

**Effect of Input Convergence Using Different Size of Input Data**

*N.N.R.Roslan<sup>1</sup> and M.I.M.Ridzuan<sup>2</sup>*

College of Engineering, Universiti Malaysia Pahang, 26300 Gambang, Pahang, Malaysia

*\*Corresponding author: <sup>1</sup>nabihahrusyda96@gmail.com, <sup>2</sup>ikhwanr@ump.edu.my*

***Abstract***

As a useful tool to analyze reliability, Monte Carlo will be used in this research. By using the IEEE-14 buses network, two fault rates will be used which are large and small values. However, the size of the input data will be tested at input convergence, which are time to fail (TTF) and time to repair (TTR). In a simulation, a variance reduction method will be applied to MCS to watch the effect of input data. However, based on the current discovery, the input convergence with small input data are fails to converge due to the size of the fault rate, despite that, the simulation with bigger fault rates able to stop before the decided years. Based on the calculated reliability indices, the simulation that applied bigger TTF and TTR would help to increase the speed of CPU and reduced the time taken to complete a simulation compared when using smaller input data.

*Keywords:* Distribution system; Time to fail; Time to repair; Monte Carlo.