Dear Editor of Journal of Drinking Water Engineering and Science
April 25, 2022
Re: Manuscript reference No: dwes-2020-37

Please find attached a revised version of our manuscript "**The Evaluation of Reliability Indices in Water Distribution Networks under Pipe Failure Condition**", which we would like to resubmit for publication as a Research papers in **Journal of Drinking Water Engineering and Science**. Reviewer' comments were highly insightful and enabled us to greatly improve the quality of our manuscript. We edited the paper in terms of scientific and language view. In the following pages are our point-by-point responses to each of the comments of the reviewer. Revisions in the text of manuscript are shown using yellow highlight for additions and changing according to suggestions. Reviewer' comments are shown in black color, and the blue color regular font is used for our responses. We hope that the revisions in the manuscript and our accompanying responses will be sufficient to make our manuscript suitable for publication in **Journal of Drinking Water Engineering and Science**. We shall look forward to hearing from you at your earliest convenience.

Anonymous Referee #1

- I recommend to accept the paper as it is.

Many thanks the honorable reviewer for his/her comment.

André Marques Arsénio(cc1)

- In general, I do like to approach followed but a question remains: what is the impact of these solutions in water quality aspects, particularly water age. In fact, the solution for the Iranian network renders low velocities that makes me wonders how would the network perform (in regards to in-pipe velocity) during low consumption periods.

The present paper was aimed at the evaluation of hydraulic reliability indices under pipe failure conditions and the capabilities of these indicators in different hydraulic conditions of the network are discussed. Quality issues that have their own indices and broad topics are specifically discussed in the relevant articles.

The response to the reviewer regarding this comment was clearly added to the manuscript and it should be noted that the subject of this paper was the evaluation of hydraulic reliability indices under the pipe failure condition. The word "hydraulic" was added to the title of the paper to emphasize and clarify the issue.

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Due to the nonlinearity of the hydraulic relationships in the network and the many patterns for arranging the diameter of large network pipes, choosing the optimal diameter in large

network problems complicates the solving optimization problems. This is a very well-known phrase in solving the problems of optimal design of water distribution networks, and it has been mentioned in many authoritative papers and books, some of which are mentioned below. It is surprising for the authors that the reviewer asked about such .simple issues in the field of networks

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:https://doi.org/10.1016/j.gsf.2021.101276
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