MTA-Metro-North Commuter Railroad
Highbridge Yard Upgrade and Improvements

BRONX, NY

SERVICES PROVIDED

- Full range of traction power engineering
- Design for new DC traction power substation, third rail system and power distribution network
- Systems integration

PROJECT OVERVIEW

Burns Engineering's electrification specialists were on the design-build team for the Highbridge Yard Commuter Rail Complex. As a key part of this facility project, Burns' traction power specialists provided a full range of traction power systems design services for a new modular traction power substation, third rail system and power distribution network (including switch heater controls) and the associated system integration to the prime contractor.

A key component of the design development and systems integration process was regular site visitation to verify all design and engineering criteria devised during and after the Final Design process.

The Yard site was earlier used for material storage and construction staging for other various projects that Metro North was implementing. Since several railroad tracks run through the site, including the Oak Point Link and the mainline tracks for Metro-North's Hudson line, improvement of the complex was a key component of the overall East Side Access program. The new improved complex consists of the following major components:

- New and upgraded utilities and power distribution system, including design and supply of a more compact modular traction power station in place of the physically larger substation in a permanent building originally planned for the project.

- An electric locomotive/EMU storage yard, which consists of six tracks for storing and servicing Metro-North trains, with servicing aisles for each track.
- A diesel storage yard, comprised of three storage tracks between the electric locomotive storage yard and the facility's turnaround track.
- A two-track car appearance facility.
- Diesel fueling and train washer facilities.
- Train platforms for use in getting employees directly to the complex via mass transit.

Design of a modular substation in place of the physically larger outdoor substation provided significant cost savings to the project's original budget – reflected in use of a smaller land parcel for the unit and reduced field installation cost – since the unit was factory-assembled and drop-shipped for simple affixation to the station's pre-prepared foundation.