Review of: "Mathematical Assessment of the Reliability in a Complex Deregulated Power System"

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Potential competing interests: No potential competing interests to declare.

In the paper is presented an analytical model for calculation of the availability function of the bulk reliability system, as well as a wide discussion of different topics about the reliability of complex deregulated power systems, including detecting weaknesses in transmission that can occur.

It is my understanding that the main result of the paper is proposed and verified procedure for selecting the optimal placement of DGs and FACTS devices in order to obtain more accurate and faster reliability assessments.

Within the discussion, among other items, it is underlined the importance of comprehensive short-term and long-term planning efforts within power system planning.

It is not clear how is performed comprehensive balancing and the system stability examination of the restructured power system with high penetration of i-RES. In fact, what would be the outcome of the examination? Placement of DGs and FACTS devices with, or without, appropriate costs? Is it possible, by using this method, to examine different options in the power system’s technology structure transition and then select the best one? In other words, can presented procedure be applied for reliability and grid congestion estimation of the power systems within evaluation of the system’s technology transition paths towered high penetration of i-RES?

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