

1199 Submersible Seal with Wireless Pressure Transmitter Used to Measure River Level for Gate Control

RESULTS

- Eliminated conduit installation and additional wires with wireless differential pressure level transmitters
- Reduced manual work and checkups



Rosemount 1199 Submersible Seal used for river level measurement

APPLICATION

Level measurement for river control

CUSTOMER

Augusta Utilities
Georgia, USA

Augusta Utilities is responsible for the manual operation of the canal gates located on the Augusta Canal. This waterway, which serves the co-generation power needs of downstream industry, is fed by the Savannah River which runs along the Georgia-South Carolina line.

CHALLENGE

The challenge to Augusta Utilities is being able to respond to changing river and canal levels in a timely manner and avoid emergency situations that can arise due to changing river levels, while responding to the power needs of downstream customers. Up until now, operators have had to drive once or twice daily to adjust the gates. Level measurements were based on visual observations and subject to error.

SOLUTION

Rosemount was asked to provide a solution for the Augusta Canal Gates Automation project and responded by supplying two 1199 Submersible Seals systems into stilling wells that were driven securely into the canal river bed. The 1199 remote seals are connected to 3051S wireless pressure transmitters that communicate with redundant wireless gateways. The information from the 1420 Gateway was mapped into Augusta Utilities' PLC via Modbus TCP/IP, and is used to automatically open and close the gates depending on water levels and power demand.

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Augusta Utilities sees this as a solution that saves the high cost of running conduit and wire in difficult-to-get-to locations and gives them access to continual diagnostic information from the wireless transmitters. However, the biggest payback is that PLC control of the gates allows Augusta Utilities to optimize the water level in the canal and automatically close or open the gates in the event of an emergency situation. Based on the successful results experienced, this could be the first of up to six more similar installations along the canal.

Note: The wireless transmitters have been placed in plastic enclosures, as shown in the photos, to minimize the curiosity of on-lookers. The mesh network here required a single repeater, since one of the level transmitters was located in a stilling well behind a large rock and was unable to see the gateway.

RESOURCES

Emerson Process Management Water/Wastewater Industries

<http://www2.emersonprocess.com/en-us/divisions/power-water/Pages/powerwater.aspx>

Rosemount 1199 Submersible Seal

<http://www2.emersonprocess.com/siteadmincenter/PM%20Rosemount%20Documents/00813-0100-4801.pdf>

Rosemount 3051S Series of Instrumentation

<http://www2.emersonprocess.com/siteadmincenter/PM%20Rosemount%20Documents/00813-0400-4016.pdf>



Rosemount 1199 Submersible Seal connected to 3051S wireless pressure transmitter.

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