DEVELOPMENT OF COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM TO IMPROVE AVAIALABILITY OF GAS TURBINE IN POWER PLANT: A case study of kinyerezi 1 Gas plant

By

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Abstract

Maintenance management tools such as computerized maintenance management system (CMMS) have been implemented in various industries to improve maintenance process quality. This report aims to demonstrate that management system can be applied as an availability performance improvement tool in monitoring, control and planning of maintenance of equipment in power plants.

At kinyerezi 1 Gas plant, maintenance plant are not planned according the demand of load to the grid and maintenance management system not implemented equipment documentation is not readily accessible which is either caused by not considering maintenance during equipment purchasing and not using modern maintenance management techniques.

In the assessment of the equipment in turbine and long restoration of turbine, it has been observed that, equipment failure and long restoration of turbine may be caused by lack of maintenance planning, control and plan maintenance, careless of the operation of equipment , long process in procuring and purchasing inventory and other factors such as poor inventory control and lack of too or systems for gas turbine. This problem leads to the decrease of availability of gas turbine because the number of forced outages will increase.

The study, therefore, aimed at developing a computerized maintenance management system that thought to improve availability performance of gas turbine. The objectives that guided the study were to identify the factors affecting the availability, to develop a maintenance management model and then the computerized maintenance management system. The methods used to collect data were physical observation,literatuture study, benchmarking, a visit to the maintenance department, a meeting with technical staff at kinyerezi I Gas plant, questionnaires circulated to kinyerezi 1 Gas plant and the maintenance Department analysis (MDA) tools were developed and used to evaluate the overall maintenance practices. The study also found there are other factors that affect the reliability of a FM transmitting station. These factors are availability of spare parts, availability of maintenance of tools availability of maintenance personnel and support from management.

The computerized maintenance management system has been developed from conceptual model provides a systematic way of maintenance and improving the availability of gas turbine by reducing the number of failures and downtime of the gas turbine. The research recommends the introduction of computerized maintenance management system for the best practice to all maintenance activities.

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