

Abstract

The purpose of the study was to establish the maintenance practices at KenGen, to benchmark and evaluate the Practices with the world best maintenance practices and to determine the relationship between maintenance practices and plant performance in terms of availability and operation and maintenance costs. The case study was done with a target population of all the three operational areas with different generation technology of hydro, thermal and geothermal. The study used primary data which was gathered by means of a self-administered questionnaire issued to respondents and secondary data which was extracted from internal operational reports in Eastern hydro power stations. The average of each aspect was calculated and the quantity identified to evaluate the maintenance practices at KenGen and to benchmark with the world best practices. The secondary data analysis involved the use of regression to determine the relationship between the maintenance practices and plants performance. The study established that KenGen has in place good maintenance practices. When they were benchmarked with world best practice, it was apparent that breakdown maintenances works were extremely high but surprisingly the plants availability recording very good results. There was a weak relationship between O&M cost, number of breakdowns and the plant availabilities. The study concluded that though KenGen has good maintenance practices, the high breakdown maintenances works recorded is as a result of poor maintenance works and contributes to a great extent the 13% revenue loss incurred by KenGen. The study recommended that for reliable and competitively priced electric power in Kenya, there is need to have the power utilities enhance their maintenance practices for effective and efficient generation and distribution of power to meet the customers' expectations. This therefore calls for improvement of maintenance practices to meet world best practices by building internal capacities and having proactive internal technical trainings and audits.