Abstract

This research aims to obtain an economic design of nonconforming control chart. The design includes sample size $(n)$, defect acceptance $(d)$ and interval time of sample $(h)$ and the costs considering in this research include 1) sampling and testing cost, 2) cost of examining causes while warning signal is occurred, 3) cost incurred when the process is out of control, 4) cost incurred when the process is discontinued, and 5) cost of correcting the process. Further, two situations are considered in this research. They are Duncan process and Shutdown process. Duncan process is that process is continued during problem detecting and process adjusting. Shutdown process is that process is discontinued during problem detecting and process adjusting. Each process provides different cost functions and operation interval time cycles and they are shown in this research. The models of cost per time period are given for both processes. The risks of producers and customers are considered. A computer program is constructed to find an economic point of designs. A numerical example is given to illustrate the models. Sensitivity analysis is then provided.