ABSTRACT

In statistical process control planning of proficient control charts for monitoring manufacturing processes and recognizing assignable cause of variations is of constant interest. Process monitoring through control charts in statistical process control become popular practice. The present study includes neoteric ranked set sampling to design more efficient exponentially weighted moving average control charts for monitoring the dispersion of normal process. We develop new EWMA chart based on a wide range of dispersion estimates for processes following normal processes. Using Monte Carlo simulations, the performance of the proposed chart is evaluated on the basis of average run length and standard deviation of the run length. The performance of chart by using different dispersion estimators is evaluated and compared on basis of ARL and SDRL. As the result for supervising dispersion of normal processes our proposed EWMA dispersion control charts created on NRSS technique are proficient substitute to control charts designed by SRS. We acknowledged that under the ideal normality conditions, the best introduction is appeared by the S.D and Downtown are better and for small n range shows slight edge on S.D and Downtown. Relative accomplishment of the R and IQR charts reduces with an ascent in n. Graphical representation is used to inspect the overall efficiency of the different EWMA dispersion charts.