NovaTech®

Wisconsin Public Service

Substation Automation
Wisconsin Public Service

Customer
Wisconsin Public Service Co., Green Bay, WI (UPPCO) -- L'Anse Substation (one of 12 automated substations)

Project Scope
Five years ago, Wisconsin Public Service (WPS) came to NovaTech looking for an improved automation solution for their substations. Their existing conventional RTUs were functioning fine, connected to hard-wired I/O and reporting data to SCADA, but they needed more information from the new IEDs - relays, meters, regulators - being installed in the subs. They needed a solution that was flexible, yet powerful enough to handle a wide range of protocols and physical interfaces found in the dozen plus substations scheduled for upgrade. They also needed engineering "pass-through" access to new protective relays and preferred not to install any specialized comm processors. NovaTech offered the Orion5r Automation Platform and provided on-site training to get them started. Over a dozen WPS substations now share a common Orion-based design.

Challenges
- Integrate modern IEDs into a modern RTU, while continuing to use legacy RTU as I/O
- Access SEL® Relays through the RTU, eliminating the need for a "comm processor"
- Eliminate media converters and other external boxes where possible to simplify design

Type of Substation Automation Project
- Smart RTU (connected to IEDs)
- Remote Interface to protective relays
- Integration of existing RTU

NovaTech Hardware, Software, and Service Products
- NovaTech Orion5rs with protocols: DNP3.0 (Master and Slave, Serial and Ethernet TCP), SEL® Relay Master, PG&E 2179 Master, FTP, HTTP, and Modbus (Master and Slave Serial)
- NovaTech Communications Director (NCD) Configuration Software
- Training

Responsibilities of NovaTech, Other Vendors, and Utility
NovaTech supplied unconfigured Orion5r units to Wisconsin Public Service (WPS) with NCD software and two days of training on site. WPS' responsibilities included creation of configuration files, installation, testing, and commissioning.

Substation Local Area Network(s)
- DNP3.0 via Ethernet TCP between Orion5r Processors
- DNP3.0 Fiber Optic to Beckwith Regulators
- Modbus RS-485 to Bitronics Meters
- SEL® protocol over RS232 to SEL® Relays
- Modbus protocol over RS232 to Opto 22 RTU
- PG&E 2179 protocol to Cooper Form 4C Controller

SCADA Network and Protocol
- DNP3.0 Serial

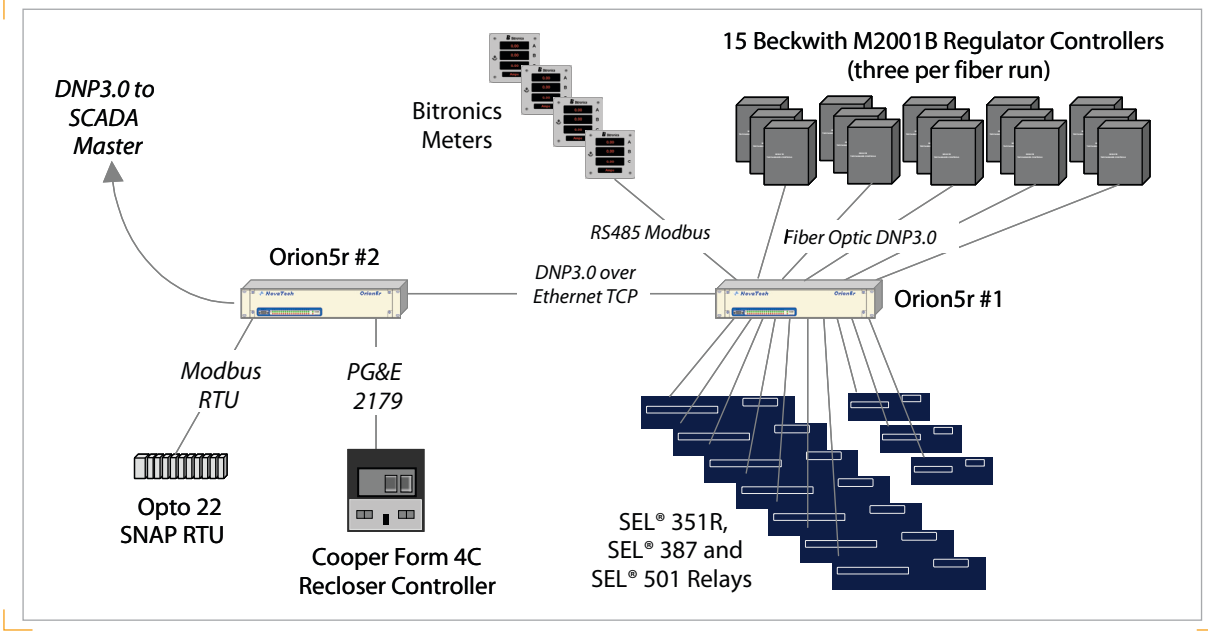
Contact:
NovaTech, LLC
13555 West 107th Street
Lenexa, KS 66215

T: 913.451.1880
F: 913.451.2845
www.novatechweb.com

IED INTERFACE DETAILS:

IEDs connected to Orion5r #1	Number	Interface Protocol	Data Retrieved	Control through IED?	Other
SEL® Relays	10		SCADA Analog Data	No	SEL®-351R, 387, and 501
Beckwith M2001B Regulator Controller	15		SCADA Status and Analog Data	Yes (tap raise / lower, modify set points)	
Bitronics Meters	4		SCADA Analog Data	No	

IEDs connected to Orion5r #2	Number	Interface Protocol	Data Retrieved	Control through IED?	Other
Opto 22 SNAP RTU	1	Modbus RTU Serial	SCADA Status and Analog Data	Yes	Two connections; master and Slave
Cooper Form 4C Recloser Controller	1	PG&E 2179	SCADA Status and Analog Data	No	



Wisconsin Public Service Co., L'Anse Substation

Copyright © 2008 NovaTech, LLC. All rights reserved. All brand and product names mentioned in this document are trademarks of their respective owners. NovaTech is a registered trademark of NovaTech, LLC. The information in this literature is subject to change without notice and is not to be construed as a warranty.
CS.WISC01.102308

Contact:
NovaTech, LLC
13555 West 107th Street
Lenexa, KS 66215

T: 913.451.1880
F: 913.451.2845
www.novatechweb.com

NovaTech®

Wisconsin Public Service