER

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Deerfield Beach, FL