

Automation Control on Water Supply Networks

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Abstract: Application of new technology and "smart" devices is the most well-known experience in all type of works for sustainable services, including water supply networks. Measuring from the distance including online monitoring is one of the easiest way to control flow and pressure on these networks, especially on District Metering Areas (DMA). In order to reduce losses in the network, nowadays, online monitoring and controlling is more than a necessity. Water loss reduction is one of the biggest challenges today in the industry of water treatment. Applying these automatic and electronic devices will be presented below with real measures on site and real examples on Regional Water Company Prishtina service area.

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1. INTRODUCTION

Water loss reduction is one of the main tasks in RWC Prishtina, also in whole Balkan region, due to high percentage of water loss, as it is presented in international reports and conferences, (*International water Benchmark*) even though it is fact that Kosovo especially "RWC Prishtina" is in a better level compared to neighboring countries like FYR Macedonia, Albania, Serbia, Montenegro etc. "RWC Prishtina" has 47÷49 % level of Non-Revenue Water (NRW), Macedonia 65÷68 % NRW, Albania 67÷70 % NRW.

Water loss can be controlled in many ways including but not limited to electronic devices, site surveys, automatic and online control, but it also needs a huge activity and work on site depended from different distribution system networks. The purpose of this stage is to identify the area of the network in which leakage is occurring in order to prioritize field surveys. A popular approach is to divide the network into District Meter Areas (DMAs) by closing valves

permanently and installing meters equipped with telemetry data loggers in order to allow the Utility to monitor consumption in a continuous way on a particular zone from which an estimate of leakage can be estimated. Another method, known as mobile waste metering, involves valves being shut temporarily and mobile meters, installed in vans and connected via flexible hoses to permanent connections in the network, being used to measure flows. A hybrid system involves permanently installed meters with the boundary valves being closed temporarily to measure a night flow¹. These days all the utilities in region have an intention to apply IWA rules and regulations, including water balances in order to see and to have a better control in all levels. The ways how to tackle these problems on water losses are different on approach but finally all the methods have the same goal, try to achieve the lowest percentage of real water loss. RWC Prishtina is implementing automatic control systems like online monitoring and real measures on site with automation technology. Parallel to the investments on technology, of course, there is a

need on training human resources and workers. To monitor and survey such isolated zones (DMA zones), it is mandatory to have a trained staff with right equipment (fully equipped) with all devices. Water loss reduction is closely tied

2. PRACTICES AND WELL KNOWN DEVICES FOR FLOW AND PRESSURE CONTROL.

The most well-known devices for online monitoring for flow and pressure are gprs pressure loggers, ultrasonic flow meters. As far as leak detections, the collocation method is commonly used.

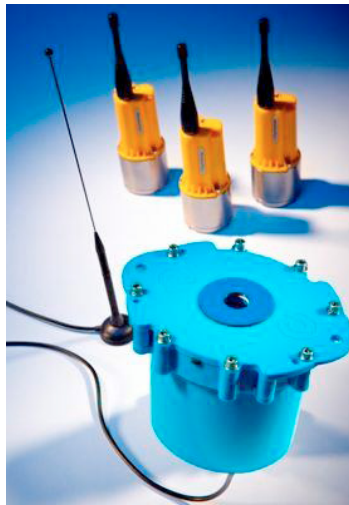


Fig. 1. GPRS Flow and Pressure Logger

The device set up is presented below, of course it needs its own software to set it up, proper bulk water meter with a transmitter plug option, and then on these plugs it is easily accessible to insert the device.

to improved services to the consumers, residents. This paper will be present five pilot DMA-s, and a detailed one in Lipjan town as an online monitoring zone for longer time.

RWC Prishtina these days has five online monitoring zones, with intention to extend these zones on to 16 more; these days' utility is using online monitoring device with gprs card transmitter as it is shown on the picture below.



Fig.2 a)Setting up the device
Fig. 2,b) installing into main pipes

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