ABSTRACT for the 2015 ISA WWAC Symposium

# Distributed Network Protocol (DNP3) for Water Systems

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## SUBMISSION TYPE

30 minute presentation

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DNP3, SCADA, Control, Monitoring, Protocol

## ABSTRACT

United Water New Jersey (UWNJ) owns and operates a single 200 MGD Water Treatment Plant located in Haworth, NJ, serving nearly 1 million people in Bergen and Hudson counties. There are over 100 remote sites consisting of pump stations, wells, tanks, reservoirs, dams, pressure, etc., to support the distribution of water from the WTP. In 2010, UWNJ decided to upgrade its proprietary legacy remote site SCADA system with new open SCADA system that can support all remotes site monitoring and control functions. A key requirement of the new system was the remote site communication protocol.

UWNJ was not willing to accept the limitations of the legacy Modbus protocol with standard master – slave round robin polling, complex/custom programing for on-demand polling, and loss of data with a communication failure. Nor did UWNJ want to use a propriety protocol locking the company into a single vendor. UWNJ established the following general protocol requirements:

1. Actively supported open protocol
2. Time-stamped data and events
3. Provide report-by-exception
4. Easy configuration
5. Flexible communication (operate on serial and Ethernet networks)

To date UWNJ has successfully deployed new SCADA technology using DNP3 as the communications protocol to over 80 remote sites.

This presentation shall discuss the successful use of the DNP3 protocol in a water distribution SCADA system for the monitoring and control of 80+ remote sites in UWNJ distribution system. Furthermore the presentation will cover the pilot testing of DNP3 vs. Modbus at nine (9) new raw water wells, lessons learned of deploying DNP3, benefits of event time-stamped data, and implementation over multiple communication methods.

## ABOUT THE AUTHOR

**Keith Kolkebeck** *is the Director of Technology Solutions for United Water leading the corporate SCADA and GIS groups. Keith has more than 10 years of automation experience with 7 years focus in the Water and Waste Water sectors. Contact: Keith.Kolkebeck@unitedwater.com.*