ABSTRACT: Power system state estimation is defined as the processing of a set of measurement meters in order to compute the states of the system. This paper presents a comparative study between three different sets of redundant measurement meters, namely, high, normal, and low redundant measurements. The study compares the performance of the weighted least square state estimator in identifying the presence of bad measurements. The comparative study is assessed by running a series of power system state estimation simulations of different measurement types and magnitudes.