

# Co-Generation Application Easily Accomplished with NOVA™ Recloser and Customized Form 6 Control

Woodruff Electric Cooperative Corporation, located in Forrest City, Arkansas, recently applied a NOVA™ recloser and Form 6 recloser control as an inter-tie device between their system and an industrial co-generator. The industrial facility installed a generator to supplement their power requirements.

While the co-generator had its own overcurrent voltage and frequency protection, Woodruff Electric added a primary protection recloser to isolate the co-generator from customers and prevent islanding on the system. If power from the generator feeds the electric system, Woodruff Electric opens the primary recloser. Furthermore, to prevent potential damage to the generator, Woodruff reconnects the industrial when the generator is offline.

Woodruff chose to install a NOVA™ recloser with Form 6 control and the graphical-based Idea Workbench™ easily implementing the custom logic for desired protective functions.

The protective scheme consisted of three functions:

1. Trip and lockout the NOVA™ recloser upon detection of reverse power after a configurable time delay. An option button on the front panel of the Form 6 control enabled easy blocking/unblocking of the reverse power trip function.
2. Perform an auto-restoration function when the generator source goes offline to enable the recloser to automatically close when voltage is present on the source side, but below a pre-defined threshold on the load side. The algorithm includes logic to block the restoration upon any other automatic protective trip function of the control. Under pre-defined conditions, the recloser will verify sync conditions and close in the recloser. An option button was configured to block/unblock the control auto-restoration function.
3. Quickly view status on the front panel, including blocking of the reverse power trip and automatic restore functions. The Form 6 control front panel was easily configured to display the following information:
  - Sync check function status indication.
  - An analog value for the voltage angle difference between source and load side voltages.
  - A sync check alarm indicator.
  - A sync close active blinking status indicator.



**Jim Cook, Electrical Engineer, Woodruff Electric with Form 6 control. Installed NOVA™ recloser.**

The NOVA™ recloser and Form 6 control were installed in June 2002 and control automation is next. By utilizing a control modem, current status, analog metering, the event recorder, and oscillographic data will be downloaded offsite.

*Jim Cook, Electrical Engineer, Woodruff Electric, comments, "The front panel of the Form 6 has several user-friendly features that will help our linemen operate this device.*

*"The original logic would not let the bypassed NOVA close onto the hot line after maintenance. An alternate profile was created in the field and uploaded to the control. We can enable this profile from the panel in the same way we would block ground trip when bypassing the device."*

Contact your Cooper Power Systems representative for details on co-generation solutions available with the NOVA™ recloser and Form 6 recloser control.

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