Ms. Ref. No.: EPSR-D-17-00934

Title: Distance Protection Zone 3 Misoperation During System Wide Cascading Events: The Problem and a Survey of Solutions Electric Power Systems Research

Dear Mr. Ahmad Abdullah,

Thank you for submitting your paper entitled, "Distance Protection Zone 3 Misoperation During System Wide Cascading Events: The Problem and a Survey of Solutions".

Please find appended our referees' reports on your paper; unfortunately, the referees feel that additional changes are necessary before publication is possible.

Further revision of the paper might satisfy the referees if the comments in their reports are addressed. If you decide to revise the work, please submit a list of changes or a rebuttal against each point which is being raised when you submit the revised manuscript.

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Yours sincerely,

J Derald Derald Morgan, PhD

Editor

Electric Power Systems Research

While submitting the revised manuscript, please double check the author names provided in the submission so that authorship related changes are made in the revision stage. If your manuscript is accepted, any authorship change will involve approval from co-authors and respective editor handling the submission and this may cause a significant delay in publishing your manuscript.

Reviewers' comments:

Reviewer #1: The authors in the paper deal with distance relay zone 3 misoperation, which is responsible for major blackouts around the world. Authors well presented and made description of the problem in Fig. 1. and equation (1) and (2). After that they described some solutions and measures from the literature to avoid this problem.

This paper can be described as a review paper since there is no from my point of view scientific and research work in it.

It would be good for readers of the Journal if the authors give some figures and distance relay plots with impedance trajectory and additional equations to describe measures in chapters 3, 4 and especially in chapter 5.

From conclusion and the whole paper nobody can make decision which method of mitigation of zone 3 misoperation is the best. Please let authors be more precisely in the conclusion. There is many "however" in the conclusion.

Reviewer #2: A new perspective related to distance protection misoperation during system wide cascading events has been presented in survey article. Distance protection misoperation has been highlighted as one of the most often contributors to large system blackouts throughout the world.

Research contributions

1. Distance protection zone 3 misoperation is well explained with simplified problem formulation.

2. Useful literature survey is conducted and adequate references are used.

3. Reviewed articles are classified in three basic categories: detection and mitigation of zone 3 misoperation in the planning stage, communication assisted schemes and modifications to local distance protection. Presented classification contributes to better understanding of the solutions core. At the end of corresponding sections, valuable conclusions and remarks have been highlighted.

4. The survey article presents the great start point for future research related to solving distance protection misoperation and its significant consequences.

Writing and grammar quality

The English is very good. There is no significant number of grammar and spelling errors. Scientific writing methodology is well adapted to survey research style (The sections are well organized and described).

Remarks and questions

1. Although Abstract is concise, it would be useful to add one or two sentences with aim to explain introduced classification of reviewed articles.

2. For readers and future researchers it would be very useful to introduce a few more illustrations related to most important review articles (e.g. references [25], [30], [37], [45] and [46]). A few figures explaining the basic idea behind proposed solutions from articles can be of great value for readers (good figure can replace whole paragraph).

Reviewer #3: Detailed Review Comments to author This paper presented the problem and provides a survey on the research efforts made to increase distance relay security to prevent distance protection misoperation.

Following is a list of recommendations that might help improving the paper.

1- The paper requires editing in general.

2- The reviewer did not find a new contribution in this paper, which justifies some publication in this area.

3- Add figure and table that shows the distance relay security to prevent distance protection misoperation that were published in periodicals.

4- Literature review should be provided properly to clear the importance of authors' work.

5- The conclusions are not clear. The Conclusion section should be more detailed and definite.

6- The paper abstract shall be revised and improved with aim to express the novelty of contribution.