APPLICATION SPOTLIGHT
Wireless Monitoring of Pump Status
APPLICATION:
A midstream gas distribution company had no visibility into pump operations that drain flood-prone areas housing critical equipment. The pumps guard against equipment flood damage that could result in costly maintenance and replacement costs.

PRODUCT SUPPLIED:
SignalFire Wireless Sensing System including:
- Discrete input A2 long range node
- Multi I/O module with discrete outputs
- Gateway Stick
- Solar Powered Repeater Station

CHALLENGE:
Pumps remove water in flood-prone areas to protect equipment from water damage. As pumps turn on/off remotely based on water presence, operators cannot confirm if they start and operate properly. A damaged starter or other problem could halt operations even after an operator turns on a pump. Should pumps not operate properly or at all, sites could become flooded, resulting in damage to equipment located at those areas. Workers needed real-time operational status of flood pumps without travelling to each individually or visiting different control buildings.

SOLUTION:
A SignalFire Remote Sensing System (SRFSS) provides wireless visibility into pump operations, indicating operational on/off status. By connecting the existing on/off dry contacts from the pump to an A2 wireless node equipped with digital inputs it then provides the measured signals to a gateway located on building rooftops 2.5 miles away. The Gateway stores the most recent readings of all nodes in the network in Modbus format. An interface with a multi I/O module forwards data to a PLC for wireless remote monitoring and control of different pumps. Operators have remote access to the PLC from a centrally-located control room that ties into all buildings.

A mesh network supports radio transmission of readings from A2 long range Nodes to the Gateway. A Parallel Repeater Station provides a secure, robust and redundant communication path for the data signal. As the gas distribution company adds more pumps, the mesh network supports additional nodes, enabling coverage of hundreds of square miles.