



SMANJENJE GUBITAKA PRIMENOM NOVIH TEHNOLOGIJA U MARENJU I OČITAVANJU POTROŠNJE

REDUCTION OF LOSSES BY APPLYING NEW TECHNOLOGIES IN MEASUREMENT AND READOUTS

REZIME

Cilj ovog rada je da se analizom propisanih metroloških svojstava merila protoka vode ukaže na mogućnost smanjenja gubitaka u vodovodnim sistemima kao i da se pokaže da je pravilan izbor mehanizma, merila, principa merenja i načina očitavanja potrošnje od neprocenjive važnosti za smanjenje gubitaka.

Ključne reči: smanjenje gubitaka, metrološki uslovi, metrološka klasa tačnosti, mehanizam, ultrazvučni signal, MID, Hydrus, očitavanje potrošnje

ABSTRACT

The aim of of this study is to indicate the possibility of reducing water losses in water supply systems by using proper analysis of prescribed metrological characteristics of water meter, as well as to show that the proper choice of a mechanism, standards, principles and methods of measuring of consumption reading is indispensable to reduce losses.

Key words: reduction of losses, metrological conditions, metrological accuracy class, mechanism, ultrasonic pulse, MID, Hydrus, readout

1. UVOD

Kriza snabdevanja vodom u cilju obezbeđivanja osnovnih potreba stanovništva danas predstavlja veoma veliki problem kome se posvećuje dosta pažnje, a koji pored lokalne poprima i globalne razmere. Specifična potrošnja vode po stanovniku se na osnovu važećih standarda u svetu, kreće u veoma velikom rasponu i iznosi od 40-50 m³ po stanovniku godišnje za nerazvijene zemlje dok u evropskim okvirima ona iznosi i preko 700 m³. U našim uslovima, prema važećim standardima smatra se da je potrošnja od 200 l po glavi stanovnika dovoljna da zadovolji sve dnevne potrebe.

Problem nastaje kada sa jedne strane određeni korisnici vodovodnog sistema koriste količine vode koje su više nego dovoljne što direktno prouzrokuje otežano snabdevanje ostalih korisnika u sistemu, dok se sa druge strane usled klimatski uslova, a naročito u letnjim i sušnim periodima kao i usled gubitaka u vodovodnim sistemima vrši otežano snabdevanje svih korisnika. Prvi deo problema direktno ukazuje na nedovoljnu svest samih korisnika o važnosti i značaju vode kao obnovljivom ali ograničenom resursu dok drugi deo ukazuje na potrebu iznalaženje tehničkih i tehnoloških inovacija kako bi se nastali gubici u vo-

1. INTRODUCTION

The crisis of water supply, in order to provide the basic needs of the population, is a very big problem that draws a lot of attention today, and which also expands from local to a global scale. Specific water consumption- per capita, according to the current standards in the world, varies and it ranges from 40-50 m³ per capita per year in developing countries while in the European context it is over 700 m³. In our conditions, according to current standards it is considered that the consumption of 200 liters per capita is enough to meet all the daily needs of one person.

The problem arises when one side, some users of water system use more water than it is enough for their daily needs, which directly causes difficulties in supplying of other users in the system, while on the other hand, due to climatic conditions, especially in summer and dry periods and of losses in water systems difficulties supplying all users occur. The first part of the problem directly points to the lack of awareness of certain users of the importance of water as a renewable but limited resource, while the second part indicates the need for identifying the technical and technological innovations in order to reduce and bring to sustainable levels, incurred lo-