

JOHN RICHARDSON

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PROFESSIONAL SUBSTATION TECHNICAL SUPPORT SERVICES FOR THE ELECTRICAL UTILITY INDUSTRY

Dear Perspective client:

I am currently retired and seeking contracting work related to power substation design.

Primarily, I was employed for 34 years (July 1987 – July 2021) with Nashville Electric Service with my most recent work experience was a principal associate engineer. My expertise was required for major engineering projects for the control design section and Tennessee Valley Authority. I have an associate of science degree in electrical engineering technology from Nashville State Community College, March 1987.

I am seeking opportunities to assist organizations in the field of power substation engineering.

PROJECT EXPERIENCE:

Radnor Auto transformer: Checked approval drawings for Hyundai 160/213/267, 179.2/238.6/299 MVA, 161.7/69/23.9 KV auto-transformer. Organized meeting with NES system planning and Hyundai engineers to discuss additions and removal of circuits. Conducted field detail wire check against connection diagrams for wiring integrity.

The goal of the project was to remove (3) single phase 161 KV transformer and associated electro-mechanical relay control panels. The new auto-transformer protection panel consisted of the SEL-387 and SEL-451 relays, corresponding test switches, pk-blocks, lor relays, indication lamps, temperature trip and differential cutout switches and sb-1 control switches.

Additional transformer bank differential bank protection utilized the SEL-487B and SEL-451 relays with associated test switches, lor relays, indication lamps, sb-1 switches and pk-blocks. Control of the auto-transformer was conducted by micro-processor relays in conjunction with SCADA. We had detailed meetings with TVA for system protection coordination.

AMI – Automated Metering Infrastructure

This project involved implementing residential and commercial smart meters to transmit metering telemetry to substation data collectors.

Craighead Breakers: Checked approval drawings for Siemens 161 KV SF6 high voltage breakers. The design was to remove and install the new breakers and connect control, relay and bus differential circuits to the existing control panels. The design required communication protocol with TVA communication equipment.

Radnor Relay Panels: Checked approval drawings for 161 KV motor operated switches, 161 KV circuit switcher and 161 KV power transformer. The design required removing existing electrical-mechanical relay panels and install (2) 161 KV transformer panels using SEL-387 and SEL-451 relays. Utilized smart relays to control high voltage breakers with SCADA communications.

Hurricane Creek Transformer: This project required adding an additional 161 KV bus, 161 KV circuit switcher, WEG power transformer, low-side, tie/transfer and (2) feeder breakers. Used typical SEL-387 and SEL-451 transformer relay panel for new substation equipment.

Tenth Ave Transformer: Checked approval drawings for Delta Star 69 KV power transformer. Removed and installed a new transformer and resolved Reinhausen tap changer control issue.

Battlefield Transformer: Checked approval drawings of 69 KV ABB transformer. Replaced and installed transformer and connected control circuits to existing transformer panel.