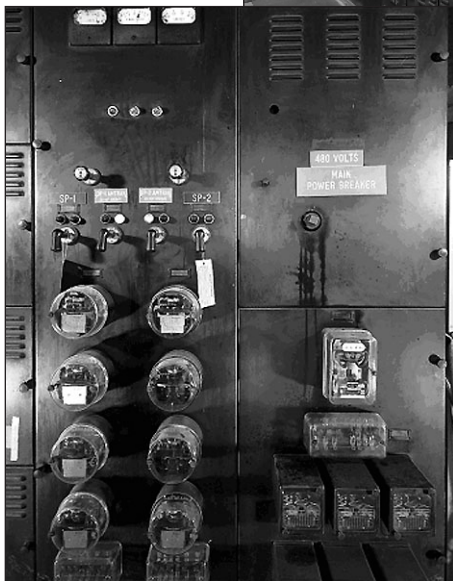


## Project Experience

### **Historic American Engineering Record Newark Penn Station Substation Newark, New Jersey**

Newark Penn Station Substation is a well-preserved example of a fully integrated, indoor electrical substation representative of the state-of-the-art technology, circa 1935. It is a small but important part of what was called in 1936 "the most extensive electrification project in transportation history." Known as the "Pennsylvania Electrification," the massive undertaking involved the conversion of the Pennsylvania Railroad's main lines from New York to Washington and Philadelphia to Harrisburg from steam to electric locomotive operation. The work spanned ten years of actual construction beginning in 1928 and employed as many as 25,000 workers at one time during the years of the Depression.

Built 1932-1935, the Substation was state-of-the-art in every way. The original equipment, including the conductors, transformers and switchgear, is representative of the advanced electrical components that were being continually



developed and improved during the 1920s and 1930s, a period of intense competition by the major electrical equipment manufacturers. The equipment incorporates not only the latest advances from the electrical sciences, but also from the fields of metallurgy, thermodynamics, hydraulics, and chemistry.

The designers, Gibbs & Hill Consulting Engineers, was the most important American electrical engineering firm in the area of electrified railways during the early 20<sup>th</sup> century.

Rob Tucher, Photographer and Richard Casella, Engineering Historian, documented the Substation for Arch2, Inc. and New Jersey Transit.

