

PROJECT: ALDEIA NOVA Project

Premises

Aldeia Nova (New Village) is one of most important ambitious projects in Angola. In this project, LR Group, as one of the biggest infrastructure companies in Angola needed to set pipes and transport water to 15 villages and to the Wuko Kungo city.

The Challenge

The water from the Cave River, located 15km from logistic center, is being pumped by five pumps to a 10000 liters operative tank. This 15km Line start as a 3.3km 20" steel line. From there, the pipes split into two varying diameter PVC pipes. Along the line are 17 check points' pits with air releasers and valves to change the water direction when needed. From the logistic center, the water is being elevated to the mountain, 40 meters high to another four 1100 liters operative tanks, after two filtering treatments (by Amiad). Using gravitation, the water is coming down to the villages through PVC pipes.

The Solution

Dorot Control Valves, along with other companies involved in this project, were sent in order to pump water to the villages and city. For this project Dorot supplied Air valves, pumps, QR valves, water meters, pressure reducing valves, pressure sustain valves, differential and Modulating float controlled valves,

The project was divided into a number of sites:

- Pump sites
- Logistics site
- Mountain tanks
- Water lines

Pump Sites

Exit from the pumps (total 5), PR/PS, Series 300, diameter 8", which I calibrated to 90 m sustaining and 75 m reducing, after adding needle valves and another water source, adjustment Limit switches connected to the electrical panel of the pumps, warn on the valve open/closed.

5 QR valves, series 300, 3" angle, which I set, discharge pressure of 110 meters.

5 units air valves 2". 5 units water meter, Woltman 8".

The 6" surge anticipating valve series 100 was changed to QR and set to discharge pressure of 80 meters.

Logistic Site

4 units Differential Float Controlled Valve, series 100, 8", arrangement of command tubing, adjustment of the float to terraced heights, reversion one valve, enable electric closure from Amiad filters during washing.

I modified the 3W pressure reducing, series 100, 8", for water supply to containers on the mountain to a 2W pressure reducing. Woltman water meter 12", at the outlet of Amiad filters, needs to be converted output pulse 1:1000. Amiad want change the surge anticipating electric valve at the output of the filters, to a surge anticipating hydraulic valve.

Mountain Tanks

4 valves, Modulating Float Controlled, Series 500, diameter 4". Checked integrity of the system after replacement valves were installed by Yossi.

Water Lines

In the transition between the steel pipe and PVC pipe in a ditch, there is a PR/PS Series 300, 12" valve. I cancelled the PS and moved the PR pilot to the ditch entrance with two pressure gauges at the upstream and downstream. PR set to 33 m.

On the water line that goes into the city, there is a PR/PS Series 100 12" valve. I cancelled the PS and moved the PR to the entrance of the ditch. Pilot was not set since water was not directed toward city when I left Angola.

QR on the water pipe leading logistics center were set according to conditions existing at the point where the QR are installed. Total 3 QR.

Datum's of Village Specifications

- Prison Junction Specification: Dig to expose valves, add wheels to gate valves, and fence the ditch.
- Entrance to the village 2: Connect Amiad Filters to logistics center line.
- Northern entrance to village 1: add adjustment screws to pilots.
- Southern entrance to village 1: add adjustment screws to pilots.
- Entrance to village 3: Butterfly valves not operational, pressure gauges are missing, no filtering mesh on Amiad filters.
- Entrance to village 4: Butterfly valves not operational, no pilots on valves, need weeding.

Summary

Dorot Valves are functioning and operating properly.

Future Recommendations

After several months of operation, a professional person should check the system.

At the junction between the steel and PVC pipes in the ditch there is a 12" valve. A big pilot for fast reducing, should be added and afterwards it should enter the smaller 2w PR.

Replace pulse output of the 12" water meter from the outlet filters to 1:1000.

Convert the RE/EL at the outlet of the filters to a hydraulic RE.

