

Automated gang switches keep power flowing to generation pumping station

Remote switching interfaces utility's existing protocol programs

• Hubbell AR Switches and Cleveland/Price Motor Operators

U.S. Patents 6,207,919; 6,215,082; 6,281,460; 6,409,135; 6,459,053; 6,541,717; 6,818,846; 6,946,607.

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Uninterrupted power is critical for the Merom Pumping Station, which supports Hoosier Energy's primary generation station in southwestern Indiana. To ensure operating reliability, we designed an automation package that included three-phase gang-operated air break (GOAB) switches capable of remote operation.

Our initial consideration focused on GOABs with traditional down-the-pole control shafts. This design would give us both the desired remote control by motor operators and on-site manual operation.

Hookstick control preferred

When we learned of the hook stick operation option on the Hubbell AR Switch, we were impressed by several of its advantages for this package. By definition, the AR GOAB switches are Automation Ready, as their name implies.

For this vital site, easy operation and installation were imperative features to the



switch we would specify. The AR's hook stick option satisfied these criteria. It requires no field adjustment of its manual control and there are no control shaft sections to install.

Hoosier Energy is a generation and transmission cooperative providing wholesale electric power and services to 17 member electric distribution cooperatives in 48 central and southern Indiana counties. With headquarters in Bloomington, Indiana, Hoosier Energy operates two baseload power production facilities: The 1,070-megawatt Merom Generating Station and the 250-megawatt Ratts Generating Station. The cooperative also owns two peaking plants: The 174-megawatt Worthington Generating Station and the 258-megawatt Lawrence Generating Station.

High-voltage electric power is delivered to member cooperatives over a system of 1,400 miles of transmission lines and 14 primary substation facilities. Interconnections link Hoosier Energy with other major utilities in Indiana and neighboring states.

In addition, Hoosier Energy provides training, safety, marketing communications and technical services to its 17 member cooperatives. An estimated 650,000 residents, businesses, industries and farms in a 15,000-square-mile southern Indiana service area rely on Hoosier Energy's member distribution cooperatives for electric power.



Fast-action crossarm-mounted motor operator


What convinced us to select the AR switch was the crossarm-mounted motor operator available with the hook stick manual control option.

Not only does it contribute to maintaining the site's integrity for both the manual and remote operating means to be mounted out of public access. But this motor operator's rapid (0.4 second) switching speed also meets the site's uninterrupted power requirement.

User-friendly remote-operation software

Communications for remote switching with this motor operator let us continue to use computer programs integral to our other system controls. This compatibility keeps protocols consistent for our operations staff during potentially stressful circumstances at this site.



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AR Switch design features and benefits

- Automation-ready design
- 900-amp continuous and interruption current rating
- Four-link overtoggle mechanism
- Hook stick operation capability
- Unitized, pre-assembled construction
- Compatible with today's D/A environment by adding a motor operator and RTU of your choice, or up-grade in the future
- Meets present and future operation requirements
- Mechanical advantage reduces operating torque to the lowest level in the industry to date
- Overtoggle feature assures blades are closed and gives "snap" feedback to the operator
- Minimizes installation time, reduces possible vandalism, eliminates control adjustments
- Minimizes installation time and eliminates control adjustments



Crews appreciate ease of installation

These hook stick GOABs and crossarm-mounted motor operators were fast, simple and easy for our installing crews. They loved the one-lift, bolt-up mounting and the direct-connect phase terminals. And the open/close adjustment was just a matter of setting the arm connecting the operator to the interphase shaft. ■

For more information, contact your Hubbell Power Systems representative, fax 573-682-8714 or e-mail hpsliterature@hps.hubbell.com.

Motor operator features and benefits

The crossarm-mounted Cleaveland/Price PTAD motor operator incorporates these advantages.

Automation features:

- Dual source for the motor (AC or battery)
- Stallout timer that allows successive operation attempts on a stuck switch
- "Smart" battery disconnect to help prevent damage to the battery
- "No Go" function with status indication to help prevent underpowered switch operation
- Temperature-compensated battery charging circuit to help prevent over and under charging the battery
- Automatic battery testing
- Vented 33 A-H battery
- Automatic battery testing
- Fast (.4 second) high-torque operation
- Excellent ice-breaking ability

Operational features:

- Constant ready operation state - no mechanism wind-up required
- No decoupling procedure necessary - the PTAD automatically decouples for manual operation
- Decoupling not required to test the motor
- Linkage goes into full toggle with switch closed for momentary performance
- No decoupling procedure required for lockout
- Lockout of the motor by using a hotstick from ground level
- After manual operation, the switch can be resynchronized with the motor manually or remotely via SCADA
- No setting of limit switches required
- True switch status is always reported