

ABSTRACT

Unit Pelaksana Teknis (UPT) Depo Lokomotif Yogyakarta is a place to carry out maintenance and minor repairs of locomotive engines which are part of the SARANA PT KERETA API INDONESIA (PERSERO) unit for OPERATION VI YOGYAKARTA REGION, located on Jalan Suryonegaran. No. 37 or 100 m northwest of Yogyakarta monument station. During the operation of the minor repair process in the GE C18MMi Locomotive subsystem unit during 2018, the Yogyakarta Lokomotif UPT depot experienced a problem of delays from minor repair operations due to the unavailability (stockout) of spare parts in the stock room. One of the contributing factors is the uncertainty of the failure occurrence of spare parts when operating a railroad travel service. Therefore, it is necessary to propose a GE C18MMi Locomotive Engine spare part inventory control policy in determining the optimum purchase quantity of these spare parts, so that stockout problems due to uncertainty of failure occurrence of the GE C18MMi Locomotive Engine can be minimized, so as to improve service levels. This research was conducted with the proposed GE C18MMi locomotive spare parts inventory control policy using the Continuous Review (s, Q) method with discrete demand patterns in the form of the failure occurrence equation based on the poisson process in determining the probability failure occurrence to determine the cumulative service level. in accordance with the safety availability standard EN 50126 for the company. The results of the inventory computation carried out for the proposed inventory policy using the Continuous Review (s, Q) method were able to increase the service level by 12.35% in accordance with the company's standard provisions which refer to the safety availability regulations EN 50126 on the railways system.

Keywords: Critical Parts, GE C18MMi Locomotive, Failure Occurrence, Continuous Review (s, Q), Service Level