

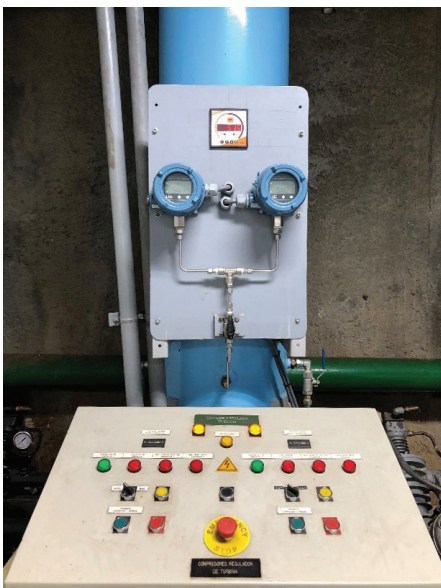
Case Study: Pump Lubrication System



APPLICATION CHALLENGE:

A major utility provider in Colombia operating numerous hydroelectric power generation facilities was experiencing challenges using competitive brands of mechanical pressure switches installed on a pump's lubrication oil system:

1. The process variable was hard to verify since there was no display on the switches and line gauges were located in hard-to-reach areas.
2. Maintenance time demands on the switches were about 1 hour per switch, with at least 2 maintenance cycles per year.



Minimal maintenance



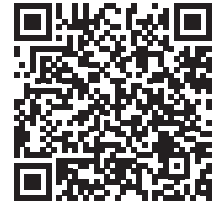
Visible Display



Reduced Inventory



1XTXSW, ALL-IN-ONE
TRANSMITTER + SWITCH



SOLUTION:

The hydroelectric power generating facility operator replaced 24 competitive mechanical switches with UE's All-in-ONE transmitter + switch across multiple applications. In the case of the lubrication oil system application, the 1XTXSW is used to ensure that when the oil pressure falls below 2.2 bar, the backup lube oil system engages to keep oil flowing through the turbine system. Among the 1XTXSW benefits are an integrated backlit display for local pressure indication; programmable setpoints and deadband that simplifies setup, calibration and maintenance; embedded device diagnostics for optimal functioning of the 1XTXSW, reducing service maintenance time.

The 1XTXSW was selected for the following reasons:

1. The customer had a lot of mechanical switches in their facility unable to display the process value. This made it hard for them to identify if the switch was functioning or not. The 1XTXSW was chosen because it comes with a **large integrated backlit display**, making it very easy and visible to read off the process variable in low lighting.
2. The All-in-ONE requires **very little maintenance**. Instead of calibrating the mechanical switches multiple times per year to ensure that the setpoint does not shift, the instrument technician can **program the setpoints and deadbands onsite** while having double verification of the process value with the adjacent gauge. The operator is **saving more than 80% of maintenance time** with the All-in-ONE.
3. With the dual relays that come with the device, the customer does not need to purchase multiple switches since they can use one relay for alarm notification and the other for emergency shutdown. This reduces their switch inventory by half. The operator is also planning to use the 4-20mA output to **trend their compressor pressure and valve positions for predictive maintenance**.

