XtremeControl™ Control Logic Modeling

The XtremeControl graphical model building tool provides a simple and consistent method of modeling complex control systems. Included with XtremeControl are standard control system component models for such items as a PID controller, logical components (‘AND’ gates, ‘OR’ gates, etc.), square root extractor, amplifier, capacitor, etc.

Figure 1 is an example using XtremeControl model that is currently being used at the North Anna Power Station to control the 1H diesel. The diesel is able to be started, placed on the bus, synchronized with additional buses, add and subtract load, all while providing a fully dynamic response. Time to rated RPM and RPM overshoot have also been accurately modeled.

A very powerful tool included with XtremeControl is an object editor, which allows the user to generate XtremeControl model objects using existing control system code. For instance, if a user has the code for a control block in a Foxboro control system, the XtremeControl object editor may be used to create a duplicate of the Foxboro control block within XtremeControl. XtremeControl may then be used to model the entire Foxboro control system by connecting the blocks appropriately and assigning values for constants. This may also be done automatically if an ASCII output for the control system configuration is available.

Figure 1: XtremeControl™ Diesel Generator Controller